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Student Achievement Outcomes, Classroom Engagement, and Perceptions of the Flipped Classroom

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STUDENT ACHIEVEMENT OUTCOMES, CLASSROOM ENGAGEMENT, AND PERCEPTIONS OF THE FLIPPED CLASSROOM

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Abstract

The purpose of this thesis was to review the literature surrounding the flipped classroom in K-12 and post-secondary education levels. The literature review highlighted the effects of the flipped classroom on student achievement outcomes and levels of engagement, and perceptions of the flipped classroom, as noted by both students and instructors. The literature reveals a weak relationship between the flipped classroom and student achievement outcomes but shows a moderate increase in student engagement levels in several empirical studies. Student perceptions of the flipped classroom are positive, with autonomy, flexibility, and active learning being integral to this model's success. Instructors have expressed various concerns but promote this methodology as a means to increase collaboration and active learning in the classroom.

Table of Contents

CHAPTER I: INTRODUCTION

“Alright class. Take out your notebooks and copy down the overhead transparency. When you are finished, please open your textbooks to page 64 and answer questions 1-15. If you do not finish, this will be homework due at the beginning of class tomorrow.” These phrases are all too common in the American public-school system. Students sit in a row of desks and take detailed notes, the instructor lectures on new content in the front of the room, and students complete readings and worksheets as homework assignments in the remaining class time. In this traditional style of instruction, the teacher is the possessor of knowledge and students are passive recipients. It is becoming increasingly difficult to reconcile the goals of modern education with this traditional style of instruction. How can educators reach all students and empower them to achieve success, if they are using a one-size-fits-all approach to their instruction?

Bergtrom (2011) notes that class time is simply a passive repetition of content introduced to students the night before. Class then, is just a mirror of content that students were already exposed to, which is neither engaging nor leads to deeper levels of understanding. It is also difficult to achieve an acceptable pace that will benefit all students in lecture-style instruction (Chen, 2016). Students will become disengaged if they feel that the instructor is moving too slowly or can feel frustrated and defeated if the instructor is presenting the content too quickly for them to understand.

With these issues in mind, school districts are constantly looking for new and innovative ways to reach all students and provide them an equal opportunity for learning. Each student has different strengths and unique needs that need to be met in order for learning to occur. Howard Gardner, one of the first proponents of this idea, theorized that

individuals have multiple intelligences that can present themselves in different contexts (Gardner, 1983). Gardner concluded that there are a variety of intelligences, such as linguistic, logical-mathematical, spatial, and bodily/kinesthetic, and that a person can possess high levels of intelligence in one or even multiple categories. The one-size-fits-all model that is traditional instruction does not support this idea, as it does not consider the idea that different students learn in different ways. The need to differentiate instruction for a variety of learners is now apparent. Watts-Taffe et al. (2012, p. 2) define differentiation as "responsive instruction designed to meet unique individual student needs." True differentiation is hard to achieve in the traditional classroom, because the instructor spends the majority of class time disseminating content. There is little time remaining for diverse activities that would benefit a variety of learners.

Furthermore, many have viewed the type of learning done in a traditional classroom as passive, rather than active. The literature surrounding education supports the notion that students learn best when they are constructing their own knowledge through collaboration and active learning. John Dewey, one of the earliest theorists of modern education, argued that individuals learn through experience and that students need to be active participants in the learning process (Dewey, 1938). Interacting and collaborating with, in addition to constructing new knowledge with others, builds on this experience and leads to deeper levels of learning. Students can construct their own knowledge via active learning activities done in class. Prince (2004, p. 1) defines active learning as "any instructional method that engages students in the learning process." Students are active, rather than passive, participants in the classroom. For the purpose of this paper, I sought to find a style of instruction that seemed to eliminate the problems inherent in a traditional classroom, all while promoting constructivist

ideals and an active learning philosophy. I settled upon the flipped classroom, a relatively new approach to instruction, and a method of teaching that has promise to benefit all types of learners.

What is a Flipped Classroom?

The goals of a flipped classroom are simple. A flipped classroom moves the learning typically done in a traditional setting outside of the classroom to make room for learning activities that will promote a deeper understanding of course content inside of the classroom. This is most often done by having students view pre-recorded lectures as homework before they come to a face-to-face class session (Chen, 2016; Gaughan, 2014; Whitman Cobb, 2016). One may assume that access to technology is an important, if not integral, component of the flipped classroom. Leo and Puzio (2016), however, explain that a flipped classroom is not simply a collection of online lectures, but is an instructional style in which students are exposed to new content before class, so they are prepared to engage in active learning exercises in the classroom to build on that new content. Others note that any type of content dissemination before class constitutes the base of the flipped classroom (Chen, 2016; Westermann, 2014).

The type of active learning done in a flipped classroom depends on the instructor, the content area, and the grade level of students being taught. Discussions, group work, projects, debates, laboratories, role plays, and simulations are just some of the things that can be performed in class to promote a deeper understanding of the content delivered to students the night before (Chen, 2016; Roehling, Root Luna, Richie & Shaughnessy, 2017; Unal & Unal, 2017; Whitman Cobb, 2016). Perhaps the biggest difference between the flipped and traditional classroom is the role of the instructor. In a flipped classroom, the teachers' role

changes from the sole possessor of knowledge to one that is there to facilitate learning and help students construct knowledge, form opinions, and come to valuable conclusions on their own (Leo & Puzio, 2016). Winter (2018) also notes that in a flipped classroom, the teacher is better equipped to differentiate instruction for different learning styles, as they no longer spend the majority of class time lecturing in front of the classroom. The role of the student changes as well in a flipped classroom. They are no longer allowed to be passive recipients of knowledge in class. Passive learning and lower-level thinking now occurs outside of the classroom (Whitman Cobb, 2016), while higher-order thought processes now occur inside the classroom via active learning exercises (Westermann, 2014). The flipped classroom can come in many forms, demonstrated by countless instructors over the past few decades, and has become increasingly prevalent in the education system as access to and use of technology in schools increases.

History of the Flipped Classroom

Before the flipped classroom became what it is today, educators and researchers noted the benefits of active, rather than passive, learning done in class. A report conducted by Springer (1997) found that students in an undergraduate science and engineering course were better able to use higher-order thinking skills when exposed to active learning exercises in class. Compared to students in a traditional classroom setting, students exposed to active learning techniques showed higher levels of understanding abstract concepts and a greater ability to connect class content to real-world situations. This research demonstrates that traditional classrooms may not benefit students the most, in terms of critical thinking and abstract reasoning capabilities.

Others began experimenting with alternatives to the traditional classroom as technology and technology-based learning became more commonplace in the education system. Osguthorpe and Graham (2003) explained that increases in technology in schools allow teachers to blend their classrooms. In other words, teachers can now provide students with a mix of online and face-to-face instruction. Riffell and Sibley (2005) utilized a blended classroom in an Introductory Biology course to study the effects of hybrid learning on student achievement. They found that students exposed to a mixture of online learning activities and in-class learning showed higher learning gains throughout the semester than students in the traditional course with no online component.

Some instructors warn against a fully online classroom, noting the lack of collaboration and face-to-face communication between students and the instructor (Heinze & Procter, 2004). The flipped classroom addresses this by utilizing technology via online learning as well as face-to-face class sessions. Lage, Platt, and Treglia (2000) noted the benefits that technology could have in our education system, specifically explaining that increases in technology and multimedia access allows teachers to better differentiate instruction for their students. In their Introductory Economics course, students viewed videotaped lectures before class and completed collaborative activities such as experiments, simulations, and group discussions during class time. The positive perceptions of the course, noted by both students and professors, showed early promise for this new method of instruction.

The flipped classroom gained true recognition though, when two chemistry teachers from Colorado implemented this style of teaching in their Advanced Placement Chemistry course. Jonathan Bergmann and Aaron Sams (2012) wanted to eliminate some of the larger

problems inherent in a traditional classroom. Often, it can appear as if students grasp and understand the content being presented in class, only to find out that they cannot apply the material on homework assignments when they get home. Bergmann and Sams (2012) designed their course so they would be present to help students engage with and apply the difficult concepts that were delivered to students in online lectures the night before. Their idea that lecture could be presented before class, freeing up class time for student-centered activities and instruction, is now a common instructional practice and has been replicated and modified by instructors of all age levels and content areas.

Current Trends of the Flipped Classroom

The flipped classroom is now a style of instruction that is commonplace in the global education system. As access to technology improves, an increasing number of school districts are utilizing this instructional practice to benefit their students. The Flipped Learning Network, an online community dedicated to advances in flipped learning, partnered with the National Education Nonprofit Organization, Project Tomorrow© in the 2014 annual Speak Up online survey. Results of the survey indicate that an increasing number of educators are implementing flipped learning methodologies in their classrooms. The survey revealed that 4,326 district administrators from 2,600 school districts across the United States reported that they are seeing their teachers using online videos or self-created videos as a method of flipped instruction at significantly higher rates. Over a three-year period of conducting the survey, Project Tomorrow© found that the number of K-12 teachers who are creating their own videos for flipped learning rose from 19 to 29 percent (“Project Tomorrow”, n.d.).

Many educators celebrate the rise in the flipped classrooms’ popularity, noting the benefits that this instructional method will have on their students. In contrast to a traditional

classroom, students in a flipped classroom will have a greater awareness of what they know and what they are still confused about (Fautch, 2015). Because they are able to move at their own pace, they are more likely to take control of their learning and make practical decisions about how to bridge the gap in their knowledge. The instructor is also better equipped to help those students of varying abilities and learning styles. As they are no longer stuck at the front of the classroom delivering lecture, they have more time to work one-on-one with students, identifying gaps in their knowledge and areas of need (Fautch, 2015).

Other educators advise caution and argue against going all-in on an instructional practice that does not have enough research to back up its effectiveness (Jenkins, 2015). The current research done on the flipped classroom is not applicable to all grade levels and content areas. A vast majority of the research applies to the subject areas of math, science, and technology, with very few studies being conducted within the social sciences. There has been minimal research done on core Social Studies content areas, such as history and government, which makes one skeptical if the flipped classroom has any place outside of STEM subject areas. Furthermore, most empirical studies conducted on the flipped classroom have been done at the post-secondary level. Research regarding the implementation and effectiveness of the flipped classroom at the primary and secondary level is lacking. Finally, while there is comprehensive data on student perceptions of the flipped classroom, there are very few studies that examine teacher perceptions of this style of instruction (Murphree, 2014; Unal & Unal, 2017).

Purpose and Guiding Questions

The purpose of this literature review is to examine the effectiveness of the flipped classroom on student achievement and engagement, as well as report on student and teacher

perceptions of this instructional strategy. The author would like to note that there is limited empirical research done on the flipped classroom at the secondary level for a Social Studies course. In order to offer a comprehensive literature review, studies of other subject areas and grade levels, including those at the post-secondary level, will be examined. The research questions that will be addressed in the literature review are as follows: What effect does the flipped classroom have on student achievement? What effect does the flipped classroom have on student engagement? What are student attitudes towards and perceptions of the flipped classroom? What are teacher attitudes towards and perceptions of the flipped classroom?

CHAPTER II: LITERATURE REVIEW

To locate the literature for this thesis, searches of Academic Search Premier, ERIC (EBSCOhost), Google Scholar, JSTOR, ProQuest Education Journals and SAGE Journals Online were conducted for publications from 1997 to 2018. Publications issued before 1997 were only used in the introduction chapter to establish a history of the flipped classroom. The literature was narrowed by only reviewing published empirical studies and peer reviewed journals that addressed the guiding questions. The key words that were used in these searches were "flipped classroom and student achievement," "flipped classroom and student engagement," "perceptions of the flipped classroom," "flipped classroom K-12," and "flipped classroom social studies." This chapter begins with a summary of the literature surrounding the flipped classroom and student achievement outcomes. Subsequent sections of this chapter will address the remaining research questions: student engagement levels and student and teacher perceptions of this instructional model.

Flipped Classroom and Student Achievement

When determining the effectiveness of the flipped classroom it is imperative to determine the effect that this instructional practice has on student achievement. Achievement will be determined by student scores on a variety of formative and summative assessments, given both during and after the implementation of this new instructional practice. As previously stated, achievement will be measured and compared at primary, secondary, and post-secondary levels, across a variety of subject areas. The implementation of the flipped classroom varies from instructor to instructor, with different methodologies used in unique settings. The methods used by different instructors will be discussed, along with the results and conclusions of the research.

Enhanced Student Achievement

The literature surrounding this research question is scattered but does not seem to identify adverse effects of the flipped classroom on student achievement. In other words, the literature indicates that the implementation of the flipped classroom does not hinder student achievement. Some empirical studies have found positive effects, noting that student achievement is greater in the flipped model, compared against the traditional course delivery model.

Burgoyne and Eaton (2018) tested the merits of this instructional practice on a large social science undergraduate course in Ontario, Canada. The instructors implemented the flipped classroom in one section of the course, while maintaining a traditional style of instruction in the other course section. In the flipped section, students watched a screencast of the same lecture given to the traditional classroom group and had access to this video one week before class was scheduled to meet. Class time was spent engaging in large group discussions that promoted critical thinking, in response to the previously viewed information. The traditional classroom only did these activities outside of class as work to be completed before the next class session. Students in both sections took an online quiz at the end of the learning segment, with students in the flipped section outperforming students in the traditional section (Burgoyne & Eaton, 2018). Although there was a statistically significant difference between groups it is important to take note the short nature of this study. Results of multiple classroom assessments over an extended period of time are needed for true analysis of achievement differences between groups.

Similar results were found in a different undergraduate social science course, with results indicating that students exposed to a flipped classroom outperformed students

assigned to a traditional classroom on a variety of course assessments (Lewis & Harrison, 2012). Both sections took the same assessments during this study, including two in-class quizzes, three cumulative unit tests, and one cumulative final exam. Students in the flipped section, exposed to prerecorded lectures and active learning exercises during class, outperformed students in the traditional section at a statistically significant level on all but two assessments. Students in the flipped section had higher mean scores on all assessments, but exams one and three failed to yield statistical significance ($p > .30$; $p > .26$). With these results Lewis and Harrison (2012) conclude that the online delivery of material combined with active learning and discussions done in class leads to better achievement outcomes for students than students exposed to only a traditional style of instruction.

These learning gains were seen in an analysis of pre-service teachers' implementation of the flipped classroom in sixteen different class settings. Unal and Unal (2017) examined sixteen public school teachers of varying grade levels and subject areas enrolled in a graduate teaching program. Subject areas included Mathematics, Science, Social Studies, and English/Literature ranging from grades four to ten, with two to four teachers at each grade level. Teachers participating in this study randomly selected two of their classes to serve as an experimental group and a control group. Those in the experimental group watched pre-recorded video lectures before class, while those in the control group were exposed to a traditional lesson that did not include an online component (Unal & Unal, 2017).

To measure student achievement, a pretest and posttest were given to students at the beginning and end of the five-day learning segment. Results indicated that a majority of students in the experimental group performed better on the posttest than students in the control group (Unal & Unal, 2017). Out of the sixteen teachers participating in the study, ten

showed higher learning gains from the pretest to the posttest from students in the flipped classroom, than students assigned to the traditional classroom. Five teachers saw no significant differences between groups, and one teacher found that students in the traditional group outperformed students in the flipped classroom (Unal & Unal, 2017). This study shows moderate evidence that that the flipped classroom may have a positive effect of student achievement across a variety of grade levels and subject areas.

Few other empirical studies demonstrate substantial learning gains as a result of the implementation of the flipped classroom. Schultz, Duffield, Rasmussen, and Wageman (2014) compared one flipped section of Advanced Placement Chemistry against a traditionally taught section of this course and found that student in the flipped section performed significantly better on classroom assessments than students taught in the traditional classroom format. Over a nine-week study, students in the flipped section outperformed control group students on seven chapter-tests and one cumulative exam (Schultz et al., 2014). The methodology of this study, including but not limited to a video accountability form filled out by students after watching the online lectures, could have contributed to the increased achievement outcomes associated with the flipped classroom.

Students in the flipped Chemistry section viewed a video lecture paired with guided notes provided by the instructor and concluded by filling out a video accountability reflection, which was submitted to their instructor online. The reflection included a section where students communicated any gaps in their knowledge to their instructor by noting which topics they needed clarification on during their face-to-face class session (Schultz et al., 2014). This information could then shape the way the instructor designed their next class session, by focusing class discussions and activities primarily on information that the most

students needed assistance on. This differs from the traditional format of instruction, in which teachers deliver identical content to all students at the same pace, only discovering areas of need after the information has been delivered to students and measured via classroom assessments.

One must also consider the effects of the flipped classroom on students with varying academic abilities. Bhagat, Chang, and Chang (2016) measured student achievement in a flipped high school Trigonometry course, but also sought to measure any differences in learning gains between high- and low-ability students. Instructors categorized students into ability levels by analyzing past summative assessments of students in their previous math classes. The instructors then randomly chose one class section to flip, while teaching the other section in a traditional format. To measure achievement, a pre-and posttest were given to all students participating in the study. At the conclusion of the six-week study, the researchers found that the students in the flipped Trigonometry class had higher posttest scores than students in the traditional classroom (Bhagat et al., 2016). Even more noteworthy perhaps, is the learning gains seen by students in the "low-ability" group. Students identified as being low-ability performed significantly better on the posttest when receiving flipped instruction, compared to low-ability students receiving traditional instruction (Bhagat et al., 2016).

Bhagat et al. (2016) note that students in the flipped section had a greater opportunity to work one-on-one with the instructors on areas of confusion than students in the traditional section. Since students were already exposed to the lesson via online screencasts, the instructor was free to use class time to focus on areas of individual need with students. The researchers conclude that that individual attention and remediation given to low-ability

students, combined with student autonomy to view, pause, and rewind the online video lectures at the students' own pace, contributed to the achievement differences in low-ability students between the experimental and control group (Bhagat et al., 2016). The researchers identify the short nature of the study as a major limitation, while also noting the promising effects of a flipped style of instruction on students who benefit from individual attention and remediation during class time.

Moderate/No Effect on Student Achievement

The flipped classroom shows some positive effects on student achievement, as noted in the literature reviewed above. However, this research is limited. In the previously reviewed studies, only one demonstrated a statistically significant difference between flipped and traditional achievement scores on multiple assessments (Schultz et al., 2014). The other reviewed studies show that students exposed to a flipped classroom performed better on only one, or a few, measures, compared to students assigned to a traditional classroom (Bhagat et al., 2016; Burgoyne & Eaton, 2018, Lewis & Harrison, 2012; Unal & Unal, 2017).

There are few studies that show that a flipped style of instruction definitively causes an increase in student achievement, as measured on various classroom assessments. The literature reviewed shows mixed results, with some studies showing minute differences in assessments scores between students receiving flipped and traditional instruction. However, these differences do not reach a level of statistical significance needed to establish a causal relationship between flipped methodology and increased student achievement. The majority of the literature reviewed shows a moderate positive effect, or no effect at all, of a flipped style of instruction on student achievement.

In a blended undergraduate English Literacy course, Tseng and Walsh (2016) concluded that students assigned to a blended learning environment received higher overall grades than those enrolled in the traditionally delivered English Literacy course. Although not a fully flipped classroom, a blended learning environment offers some of the same technological advantages for students, including access to videos, web links, and other online resources that students can access at their own time and pace, independent of the face-to-face class session. Tseng and Walsh (2016) found that students assigned to the blended course received better course grades than students in the traditional course, but these results failed to reach statistical significance. Without statistical significance, it is difficult to conclude if the implementation of blended learning is the sole factor contributing to the grade increases.

Similar results were found by Roehling et al. (2017) in an undergraduate Introductory Psychology course. In an attempt to determine the effects of the flipped classroom on student achievement scores, the researchers compared exam scores of two flipped Psychology classes against two traditionally taught Psychology classes. The researchers concluded that a flipped classroom has a "modest and nuanced effect on learning in an Introductory Psychology class" (Roehling et al., 2017), while still noting that this does not serve as definitive evidence that the flipped classroom has a positive effect on student achievement.

The literature continues to indicate that the flipped classroom shows modest promise in regard to student achievement, but not enough to promote this as an effective instructional strategy aimed to improve student test scores (Aidinopoulou & Sampson, 2017; Chen, 2016; Leo & Puzio, 2016). Aidinopoulou and Sampson (2017) studied the effects of flipped methodology on student achievement in a primary World History class in Greece, finding a minimal impact of the flipped classroom, but not at a level of statistical significance.

Students assigned to a flipped classroom did not perform significantly better on course assessments than students assigned to a traditional classroom, leading the authors to conclude that the implementation of the flipped classroom did not improve student's rote memorization capacity (Aidinopoulou & Sampson, 2017).

Chen (2016) found the same results in a ninth grade Health Education class in Northern California. Students assigned to a flipped health classroom performed better on two out of three chapter-tests, compared to students in a traditional health class, but there was no significant difference in test scores on any of the three chapter-exams. Leo and Puzio (2016) found that students in a flipped Biology course performed better on course assessments than students assigned to a traditional Biology course, but also had to note that the effect sizes were not large enough to establish statistical significance.

Aidinopoulou and Sampson (2017) and Chen (2016) note their skepticism of the flipped classroom, in relation to increased student achievement, but Leo and Puzio (2016) note that the small sample size of their study is consistent with their results, arguing in favor of the flipped classroom's role in improved assessment scores. All of the studies reviewed above demonstrate a minimal positive impact of the flipped classroom, while at the same time noting the lack of statistical evidence needed to establish a causal relationship between flipped methodology and increased student achievement. Other empirical studies do not even go this far and have shown no relationship between flipped instruction and student achievement.

Sletten (2017) sought to examine if the self-directed learning strategies associated with the flipped classroom had any effect on final course grades for undergraduate Biology students. Self-directed learning was measured via a student perception questionnaire

modified from Wolters et al. (2005) Motivated Strategies for Learning Questionnaire. Items in the questionnaire included, but were not limited to, study strategies, self-regulation of metacognition, effort, self-talk, and help-seeking behaviors (Sletten, 2017). These strategies are an integral component of the flipped classroom, as students are responsible for directing their own learning outside of class, often in response to pre-recorded lectures or other forms of content dissemination decided on by the instructor. Sletten (2017) concluded that self-directed learning strategies had no impact on final course grades, leading the researchers to believe that while student autonomy associated with self-directed learning may lead to a positive student experience of their Biology course, it did not necessarily lead to better overall course grades.

Other evidence indicates that flipped instruction has little, if any, relation to student achievement, as measured via student assessment scores and course grades (Clark, 2015; Jensen, 2011; Snyder & Besozzi, 2016; Whitman Cobb, 2016). When comparing test scores between students receiving traditional instruction and students receiving flipped instruction, implemented via online screencasts, researchers found no significant difference between groups (Snyder & Besozzi, 2016). Similar results noted by Clark (2015) indicate that the implementation of flipped instruction in a high school Algebra class does not affect student achievement. Over a seven-week period, students were assigned to one of two groups- one receiving traditional math instruction and one receiving flipped instruction. Students in the flipped section completed a variety of preparation tasks outside of class, while spending the majority of class time engaged in active learning exercises. Researchers found no significant difference in unit test scores between groups, while also noting that the short nature of the study and small sample size could have contributed to these results (Clark, 2015).

When comparing academic achievement of students assigned to a traditional American Government class, a flipped class, and a fully online class Whitman Cobb (2016) concluded that there are no significant differences in achievement between groups. Students receiving traditional instruction received the highest midterm grades, while students receiving flipped instruction had higher overall course grades at the time of the exam. Students in the flipped section actually had lower scores on the final exam than students receiving traditional instruction. These mixed results indicate that one instructional strategy did not prevail when comparing data on student achievement in this course (Whitman Cobb, 2016).

These findings were also found by Jensen (2011) in an Introductory Psychology course. There was no significant difference in unit quiz scores between students receiving flipped instruction with active learning and students receiving only traditional instruction, even after assessing student perceptions of the course. Students who preferred online screencasts, compared to in-class lectures, did not perform better on unit quizzes after watching the online lecture (Jensen, 2011). This demonstrates that student performance on classroom quizzes is independent of learning style and preference and is not affected by flipped or traditional course delivery.

The literature reviewed above highlights the promise of flipped instruction on student academic achievement, but overall, fails to indicate a strong relationship between the two variables. The flipped classroom can have positive effects on student achievement, as noted in the studies reviewed above, but these results are limited in quantity. A majority of the literature indicates a minimal impact of the flipped classroom on academic achievement, with many studies failing to establish a causal relationship. Some studies even go as far to

conclude that there is no relationship at all between flipped instruction and academic achievement. This is not to say that the flipped classroom has negative effects on student achievement. The literature does not indicate that the flipped classroom has adverse effects on academic achievement, leading to lower achievement scores after the implementation of this teaching style. This indicates that this instructional style can be beneficial for students in ways other than academic achievement.

Flipped Classroom and Student Engagement

Although the literature does not promote the flipped classroom as a foolproof way to increase student achievement, other ways in which this instructional practice impacts students must be examined. The relationship between the flipped classroom and student engagement will be the next focus of this literature review. Student engagement is an integral component of a positive classroom atmosphere, as it can lead to better learning outcomes and increased student motivation for achieving those outcomes. Student engagement can be measured in countless ways, including but not limited to, attention, focus, interest, passion, classroom interaction and collaboration, participation, and overall motivation for learning. Measuring student engagement can be difficult, as operational definitions of the term vary from instructor to instructor. In this literature review, engagement will be measured and analyzed in a variety of ways. These include observational data and recorded evidence, both by instructors and the researchers of empirical studies, and self-report data from the instructors and students participating in these studies. Self-report data can come in the form of anecdotal evidence, recorded by the researchers, but most often comes from qualitative survey data, given as a questionnaire to students before, during, and at the conclusion of the experiment.

Decreased/No Effect on Student Engagement

Like student achievement, the literature surrounding the flipped classroom and student engagement is mixed but is still mainly positive. The flipped classroom, implemented across a variety of grade levels and subject areas, does not seem to hinder student engagement. Very few studies will conclude that there is a substantial decline in student engagement levels, as a result of being taught in a flipped setting. While the majority of the literature concludes that the implementation of this instructional strategy can lead to increased student engagement, it is important to take note of the few studies that conclude that there is a weak relationship between the two variables.

Jensen (2011) found that undergraduate Psychology students reported greater engagement, measured by attention and participation, when taught in a traditional lecture style format, as opposed to a flipped setting. In this study students received traditional lecture style instruction and flipped instruction on a rotating schedule for a period of four weeks. Those in the flipped classroom viewed online video lectures in preparation for an active learning class session. Over two-thirds of student participants reported greater engagement in the in-class lectures, due to the interactive nature of the content delivery. Many students found the online videos troubling, as it proved difficult to maintain attention with the lack of student-to-student and student-to-teacher interactions that are present in the traditional classroom (Jensen, 2011). Questions, communications, and collaborations were lacking in these online video lectures, contributing to lower attention levels and engagement with the material.

Other studies indicate that there are few differences in levels of student engagement between flipped and traditional classrooms. Burgoyne and Eaton (2018) did not find any

significant differences in student engagement levels when comparing two large undergraduate social science courses. Students reported similar levels of interest in the content in both the traditional and flipped classrooms and did not differ in their opinions of course enjoyment at a significant level. These same findings were found when comparing a flipped unit with a traditional unit in three different mathematics classrooms (Hodgson, Cunningham, McGee, Kinne, & Murphy, 2017). There were no significant differences in student engagement levels in any of the three classrooms, leading the researchers to believe that there is no direct relationship between flipped instruction and student engagement.

In contrast to many studies that rely on student and teacher self-report data to measure student engagement, Hodgson et al., (2017) relied on observational data collected from researchers, independent of the classroom. Two observers were responsible for measuring student engagement for a total of twelve lessons, using a behavioral engagement observational instrument (BEIO). Observers recorded both "on-task" and "off-task" behaviors, as defined in the behavioral engagement observational instrument, of six randomly selected students for each observed lesson. Analysis of these results indicated that there were no significant differences when examining "on-task" and "off-task" behavioral levels in either the flipped or traditional lessons. This evidence indicates that student engagement does not change as a result of the implementation of a flipped lesson (Hodgson et al., 2017).

Enhanced Student Engagement

Although the studies reviewed above indicate a poor relationship between flipped instruction and student engagement, the majority of the literature demonstrates the positive impact that this instructional strategy has on student engagement levels and overall

motivation to succeed. In their study of a high school Advanced Placement Chemistry class, Schultz et al. (2014) found that students reported more focus and attention with online videos than when present in a traditional lecture. This could be due to the individual autonomy to go through the online screencasts at the student's own pace, focusing more on content that needs further explanation and understanding.

Lewis and Harrison (2012) argue that students are more engaged in a flipped setting, because class time is spent on active learning and collaborative work, rather than passive notetaking along with a lecture. They conclude that the hands-on activities completed in the face-to-face class session of a flipped classroom will maintain student interest and attention better than a traditional lecture, leading to higher attendance rates. They even go further to promote the use of online lectures as preparatory work, as it allows students to be better prepared to participate in class activities, due to a pre-exposure of the material (Lewis & Harrison, 2012).

Motivation. Motivation is an integral component of student engagement, as it drives students to achieve success. Levels of motivation differ from student to student and can at times relate to confidence and ability level. In a middle school Hawaiian History course, mid-to-high achieving students were found to report more motivation for learning in a flipped setting, than low-achieving students in the same setting (Winter, 2018). Students of higher ability were better able to regulate their own learning, which is an essential component of the flipped classroom, leading to an enhanced motivation to learn. This is not to say that students of low ability will not be motivated or engaged in a flipped setting. The results simply highlight the need of the instructor to identify students requiring remedial assistance and work one-on-one with these students during the face-to-face class session to promote

participation and understanding (Winter, 2018). This understanding can then lead to an increased confidence in one's own abilities, and thus an enhanced motivation to learn.

In a large-scale analysis of K-12 teachers, Unal and Unal (2017) reported that students are more motivated to learn in a flipped classroom, rather than in a traditional classroom. Sixteen teachers enrolled in a graduate teaching program flipped one of their courses for five days, concluding with a 10-point Likert Scale survey distributed to students. Using a rating scale ranging from "5-Strongly Agree" to "1-Strongly Disagree," teachers collected data on student perceptions of their experience with the flipped classroom. Students strongly agreed with the statement "I am more motivated to learn in a flipped classroom" ($M = 4.73$, $SD = 1.13$) (Unal & Unal, 2017). A major limitation of this study is the fact that the survey was only given to students in the experimental group. For a true analysis of the differences in student motivation levels, a comparison of student experiences in both the experimental and control group is needed. However, the large sample size of the study ($p = 623$) gives further evidence to the results, as the study was conducted in multiple school districts, across a variety of grade levels and content areas (Unal & Unal, 2017).

Communication, collaboration, and active learning. When comparing two high school health education classes, Chen (2016) found that students in a flipped classroom had more "discussion and interaction" during class time than students in a traditional health class. In a three-week long study, students in both classes completed three health units in either a flipped or traditional format. Students in the flipped section watched pre-recorded lectures before class and spent class time working on interactive activities, aimed to give a real-world application to the online lecture. Students in the traditional section watched these same videos during class, supplemented with teacher lecture, and completed the application

activities as homework. The author noted that students in the flipped section took a few days to adapt to the new instructional style, but in the end, showed more collaboration and communication during class time than students in the traditional section (Chen, 2016). As collaboration and communication are important components of student engagement, it can be concluded that the active learning opportunities that accompany many flipped classrooms promote enhanced student engagement levels.

Enhanced levels of active engagement and collaboration were also found when the flipped classroom was implemented in a high school Algebra course (Clark, 2015). Researchers collected qualitative evidence in the form of questionnaires and student focus group interviews to examine engagement level differences between a flipped and traditional Algebra class. For seven weeks, students in the flipped Algebra class completed a variety of preparatory work before class, including online video lectures, podcasts, and reading assignments, and spent class time engaged in active learning exercises aimed to promote a deeper understanding of the content. At the conclusion of the grading period, researchers conducted twelve student interviews and randomly selected ten students to participate in a focus group session to analyze levels of engagement and student perceptions of the flipped classroom. Major themes arose from the interviews and focus group sessions, indicating that students' experienced increased active engagement, collaboration, and communication in the flipped Algebra class (Clark, 2015).

Students noted that their levels of participation increased as a result of the flipped classroom (Clark, 2015). They felt actively engaged because they were able to choose activities based on their learning style and current understanding of the content during the active learning session, a level of individual autonomy not offered in the traditional

classroom setting. This method of instruction gives students much more agency over their own learning, as it allows them to choose and participate in application activities at the appropriate level of rigor. Students in this Algebra class self-directed their learning by completing tasks at their own pace, only moving on to the next learning activity when they have mastered the content of the previously assigned task. Qualitative evidence also indicated that the flipped classroom allowed more collaboration and communication between students. Students reported feeling more engaged, because they were able to discuss the content with their peers and work through the material as a team. Students felt that this teamwork promoted a deeper level of understanding of Algebra concepts, because they were able to discuss areas of confusion and learn from their peers every class period (Clark, 2015).

Attention, relevance, confidence, and satisfaction. Two empirical studies sought to examine engagement and motivation in a flipped and blended learning environment by distributing a questionnaire to students aimed to measure all four components of the ARCS model of motivation, originally developed by John Keller (Bhagat et al., 2016; Tseng & Walsh, 2016). The ARCS model of student motivation includes the following components: attention, relevance, confidence, and satisfaction (Keller, 2010). Researchers used a 34-item Course Interest Survey, developed by Keller and Subhiyah (1993) to measure student motivation of the four ARCS components in these unique learning environments.

In a blended English Literacy course, Tseng and Walsh (2016) found that students reported greater levels of confidence and satisfaction than students in a traditional English Literacy course. As this was a blended learning environment, and not a fully flipped course, students were given the opportunity to complete the online component on the course on their own time with limited time constraints from the professor. This independence and freedom to

work through the material at the students' own pace contributed to these higher levels of confidence and satisfaction, as students had more control over their own learning (Tseng & Walsh, 2016). The authors note that 'attention' levels did not significantly differ between students in the blended and traditional course, leading the researchers to conclude that only some components of the ARCS model of motivation are positively influenced by a blended learning environment (Tseng & Walsh, 2016).

Using the same Course Interest Survey, developed by Keller and Subhiyah (1993), researchers found significant differences in all four components of the ARCS model, when comparing a flipped and traditional high school Trigonometry course (Bhagat et al., 2016). Students enrolled in a flipped Trigonometry course reported higher levels of attention, relevance, confidence, and satisfaction than students enrolled in the traditional version of the course. It seems that the individual autonomy associated with going through an online lecture at one's own pace contributes to the higher levels of attention in a flipped class. As previously stated by Tseng and Walsh (2016), this individual autonomy and control over learning led to higher rates of confidence and overall satisfaction in the course, leading to a greater motivation to learn (Bhagat et al., 2016). The authors did not explain what could have led to higher reports of 'relevance', but one could conclude that the real-life application activities done in the face-to-face session of the flipped classroom contributed to the increased measures of this category.

Conclusion. The literature surrounding the flipped classroom and student engagement is mainly positive, with a few empirical studies promoting the use of the traditional classroom or highlighting the weak relationship between the two variables. Apart from this, the evidence indicates a positive relationship between a flipped style of instruction

and student engagement levels. Instructors looking to use this instructional approach need not be afraid that student engagement levels will drop as a result of this new instructional approach. Student and teacher evidence indicate that active participation, collaboration, and the individual agency given to students in a flipped classroom setting promote an increased motivation to learn. The literature serves as clear evidence that this instructional approach can enhance student engagement levels across grade levels in a variety of subject areas.

Perceptions of the Flipped Classroom

The flipped classroom is becoming commonplace in global education, as access to technology increases. Instructors across all grade levels and content areas have used this instructional approach in an attempt to rectify some of the problems inherent in a traditional classroom atmosphere. The literature indicates a weak relationship between flipped instruction and student achievement, while also demonstrating that measures of student engagement increase as a result of this teaching method. The last section of this literature review will focus on research questions three and four, student and teacher perceptions of the flipped classroom. Both quantitative and qualitative data will be used to describe the various opinions on this method of instruction, most often from self-report survey data and open-ended interview responses. Both student and teacher perceptions vary, ranging from specific criticisms of the flipped classroom, to a fervent endorsement of this teaching method. Students are quick to point out specific flaws with the flipped classroom, but the majority of the research indicates that students hold positive opinions of this teaching style. Instructor responses are across the board, with many noting the benefits of the flipped classroom for students, and many expressing doubts about the practicality and time-consuming nature of this methodology.

Student Perceptions of the Flipped Classroom

The literature review will first focus on student perceptions of the flipped classroom, highlighting specific criticisms of this type of instruction as well as the advantages that this type of instruction offers students. Most empirical studies indicate a generally positive student view of the flipped classroom, but some students promote and recommend the traditional style of instruction over flipped methodology.

Negative perceptions. Students taking an undergraduate American Government class in the spring of 2014 rated the traditional classroom as more enjoyable than the flipped classroom and also indicated that the quality of instruction was superior in the traditional American Government course (Whitman Cobb, 2016). Furthermore, students indicated a preference to take traditionally delivered courses in the future, as opposed to taking flipped courses (Whitman Cobb, 2016).

This preference for traditionally delivered instruction was also found when comparing course evaluations of several flipped and traditional College Algebra courses (Van Sickle, 2016). Students taught in a traditional format found the instructor to be more helpful in their learning than students taught in the flipped format, and also gave higher ratings in their enjoyment of the course. Students in the traditional class expressed more interest in course content and rated the overall format of the course better than students in the flipped sections. There are several explanations as to why student perceptions of the flipped classroom were generally negative, most of which centering upon the fact that students are not used to, and therefore, may be uncomfortable with this style of instruction.

Most of the students taking this American Government course had never experienced flipped learning before, which Van Sickle (2016) argues is a contributing factor to their

negative preferences. The unease that students felt with this instructional approach could be attributed to the relative "newness" of the format, rather than the course itself. Van Sickle (2016) explains that students who are not adequately prepared for class experience greater hardship in a flipped setting than a traditional setting. When students do not view the pre-recorded lectures or other preparatory material, they are not able to fully participate in the active learning exercises during class. Students may come to class feeling lost and unable to keep up, resulting in negative opinions of the course (Van Sickle, 2016). Chen (2016) also describes this finding, noting that a major issue of the flipped classroom is student acceptance of the format. As this style of instruction is foreign to some students, they may resist having to complete the work before class. The active learning exercises then, have little relevance for students, as they do not come to class with a base knowledge of the material.

A preference for traditional instruction was also found in an Introductory Psychology class, where students enrolled in the course received both traditional and flipped instruction on a rotating schedule (Jensen, 2011). Students received flipped instruction every other week, comprised of online video lectures and active learning class sessions. At the end of the study, students rated the traditional style of instruction as superior to flipped instruction in several key ways. Sixty percent (60%) of students reported that they took useful notes in the traditional in-class lectures, compared to only twelve percent (12%) of students during the online video lectures. The length and structure of the videos could have contributed to these results. The online video lectures, being 80 minutes in length, were too long for students to follow and maintain attention effectively. Students felt that the in-class lectures, although longer in length, captured their attention more, due to the interactive relationship between students and the instructor (Jensen, 2011). This information indicates that it is not enough to

simply move the lecture outside of class and expect positive student outcomes. Online lectures must require active engagement to maintain both student attention and retention.

Students also rated the traditional class as superior in regard to course enjoyment and perceptions of their own performance. Nearly two-thirds (63%) of students enjoyed the material when it was presented in a traditional format, whereas only ten percent (10%) of students gave the material an enjoyable rating when it was presented via video lecture. More students (49%) reported that the in-class lectures helped them score well on class quizzes, compared to 10% of students who viewed the video lectures. Seventy percent (70%) of students reported that they learned more during the course when learning in a traditional format. Finally, students selected a traditional style of instruction (68%) when asked which teaching method they prefer (Jensen, 2011).

The literature reviewed above indicates that, even in our era of technological independence, some students still prefer a traditionally delivered lecture, as opposed to an online one. As the flipped classroom is still a generally new approach to instruction, these results are not all that surprising. Students may be resistant to flipped methodology simply because they are not used to the format, or they may prefer the increased interactions between students and instructors provided in a traditional lecture. However, the studies that indicate a complete endorsement of traditional instruction over flipped instruction are few in number. The following empirical studies will indicate that many students hold mixed feelings about this method of instruction, detailing specific criticisms of the flipped classroom, while still highlighting the potential benefits and promise of learning in this format.

Benefits and drawbacks of the flipped classroom. Roehling et al. (2017) found that students in an Introductory Psychology course held both positive and negative opinions

of their experience in a flipped classroom setting. Using a Likert-scale questionnaire and a University approved course evaluation, researchers gathered information on student perceptions of traditional and flipped instructional practices. Roughly half (56.2%) of students participating in the study reported that they prefer a traditional course to a flipped course, also noting that they learned the material better when taught in a traditional lecture setting. However, over half (57%) of students rated the flipped classroom as more interesting than a traditional lecture, and most students (93%) recommended that a combination of flipped and traditional instruction would be better for students than a standard traditional approach (Roehling et al., 2017).

Even though a majority of students preferred a traditional psychology lecture to a flipped course, they still identified various benefits to flipped instruction. In course evaluations, students reported that they felt more challenged in the flipped classroom and identified that the interactive relationship between students and faculty in the flipped setting supported their learning. When comparing student opinions of the flipped classroom based on summative course grades and grade point averages, the researchers found that students with lower GPA's and lower test performance scores preferred flipped instruction to traditional instruction (Roehling et al., 2017). In a flipped classroom, students are free to learn the material at their own pace and are then given the opportunity to work with and apply the material in class, often with the individual assistance of peers and the instructor. This could benefit lower achieving students, who often benefit from the extra assistance offered to them during the active learning class sessions.

Other empirical studies of student perceptions of the flipped classroom show similar mixed results. After engaging in flipped learning for part of the semester, undergraduate

sociology students identified several benefits and drawbacks to this style of instruction (Forsey, Low, & Glance, 2013). Students felt more organized in the flipped setting, as long classroom lectures were broken down into manageable chunks that students could go through at their own pace. Students also appreciated the variety of resources offered in a flipped classroom, as opposed to the repetitious note-taking that primarily takes place in a traditional lecture. On the other hand, students expressed concern with the flipped classrooms' reliance on technology. Some felt that they could easily fall behind if they were not technologically advanced, putting them at a disadvantage to other students who were well-versed with online learning (Forsey et al., 2013). Sletten (2017) reported that students in an Introductory Biology class appreciated and enjoyed the active learning component of the flipped classroom but did not find value in watching online video lectures in preparation for class. As video lectures and screencasts are an integral component of the modern flipped classroom, it is important for the instructor to structure the information in a way that will be seen as valuable and relevant to the students.

As any instructional practice has advantages and disadvantages, some students have expressed a desire for instructors to blend their courses to include the positive aspects of both traditional and flipped instruction. Jenkins (2015) reported that students in an Introductory American Government class had positive perceptions of a partially flipped classroom, but still maintained a preference for a mix of traditional and flipped instruction. In this partially flipped American Government course, students were responsible for completing textbook readings and other course assignments outside of class, in preparation for one traditional lecture and one active learning session a week. During the active learning session, students were responsible for leading large group discussions and were directed to work through

activities as a group to enhance their learning (Jenkins, 2015). Results of a Likert-scale survey given to students at the end of the semester indicated that while students found value in the student-led active learning sessions, they did not want this type of classwork to completely replace traditional lecture. An overwhelming majority (94.4%) of students indicated that they only found value in the active learning session if it was held once a week. They did not feel as though additional student-led discussions and exercises involving group work would benefit their learning (Jenkins, 2015).

Although students in this American Government course expressed skepticism towards group work and student-led lectures, a majority of students (86.1%) reported that they would endorse this course to other students in the future (Jenkins, 2015). It seems that the students responded well to a partially flipped classroom, with active learning enhanced by an instructor-led lecture of the course content. This recommendation was also reached by several advanced placement chemistry students, who noted that instructors should use a mix of traditional and flipped instruction, depending on the difficulty of the information being presented (Schultz et al., 2014). Students felt that difficult concepts were more suitable to be presented in a traditional lecture format, so they were not forced to wrestle with challenging subject matter on their own outside of school. Even though students in this chemistry course had overall positive opinions of the flipped classroom, they still supported a blended approach to classroom design, that included components of traditional instruction (Schultz et. al, 2014).

Positive perceptions. Student views of the flipped classroom vary, with some students endorsing the traditional style of instruction and some detailing specific drawbacks to the flipped classroom. As seen above though, there is minimal research indicating that

students hold negative views of this style of instruction. Many students promote a mix of traditional and flipped instruction to best suit their learning needs. The majority of the literature indicates that students find value in several aspects of the flipped classroom. One cannot argue that this style of instruction is not a one-size-fits all approach to education. Students across all grade levels and content areas have noted specific benefits to flipped learning, which will be detailed in the remaining sections.

Prefer flipped classroom over traditional lecture. Results of several empirical studies demonstrate that many students prefer being taught in a flipped format, rather than a traditional lecture format. Students in a Principles of Microeconomics course reported that they prefer a flipped class over a traditional economics course (Lage et al., 2000). The majority of students in a collegiate United States history course also shared these opinions, with 88.1% of students rating the flipped history course as superior to a history course taught in a traditional lecture format (Murphree, 2014). Students enrolled in the flipped United States history class read assigned chapters in the course textbook in preparation for class, and then spent class time either participating in large group discussions or working individually on in-class writing assignments. This differs from a majority of traditional history courses, which typically place a large emphasis on content delivery and note-taking.

These results are not just found at the collegiate level. Leo and Puzio (2016) found that students preferred a flipped classroom over a traditional classroom after they had experienced this type of instruction in a high school biology course. Students in this study were assigned to one of four flipped or traditional classes. Students in the flipped sections watched online video lectures as homework and spent class time engaged in interactive activities. Students in the traditional classroom only had time to complete some of the

interactive activities, as a large majority of class time was spent engaged in lecture. Results of student surveys indicated that students in the traditional classroom felt that they were missing out on valuable learning opportunities, specifically noting that students in the flipped classroom "get to do more labs than we do" (Leo & Puzio, 2016, p. 779).

Would take again or recommend to others. Students enrolled in two different blended courses had positive opinions regarding their experiences with this type of instruction. Students in a blended English literacy course reported that they would like to take more blended courses in the future and would recommend courses taught in this format to others (Tseng & Walsh, 2016). Students enrolled in a collegiate history course also shared this opinion. In this history course, students read and analyzed a primary source online before meeting in the face-to-face class session. They then spent class time engaged in large group discussions in response to the primary sources (Westermann, 2014). Students had positive perceptions of this classroom format, with a majority of students recommending the use of primary sources as preparatory homework in future courses (Westermann, 2014).

Changes in class time. After experiencing the flipped classroom many students have identified positive changes in the structure and format of their face-to-face class sessions. Students enrolled in a flipped high school algebra class appreciated the variety of activities offered to them in this class (Clark, 2015). In focus group sessions, students identified major problems with a traditional algebra class, including the fact that lectures are often a one-size fits all approach to instruction. After being taught in a flipped format, students reported that they enjoyed how each class session had a variety of different activities to participate in. These included group work, independent practice of the material, and opportunities to engage in relevant applications of the content. Homework did not always take the form of online

lectures either. The instructor also assigned various other preparatory materials, such as podcasts or readings (Clark, 2015). Students were able to choose activities to complete in class based on their understanding of the previewed content. This is a great benefit of the flipped classroom, as it gives students agency and allows them to take ownership of their own learning. When students feel that classroom exercises have value, they are more likely to actively participate in their own learning.

Students also reported that they benefitted from active, rather than passive learning after taking a flipped algebra course (Clark, 2015). Without real-world applications, it is easy for students to feel as though math subjects are not relevant to their own lives. By spending class time engaged in real-life examples, students were more able to find meaning in the content. Students reported that the flipped classroom fostered student participation more than a traditional algebra class would (Clark, 2015). The opinion that active learning promotes student participation is not only shared by math students. Snyder et al. (2014) reported that students found value in active learning in a flipped high school social studies class. Students enjoyed the fact that lectures were moved outside of the classroom, effectively freeing up the instructor's time to focus on student-centered activities. When polling all students enrolled in the course ($N = 197$) over a three-year period, Snyder et al. (2014) found that over half of students (58%) found value in replacing in-class lectures with screencasts, so that class time could be used for active learning.

In flipped classrooms, student tend to receive more individual help from their instructor than they would in a traditional classroom where the teacher is predominantly lecturing the students. Focus group interviews of algebra students revealed that students appreciated the increase in student-teacher communications offered in a flipped classroom, as

the teacher was more readily available to walk around the room and assist groups or individual students (Clark, 2015). This change in class time puts more focus on individual student needs and less on the instructor's dissemination of content. Snyder et al. (2014) supported these findings, with slightly over half of students participating in the study describing the focus on student-centered learning as beneficial. Overall, these changes in class time and structure are generally well-received by students. As technology offers endless opportunities to learn, so must the face-to-face classroom experience.

Opportunities for group work. Students who hold positive opinions of the flipped classroom have identified group work as one of the main benefits of this instructional practice. Students enrolled in an undergraduate Principles of Economics course gave positive ratings to the following statements, "I enjoyed working in groups" and "I learned a lot working in groups in class" (Lage et al., 2000). Each statement received a rating of 3.7 on a scale ranging from 1-5. Student ratings increased to an average of 4.1 out of 5 when asked to rate the benefit of working on review questions and worksheets in small groups (Lage et al., 2000). Schultz et al. (2014) report that advanced placement chemistry students also value the added group work that seems to accompany the flipped classroom. In course surveys students indicated that they enjoyed the interactive opportunities they had in class to work through the material with classmates. Group work is not an integral component of the flipped classroom, but the benefits of collaboration and inquiry-driven peer activities cannot be ignored. Instructors who are looking to flip their classrooms should take note of the literature, which indicates a student's desire to work with peers and solve problems collaboratively.

Increased learning. Responses by students in several empirical studies indicate that they feel there are increased opportunities to learn the course material in a flipped classroom.

Students in a ninth-grade algebra class had positive perceptions regarding the quality of instruction after receiving flipped instruction for seven weeks (Clark, 2015). Focus group interviews conducted with students revealed that they identified technology and individual attention from their instructor as the main factors that contributed to their learning in the flipped classroom. The one-on-one assistance provided by the instructor during the face-to-face class session allowed students to receive individual help based on their current levels of understanding, an opportunity that is not always guaranteed to students during a class lecture. Students felt that the quality of instruction was not as effective to student learning when the majority of class time was spent engaged in lecture and note-taking (Clark, 2015). Students in a Principles of Microeconomics course also agreed with these findings, reporting that they learned more about economics when taught in a flipped format, as compared to a traditional format (Lage et al., 2000). Likert-scale responses indicated that a majority of students cited increased learning of the course content in the flipped classroom, with many citing group work and collaborative activities as the mechanisms that contributed to their learning.

One distinct advantage of flipped instruction is that the students are provided an opportunity to actively engage in the content prior to meeting with their peers and the instructor in a formal class session. This opportunity to learn the material outside of class is beneficial, in that it provides context and vital background information students need to fully understand and participate in classroom activities. Westermann (2014) reported that students cited increased learning in a flipped undergraduate history course, when presented with primary source documents before meeting for a class session. In this classroom, students were introduced to a primary source posted to their classroom learning management system and were instructed to analyze the source and complete a discussion post online to fellow

students prior to their face-to-face class session. Students also had to submit a written response to a question posed by the instructor, which was aimed to promote critical thinking and deep analysis of the primary source document (Westermann, 2014).

Likert scale responses indicated that students held favorable views of this method of instruction in regard to their leaning of the course material. The Likert-scale ranged from one to five, where one equaled *Strongly Disagree* and five equaled *Strongly Agree.* Students gave a 4.81 rating to the following statement: "The analysis of primary sources in the discussion board helped me to understand the classroom lecture." Students gave a 4.71 rating to the statement, "The use of primary sources prior to class provide better context for the lesson" (Westermann, 2014).

Students came to similar conclusions in a flipped undergraduate United States history course, with a majority of students reporting increased learning as a result of flipped instruction (Murphree, 2014). Students did not watch online lectures, but instead were introduced to the material before class by reading assigned sections in the course textbook. Class time was spent engaged in critical analysis of the assigned text, both in small and large group discussions, and was also spent on in-class writing assignments A large majority of students (96.4%) felt that the in-class essay assignments were beneficial to their learning and 85.1% of students reported that they learned more in a flipped history class, compared to a traditionally taught history class. Students had especially favorable responses to how the course improved their writing skills (Murphree, 2014).

These results are not all that surprising but highlight the benefit of the flipped classrooms' approach of introducing students to course content before a scheduled class session. This is especially relevant in history courses, as the sheer number of names, dates,

and events can become overwhelming to students when presented orally in a class lecture. Allowing students the opportunity to grapple with the content and develop a base understanding before class gives them a better chance of critically thinking and achieving a deeper level of understanding during the face-to-face class session.

Helpfulness of videos. A number of student responses reveal that the online video lectures that often accompany the flipped classroom are seen as largely beneficial to student learning. Gaughan (2014) found that a majority of students registered in an undergraduate world history course agreed that video lectures helped them learn the course content. In a course survey, roughly 75% of students reported that they found the online video lectures useful, and 72% of students believed that the videos adequately prepared them for class activities and discussion most or all of the time (Gaughan, 2014). Students in an advanced placement chemistry class noted that online video lectures held their focus better than typical oral lectures (Schultz et al., 2014). They also detailed the benefits of online video lectures as a mechanism to stay caught up in class if they were absent from the face-to-face class session.

A detailed analysis of the merits of screen casting was conducted by Snyder et al. (2014), largely in an effort to identify student perceptions of and reactions to this style of lecturing. In a three-year longitudinal study, researchers collected qualitative data on student perceptions of screencasts in a ninth-grade geography class. Students enrolled in this course watched brief screencasts that outlined basic geographic concepts and took notes on a graphic organizer provided to them by their instructor. Each year, students completed a Likert-scale questionnaire, given to them on their classroom learning management system, for a total of 209 student responses over three years (Snyder et al., 2014).

Each year, favorable responses regarding the screencasts increased, possibly due to the fact that the instructor could modify and improve the quality of the videos over the course of the study. In the first year, 62% of students reported that the instructor should continue using screencasts as a learning tool in future classes. This opinion was shared by 70% of students in year two and 84% of students in year three of the study. By year three, 95% of students reported enhanced learning and understanding as a result of watching the online video lectures (Snyder et al., 2014).

Researchers continued this analysis of screen casting from years 2013 to 2014, with minor revisions to the methodology of the original study. Snyder and Besozzi (2016) noted the positive student reactions of screencasts with embedded questions. In these revised screencasts, students did not passively watch the lecture, but instead needed to respond to embedded questions posed by the instructor at various times throughout the video. Qualitative data revealed that students had positive perceptions of screencasts with embedded questions. A large majority of students (84.2%) stated that they enjoy embedded screencasts, with 94.8% of students noting how easy they were to use. 94.7 percent of students reported that screencasts aided their learning and helped them remember the information better when completing class assignments. The use of embedded questions encouraged students to actively engage in the content, rather than passively listen. Students reported that this increased their focus and concentration, allowing them to learn and recall the information in the future (Snyder & Besozzi, 2016).

Convenience and flexibility. Perhaps the greatest advantage of the flipped classroom, as reported by students, is the convenience and flexibility offered by this type of class. As access to technology increases, students are benefitting from the individual autonomy

provided to them in the flipped classroom to learn the material at their own pace. Tseng and Walsh (2016) found that students cited convenience as a major factor in their preference for a blended learning environment, over a traditional English literacy course. When students are given online learning tasks, they can tackle each assignment at their own convenience, which ultimately is a better use of their time than a scheduled class session (Tseng & Walsh, 2016).

Other student responses indicate that they enjoy the self-regulated learning that online video lectures allow. Students enrolled in a flipped advanced placement chemistry class had positive perceptions of online video lectures because they could go through the videos at their own pace as many times as was necessary to learn the material (Schultz et al., 2014). Students felt that they benefitted from the ability to pause and rewind the videos, focusing on key areas that they needed to initially learn, and later review (Shultz et al., 2014). Students in a flipped algebra course also echoed these findings, reporting that they could watch each online screencast as much as they wanted, in order to be fully prepared for class (Clark, 2015). The ability to master the content being delivered at their own pace was the greatest advantage of the flipped classroom for these students.

Along with the ability to pause and rewind online screencasts, students enrolled in a flipped history class especially enjoyed the ability to take notes at their preferred speed (Snyder & Besozzi, 2016). They found value in the ability to stop the video entirely, so they could thoroughly write down the required notes before the lecturer moved on. This is often a drawback of the traditional classroom, where many students fail to take detailed notes due to the fast pace of the oral lecture. Other benefits reported by students included the ability to stay caught up on class lectures when absent from school (Schultz et al., 2014), and the ability to access the videos 24 hours a day (Clark, 2015). Students found exceptional value in

using the videos to review for tests (Clark, 2015). Students in a flipped classroom are not limited to using class notes and worksheets as review materials. With online screencasts, students have access to the original lecture in its entirety, so they can fully review concepts that they have struggled on throughout the course of the unit. The overall flexibility offered by the flipped classroom is not only convenient to students, but it also gives them multiple opportunities to learn the material at a pace suitable to their current level of understanding.

Teacher Perceptions of the Flipped Classroom

The results of the literature review indicate that students hold overall positive opinions of the flipped classroom. However, it is important to take note of teacher perceptions of this instructional strategy, as they have unique insight into the construction and practical implementation of the flipped classroom. According to the literature, teachers find promise in the flipped classroom but have identified several major drawbacks to this method of instruction.

Negative perceptions. Teachers who have flipped their classrooms view time constraints and an increased workload as one of the major obstacles faced when trying to implement this instructional strategy. In a review of teacher efficacy in regard to flipped instruction of STEM subjects, Kelly and Denson (2017) found that teachers cited the time it takes to create online video lectures as one of the major drawbacks of the flipped classroom. These findings are replicated in several other empirical studies (Chen, 2016; Gaughan, 2014; Unal & Unal, 2017). Gaughan (2014) specifically takes issue with the permanent nature of an online video lecture. In class, teachers are allowed to modify and refine their lectures based on student questions and points of discussion. Video lectures do not allow for this, and a teacher must record a new video entirely to make even the slightest adjustment to their

instruction (Gaughan, 2014). When faced with an increased workload of this magnitude, some teachers may opt for a traditional style of instruction as a way to manage time.

These instructors also find that keeping students accountable is an obstacle faced in the flipped classroom. Instructors participating in a review of the flipped classroom in STEM subjects note that online video lectures are useless unless there are specific accountability measures to ensure student participation (Kelly & Denson, 2017). Over half (62.5%) of teachers in a graduate program who piloted flipped lessons in their classrooms found that it was difficult to know if students truly did the preparatory work outside of class. Erdogan and Akbaba (2018) describe how teachers view technology constraints as a deterrent of student participation in the flipped classroom. This study included nine teacher candidates, who collectively noted that technological inequality is a major drawback of the flipped classroom.

Gough, DeJong, Grundmeyer, and Baron (2017) also mirror this concern, specifically noting that the flipped classroom is more difficult to implement in lower grade levels due to the unyielding requirement of technology use outside of the classroom. Students who do not have access to technology cannot be as successful in a flipped classroom, specifically one that relies on online video lectures, as their peers who have individual devices to complete their schoolwork outside of class. Gaughan (2014) finds that the lack of student accountability is a limitation to this instructional method. Gaughan (2014) and Kelly and Denson (2017) agree that instructors cannot assume students will adequately engage with the preparatory materials before class. There must be specific measures, such as formative assessments, implemented to ensure students participation and accountability.

Positive perceptions. Although instructors identify several key drawbacks to the flipped classroom, their overall perceptions of this style of instruction are positive in nature.

Both Erdogan and Akbaba (2018) and Gough et al. (2017) note that the online video lectures that often accompany the flipped classroom are of great convenience for students. If students are absent, or simply need to revisit the content, they may do so as many times as necessary to develop understanding. Snyder et al. (2014) explains that screencasts not only allow students to direct the pace and depth of their own learning, but they also free up class time for more inquiry-based activities that allow students to truly engage in the material. The authors note that this is of great benefit to Social Studies instructors, who often have the difficult choice between spending class time on content dissemination that will help students accumulate background knowledge and engaging in critical thinking exercises and historical analysis (Snyder et al., 2014).

Gaughan (2014) notes that screencasts allow her to organize the vast units of her world history course into manageable chunks that the students could easily understand. In a history course, students can become overwhelmed at the sheer amount of knowledge they will be expected to learn. Online video lectures can provide students sufficient background knowledge of each time period, while freeing up class time for collaborative activities and in-depth discussions of the content (Gaughan, 2014).

The highest opinions of the flipped classroom have to do with changes to class time. In an analysis of teacher perceptions of the flipped classroom in STEM subjects, Kelly and Denson (2017) report that teachers find great value in the one-to-one interactions with students during the face-to-face lessons. When teachers are not busy lecturing, they are free to give individual students assistance. Teachers in the flipped classroom have a greater ability to understand student misconceptions of the content, because they are working 1:1 with these students on tasks meant to demonstrate their understanding of the content. If students do not

understand or make a mistake, the teachers can correct them immediately, rather than waiting to measure student understanding on a summative assessment (Kelly & Denson, 2017).

Teachers participating in a graduate program regarded the increased engagement and communication offered in a flipped classroom as a major benefit to this style of instruction (Unal & Unal, 2017). A large majority of teachers participating in the study (81.25%) stated that they had more time to interact with students during class than they did when teaching a traditional lesson. Gaughan (2014) finds that the increased communication allows her to better understand her students early on in a semester, giving her greater insight into their individual struggles. Gaughan (2014) also reflected on her own motivation and levels of engagement after teaching a flipped world history course and found that the interactive activities she facilitated in class made her more excited about the content. This is but one internal thought of one instructor, but this realization can be generalized to other instructors as well. A teacher who is engaged and excited about classroom exercises models this type of behavior in their students, leading to a positive classroom atmosphere.

In an analysis of teacher perceptions of the flipped classroom, Gough et al. (2017) found that teachers find value in the active learning activities found in flipped courses. Teachers noted that learning could be more personalized in a flipped setting, as instructors have more time to engage directly with individual students. Erdogan and Akbaba (2018) report similar opinions of teacher candidates, who view active learning and enrichment activities as a mechanism for student success in the flipped classroom. The instructors participating in the study take note that there is often a “time constraint” to complete enrichment activities in a traditional classroom. A flipped classroom allows an instructor to

spend an adequate amount of time on both content dissemination (outside of class) and active learning exercises (during class) (Erdogan & Akbaba, 2018).

CHAPTER III: DISCUSSION AND CONCLUSION

Summary

The flipped classroom is a relatively new instructional approach that offers promise to those who would like to give students more agency in their learning, as well as those who seek to free up class time for more students-centered activities. As access to technology becomes more commonplace in schools, teachers are increasingly using the flipped classroom as a means to rectify some of the problems commonly associated with a traditional style of instruction. The purpose of this literature review was to examine the overall effectiveness of the flipped classroom, in measures of student achievement and student engagement, in addition to examining student and teacher perceptions of this instructional model. The results demonstrate that while flipping the classroom seems to have moderately positive effects on achievement and student engagement, the most positive results come in the form on student perceptions of the flipped classroom.

Student Achievement

While some empirical studies indicate that the flipped classroom has a positive effect on student achievement (Bhagat et al., 2016; Burgoyne & Eaton, 2018; Lewis & Harrison, 2012, Schultz et al., 2014; Unal & Unal, 2017), the majority of the literature indicates that this style of instruction has either a moderate effect, or no effect at all, on student achievement scores (Aidinopoulou & Sampson, 2017; Chen, 2016; Clark, 2015; Jensen, 2011; Leo & Puzio, 2017; Roehling et al., 2017; Sletten, 2017; Snyder & Besozzi, 2016; Tseng & Walsh, 2016; Whitman Cobb, 2016) . This is not to say however, that the flipped classroom has an adverse effect on student performance on assessments. Some empirical studies indicated that students performed better in a traditional classroom, but no empirical

studies concluded that students are worse off academically as a result of the flipped classroom. Teachers looking to flip their classrooms need not fear that their students' test scores will severely decrease as a result of this teaching method. They must simply be aware that there are relatively few differences between students who receive flipped instruction and students who receive traditional instruction. However, when paired with enhanced student engagement and overwhelmingly positive student perceptions of this instructional method, the flipped classroom is a superior choice to those instructors who are looking to do more than simply increase test scores.

Student Engagement

In measures of student engagement, the flipped classroom has shown moderate to positive results (Bhagat et al., 2016; Chen, 2016; Clark, 2015; Lewis & Harrison, 2012; Schultz et al., 2014, Tseng & Walsh, 2016; Unal & Unal, 2017; Winter, 2018). Some studies indicate that there is no relationship between the flipped classroom and student engagement (Burgoyne & Eaton, 2018; Hodgson et al., 2017), and it is true that some students report feeling more engaged in a traditional setting (Jensen, 2011) but few, if any, studies showed a decline in student engagement levels as a result of this teaching style. Specific measures of enhanced engagement were reported in the following categories: motivation, communication, collaboration, attention, relevance, confidence, and satisfaction. The class environment may be a factor in these increased levels of engagement. In a flipped classroom, students are often engaged in labs, simulations, and other interactive work that has them actively working with the material. Participating in relevant applications of the content is sure to breed higher engagement levels than passively sitting in a desk and taking notes. However, the fact that there are studies out there that show a weak relationship between these two variables

indicates that teachers should include a mix of flipped and traditional instruction in their courses.

Student and Teacher Perceptions

Although the literature indicates that some students prefer a traditional style of instruction over flipped instruction (Jensen, 2011; Van Sickle, 2016; Whitman Cobb, 2016), the majority of studies reviewed indicate that students hold generally favorable opinions of the flipped classroom (Lage et al., 2000; Leo & Puzio, 2016; Murphree, 2014; Tseng & Walsh, 2016; Westermann, 2014). Those that endorse a traditional approach to instruction seem to prefer face-to-face lectures, over online screencasts, and at times feel that they are learning more when presented the course material in class. Some empirical studies demonstrate that student see benefits and drawbacks of the flipped classroom and promote a style of instruction that incorporates aspects of both teaching methods (Forsey et al., 2013; Jenkins, 2015; Roehling et al., 2017; Schultz et al., 2014; Sletten, 2017). These studies are few in number though, with very few recommending a purely traditional course over a blended or fully flipped course.

The literature indicates that students find value in different aspects of the flipped classroom, especially those that promote student autonomy and cooperative learning. In various empirical studies, student have reported that they prefer the variety of active learning tasks offered to them in the flipped classroom (Clark, 2015; Snyder et al., 2014). These active learning exercises allow them to grapple with difficult concepts via real world and interactive examples, which ultimately aid their learning better than passive notetaking. Students in various studies reported greater learning as a result of the flipped classroom (Clark, 2015; Lage et al., 2000, Murphree, 2014; Westermann, 2014). Other themes found in

the literature included a preference for increased opportunities for groupwork (Lage et at., 2000; Schultz et al., 2014) and the helpfulness and convenience of online video lectures (Clark, 2015; Gaughan, 2014; Schultz et al., 2014; Snyder & Besozzi, 2016; Snyder et al., 2014; Tseng & Walsh, 2016). Students are realizing that cooperative work not only aids in their learning, but will prepare them for their future careers, where collaboration and teamwork are integral components of the workplace. The benefits of convenient online learning also cannot be ignored. Giving students the opportunity to learn at their own pace and on their own schedules allows for greater agency and gives them the tools necessary to be in charge of their own learning.

Teacher perceptions of the flipped classroom are a bit more scattered. Some of the literature reveals that instructors view the flipped classroom as a daunting task, due to the extensive time requirements needed to construct this type of course (Chen, 2016; Gaughan, 2014; Kelly & Denson, 2017; Unal & Unal, 2017). As class sizes grow and preparatory time is minimized each year, a concern of an increased workload for classroom teachers is valid. Other teachers express concern that the practicality of implementing this type of course is overshadowed by the "newness" of this instructional approach. Many students do not have unlimited access to technology or the internet and implementing a classroom that requires student use of technology outside of school raises equity issues. Those without access to a electronic device may not perform as well in a flipped classroom as those students who do have access to such materials (Erdogan & Akbaba, 2018; Gough et al., 2017).

With those issues in mind, many teachers in the same empirical studies also note the benefits of flipping. These positive perceptions largely mirror their student's opinions, in that teachers view convenience, flexibility, and active learning as the greatest aspects of the

flipped classroom (Erdogan & Akbaba, 2018; Gaughan, 2014; Gough et al., 2017; Snyder et al., 2014). Teachers also reveal that they are better equipped to help their students, as class time in a flipped classroom allows for greater student-instructor communications (Kelly & Denson, 2017). Teachers looking to flip their classrooms should carefully review the literature before implementing major changes to their courses, but should rest easy, because the research surrounding this instructional approach is largely positive.

Professional Application

The multitude of information described in this literature review indicates that the flipped classroom can be beneficial for students in both K-12 classrooms and postsecondary institutions. The most positive data of the flipped classroom comes in the form of student endorsements of this instructional method. It is imperative that students "buy in" to the methods of instruction that the teacher is offering. Without student interest, engagement falls, and deeper learning of the material cannot take place. In regard to the flipped classroom, students are overwhelmingly positive about the autonomy and agency over one's own learning the flipped classroom promotes. As society enters the digital age, students can take charge of their own learning, and no longer have to look to their instructors as the sole possessors of knowledge. Students are finding value in online screencasts, rather than in-class lectures, as a way to manage their learning at their own time and pace.

Fewer and fewer school districts in Minnesota are relying on the traditional pencil and paper approach to instruction. Many school districts are adopting 1:1 technology for students and are encouraging teaching to deliver lessons and communicate with students on various learning management systems, such as Schoology or Google Classroom. The flipped classroom is an instructional style that fits perfectly with this new technological trend that

many schools are adopting. Teachers are able to post their lessons online for students to have access to before meeting with them in a face-to-face class session. Online learning management systems offer a wide variety of ways to disseminate content to students, such as online readings, podcasts, or as many instructors use, screencasts of prerecorded lectures. Students then, can work through these materials at their personal convenience, so as to be prepared for the active learning exercises that will be assigned during the face-to-face class session.

High school instructors should find great value in the research surrounding the flipped classroom. Secondary instructors are often tasked with preparing high school students for the rigor that collegiate institutions will require. The use of the flipped classroom puts students in charge of their own learning and gives them the power to achieve success. Having online access to preparatory materials allows the student to view the content as many times as necessary to understand the content and ultimately achieve mastery. This in itself is giving students the tools to be successful in a postsecondary environment.

As a high school Social Studies teacher, I find the greatest value in the fact that the flipped classroom frees up class time for more student-centered activities. Class time can now be spent building on the base knowledge that students are already exposed to on their course learning management system. By assigning lectures and course readings on their course Schoology pages, I can incorporate activities such as role plays/simulations, debates, and Socratic Seminars, activities all meant to promote a deeper understanding of the content. The flipped classroom promotes these active learning activities, as class time no longer needs to be spent in a repetitive lecture and note-taking state. Teachers, especially high school Social Studies teachers, should consider flipping their classrooms in an effort to promote

more engaging and cooperative learning activities during class. The literature indicates that students are more than ready for a change in the way that Social Studies courses are traditionally delivered.

Limitations of the Research

For this literature review, it was imperative to focus on empirical articles that detailed a partially flipped or a fully flipped classroom. Articles that merely focused on online learning were not addressed, as they do not address the aspect of active learning that the flipped classroom offers. However, it is important to note that some empirical studies of blended classrooms were included in the review of the literature (Tseng & Walsh, 2016; Westermann, 2014). As the flipped classroom is still a relatively new instructional approach, not all instructors use a pure form of this teaching method. Empirical studies in which instructors partially flip or use a combination of online and face-to-face instruction were used sparingly to build on the extensive review of this research topic.

The articles reviewed also focused solely on the effects of the flipped classroom, rather than the various ways to implement this style of instruction in one's classroom. The research was organized to answer three research questions: effects of the flipped classroom on academic achievement, student engagement, and overall perceptions of this teaching method. The history of and development of the flipped classroom into its current form was addressed briefly in the introduction, and the various ways in which instructors have adapted the flipped classroom was detailed in the explanations of the methodology of each empirical study. However, the main focus was not to review how the flipped classroom can be implemented, but the overall effects of this instructional method in a variety of content areas and across all age levels.

The pool of literature itself was limited in various ways, which will pave the way for future research of this topic. Longitudinal studies, in which the effects of the flipped classroom were measured over an extended length of time were few in number. Many empirical articles detailed effects of the flipped classroom in one's classroom over the course of one year, one semester, or even a few weeks of instruction. Furthermore, few studies that sought to examine the academic outcomes of the flipped classroom offered multiple summative assessments to measure changes in academic outcomes. Studies that measure multiple assessments over an extended period of time would provide more meaningful data on the relationship between flipped instruction and student achievement, than empirical studies that use only one, or a few, summative assessments as their sole method of comparison.

The research in the area of Social Studies could also be more bountiful. It was difficult to examine specific effects of the flipped classroom in a high school Social Studies course, as the research currently available spans across a variety of age levels and content areas. Research on the effects of the flipped classroom on content heavy classes, such as history and government, are few in number and do not address how flipped instruction can help students develop skills relevant in social sciences, such as historical thinking skills and civic engagement. The research surrounding the effects of active learning in Social Studies courses was limited, in that many empirical studies focused more on the method of content-delivery outside the classroom, rather than the collaborative work offered during the face-to-face class session. Further research on the flipped classroom's role in Social studies, especially at the high school level, is needed.

Implications for Future Research

As stated above, future research is needed on the relationship between the flipped classroom and student achievement. Longitudinal studies that examine changes in achievement outcomes as a result of this methodology is needed to determine the academic merits of this instructional approach. Teachers should build on the literature surrounding this research topic by examining changes in achievement levels in the same students over the course of multiple years, or by examining various classrooms across a variety of grade levels over the same extended time period. To develop a true understanding of this research question, multiple assessments need to be delivered to students, rather than a single post-test that many of the empirical articles detailed in this literature review described.

Future researchers should also focus on the effect of the flipped classroom in independent core subjects, primarily the social sciences. This research should focus on singling out specific aspects of the flipped classroom that seem to benefit students enrolled in secondary social studies courses. Empirical studies could shed light on what aspect of the flipped classroom, the online dissemination of content or active learning exercises, benefit students the most. This information can then aid teachers looking to flip their classrooms in the structural design of their courses. Those looking to increase student's ability to think critically and develop historical thinking skills for example, can flip their classroom in a way that will provide students the time and activities necessary to develop these skills.

Conclusion

This literature review sought to examine the role of the flipped classroom in modern education. The research demonstrates that while there are various drawbacks to this style of instruction, the majority of students report enhanced engagement and overall perceptions of

their courses when taught in this format. The fact that students seem to “buy in” to this style of instruction should signal to instructors that students are ready for a shift from a traditional classroom to one that accommodates a mix of online learning and active, collaborative work amongst students. As many school districts and instructors are adapting their methods of instruction to align with new technology initiatives, they are looking for innovative and effective ways to reach their students and ensure their success. The flipped classroom is perfect for those teachers looking to increase collaboration in their classrooms via active learning exercises, while promoting and fostering increased student autonomy and agency in the classroom. Instructors who are looking for an alternative way to deliver content in ways that students will find value in, will find their home in the flipped classroom.

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