"Just Don't Bore Us to Death": Seventh Graders' Perceptions of Flipping a Technology-Mediated English Language Arts Unit

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Abstract

This mixed methods study aimed to assess student engagement during the flipped model of instruction in two seventh-grade English language arts (ELA) classrooms. Implementation of the flipped model required students (n=183) and teachers (n=2) to use digital technology via a website and teacher-made videos. It compared student perceptions during a flipped unit to those same students' perceptions during a traditionally taught unit. A hybrid embedded design and case study interviews were used to assess students' cognitive, emotional, and behavioral engagement. Data analysis revealed that overall student engagement decreased in the flipped unit and that students were divided in their reactions to the flipped method with one student poignantly writing on the survey, "Just don't bore us to death." This work is significant in that it is among the first to examine whether course content matters when utilizing the flipped method and whether student engagement in the traditional ELA curriculum is unique due its emphasis on discussion and holistic assessment.

Introduction

The flipped classroom has gained ground in the past decade as a creative strategy with the potential to remake education. Propelled into the public consciousness by the YouTube hit channel and website Khan Academy (http://www.khanacademy.org; https://www.youtube.com/user/khanacademy), as well as television programs like *60 Minutes* (Reynolds, 2014) and mainstream magazines like *TIME* (2012) and *Forbes* (Gobry, 2012; Meyer, 2014), the idea has gained traction with stakeholders inside and outside education who view it as a way to captivate disenfranchised students (Atkins, 2013; Bergmann & Sams, 2012b; Berrett, 2012; Fulton, 2012; Tucker, 2012). In this model, direct instruction and fact-based content typically is delivered via a digital video that students watch outside the classroom, while activities and active-learning strategies are conducted inside the classroom. The proliferation of the design has come in the wake of a nationwide push for more technology-mediated methods that bridge the gap between students' in-school and out-of-school literacy practices (Ajayi, 2009; Berg, 2011; Deed & Edwards, 2011; Dredger, Woods, Beach, & Sagstetter, 2010).

Proponents say this technology-reliant idea has the potential to completely shift the classroom environment, reaching even the most reluctant of learners (Bergmann & Sams, 2012a, 2012b; Fulton, 2012; Tucker, 2012). While others note that it appears to be merely an inverted version of the teacher-centered classroom with traditional lectures and homework in flipped positions (Hamdan, McKnight, & McKnight, & Arfstrom, 2013; Jump, 2013) and might even create additional hurdles for teachers who feel unprepared to attempt video creation (Herreid & Schiller, 2013).

Since the method is fairly new, there is limited empirical research on the efficacy of the model in K-12 schools and even less in English language arts (ELA). However, teachers who do flip say they do so because they want to spend more individual time with students and more effectively address the curriculum (Fulton, 2012). They want a classroom centered on inquiry and problem-based learning (Bergmann & Sams, 2012a; Johansen & Cherry-Paul, 2016), and they want to eliminate the constant homework struggle (Strayer, 2007). In addition, these teachers say the online instruction allows students who miss class for sports or extracurricular activities to keep up with their peers by accessing content after hours (Herreid & Schiller, 2013).

Much of the research that does exist has been conducted in Science, Technology, Engineering, and Mathematics (STEM) classrooms, as well as in higher education institutions. Many STEM classes incorporate content-specific direct

instruction, which may explain why the flip is more popular among STEM teachers. However, data have been inconclusive, as students and teachers still are adjusting teaching and learning styles within this new paradigm (Moran & Young, 2013; Moran & Young, 2015; Young & Moran, 2017). This mixed methods study sought to address the lack of empirical research on the flipped model in secondary ELA by assessing student engagement with a technology-reliant flipped model in two seventh-grade ELA classrooms with 183 students and two teachers. It examined 1) the difference in engagement between students in a flipped ELA classroom and those in a traditional ELA classroom; and 2) how seventh-grade ELA students experienced and perceived the flipped method in comparison to a traditionally taught ELA course.

Literature Review

The flipped classroom seems to have developed simultaneously in various parts of the country as technology access became more prevalent. In 1995, J. Wesley Baker, a professor at Cedarville University in Ohio, decided to post his PowerPoint slides onto the school's new computer network and have the students read the slides before coming to class. In class, the students broke into small groups to apply and practice the concepts. Baker (2000) surveyed his students at the end of the term and discovered that they felt they had learned a great deal from their peers through the collaborative activities. He dubbed the new process the "Classroom Flip" around 1997 or 1998 (Baker, 2000, p. 3).

Simultaneously, another group of university instructors at Miami University in Ohio launched an "inverted classroom" (Lage & Platt, 2000) in an attempt to differentiate their microeconomics lessons for different learning styles. The students viewed PowerPoint slides and course content on a course website before coming to class. Once in class, the students worked in small groups to dissect the material. Lage, Platt, & Treglia (2000) wrote that "inverting the classroom means that events that have traditionally taken place inside the classroom now take place outside the classroom and vice versa" (p. 32). A survey administered at the end of the course indicated that students enjoyed the collaborative nature of the class and learning economics in a new way.

In 2007, Bergmann and Sams (2012a) began a combined effort to teach high school chemistry through recorded lectures, thus allowing the two teachers to spend class time working one-on-one with their students. Their idea was born independently of Baker's (2000), but seemingly created from the same ingredients of the 21st Century – technology access and frustration over students' lack of engagement.

Much of the support for the flipped model comes from existing knowledge about the benefits of a collaborative learning environment – especially one in which technology is a component. A Technology Rich Environment, or TRE, is described by Lajoie and Azevedo (2006) as a "learning environment that is designed for an instructional purpose and uses technology to support the learner in achieving the goals of instruction" (p. 803, as quoted in Alexander & Winne, 2006). This environment is ideally suited to the flipped classroom model and its integration of technology into the curriculum. The possibilities for collaboration and scaffolding that the TRE provides can help motivate students and lead students to achieve mastery goals (Turner & Patrick, 2004). In addition, self-efficacy beliefs and motivation that typically decline during adolescence (Wigfield, Byrnes, & Eccles, 2006) can be bolstered in a classroom environment that emphasizes choice and inherent enjoyment of learning (Turner & Meyer, 2000; Turner, Midgley, Meyer, Gheen, Anderman, & Kang, 2002). However, teachers may be reluctant to introduce any type of technology into their teaching unless they can guarantee there will be specific and measurable benefits (Means, 2010).

Empirical evidence on the efficacy of the flipped method is inconclusive with data supporting the method and questioning it. Strayer (2007) found that students in a college-level flipped statistics course were less satisfied with the instruction they received on end-of-course reviews. Strayer (2007) concluded that the students did not really know "how to do class" (p. 155) when it was flipped and that frequently the collaboration felt like "the blind leading the blind" (p. 135).

However, Marcey and Brint (2012) found that students in two university-level biology classes preferred learning through a flipped class over a traditional in-person lecture class. Gehringer and Peddycord (2013) also found that students in university-level computer sciences classes demonstrated higher levels of engagement in a flipped class environment. Other researchers (Ferreri & O'Connor, 2013; Johnson & Renner,

2012) found that students in STEM courses demonstrated improved grades and learning outcomes in courses that applied a flipped method. In addition, high school trigonometry students taught using the flipped method demonstrated increased performance and motivation over their traditionally taught peers (Bhagat, Chang, & Chang, 2016).

Some researchers have focused on motivation in the flipped classroom, since the method's main selling point is its supposed ability to motivate even reluctant learners (Bergman & Sams, 2012a; Johansen & Cherry-Paul, 2016; Sun & Wu, 2016). Students were found to have increased motivation for learning in a flipped economics course, as long as collaborative activities were involved (Foldnes, 2016). However, the connection to motivation and engagement in an ELA course is difficult to gauge because much of the research on the effectiveness of the flipped classroom has not considered whether course content is a factor. Few researchers have investigated whether ELA specifically is suited to flipping and whether the unique nature of the ELA curriculum (discussions, debates, literary analysis) makes the flipped classroom model unsuitable.

This article contributes uniquely to the research by looking at the flipped method as it applies solely to ELA and ELA content. It provides additional data on how the flip is perceived by students in a content area that typically is associated with discussions, reading, writing, and dramatic arts. It adds to the conversation on the efficacy of a method that is being touted by some stakeholders as a panacea for all subject areas, rather than reflecting on whether discipline-specific considerations should be studied.

Background of the Study

An initial investigation into student perceptions and engagement with the flipped classroom method was conducted through a mixed methods pilot study in a high school ELA classroom (Moran & Young, 2013). The students in the study were enrolled in two sections of an Advanced Placement English Language Arts and Composition (AP Lang) course and were in the 11th grade. Forty-nine participants answered questions on a validated survey, and eight participants took part in two focus groups.

Behavioral and emotional engagement were measured through field observations in the classroom, because we were most interested in learning about engagement, rather than student achievement because the participants were in an AP class and already identified as academically gifted. We knew from their teacher that the students likely would achieve the learning outcomes with any method. In addition, a survey was used that was based on a modified version of the Computer Attitude Questionnaire (CAQ) originally developed and validated by Knezek and Christensen in 1996 to assess middle-school students' attitudes toward learning with computers. This survey was used as a model because it measured both attitudes and technology use in secondary students. It contained 20 Likert scale statements, such as "I feel comfortable with learning through the flipped method."

The focus groups consisted of two groups of four students who had been chosen at random by their teacher. The focus groups met with a researcher in a separate room, and the interviews took approximately one hour.

The research questions for the study were:

> 1) Are high school ELA students engaged by the flipped classroom method? If so, what aspects of the strategy appeal to them as students? If not, why not?
> 2) Do high school ELA students prefer the flipped classroom paradigm over the traditional classroom paradigm? If so, what aspects of the strategy inform their preference? If not, why not?

A purposeful convenience sampling method was used in the study. The participants (n=49) were students at Pinewood High School, a suburban high school in the Southeastern United States. The teacher, Ms. Brown, used screen capture software to record lectures and asked her students to view them at home.

Survey data were analyzed quantitatively through STATA statistics software with a researcher looking for means and standard deviations on each of the 20 questions. Focus group comments were audiotaped and then transcribed. The comments were open coded (Creswell, 2012) and analyzed for similarities, differences, and common themes.

The results on this pilot study were mixed. Survey data indicated that students were engaged with the flipped method and liked it as a form of instruction, but remained unsure about whether it was superior to a traditional lecture model and whether it was appropriate for an ELA class. Although a few students said they already had been exposed to the method through their math classes, prior experience with the method was limited – or nonexistent. Field data and focus group data indicated that students were polarized in their support of the method, with some students strongly supporting it, and others intensely disliking it.

Five main themes emerged from the data analysis:

1) "I like the flipped method." Some students reported that they felt class time was more productive, and they enjoyed the opportunity to pause and rewind the videos.

2) "I prefer traditional classes." Some students also stated that they did not like the flipped method, and they preferred lecture-based, traditional, teacher-led instruction.

3) "The flip is impersonal." Some students felt that the self-reliant and self-paced nature of the flipped method was too isolating. Although they were encouraged to do so, these students said collaboration with other students was difficult. They also missed a perceived connection with the teacher when she delivered instruction at the front of the class.

4) "The flip is not good for English class." In the focus groups, in particular, students were adamant that ELA classes benefitted most from whole-class, teacher-led discussions, as well other strategies, such as literature circles).

5) "I don't care." Data analysis revealed that one of the most prevalent themes of the study was a general apathy about school in general. The students said they did not care which method their teacher used. School was still school.

Conclusions from the Pilot

Overall, the students seemed to have mixed views about the flipped method of instruction and did not embrace it whole-heartedly as a pedagogical strategy for the ELA curriculum. The data indicated that many students were engaged by the method, while others found it disheartening and boring.

The mixed results of the pilot study led to a desire to investigate further student engagement and teacher perceptions in the flipped ELA classroom. The findings generated many questions, particularly in connection to student engagement. Although the term "engagement" had been used in the pilot study, it had not been defined adequately. This new study sought to explore more deeply the nuances of engagement in a flipped classroom, utilizing definitions proposed by Fredricks, Blumenfeld, and Paris (2004), as well as a larger sample of students.

Theoretical Framework and Research Questions

In the follow-up study, a framework of sociocognitive theory based on the work of Vygotsky (1978) was used, as well as situated learning theory grounded in constructivist principles in a technology-rich learning environment (TRE) (Lajoie & Azevedo, 2006). In addition, Engagement Theory (Kearsley & Shneiderman, 1998) posits that students learn best in a technology environment when the tasks are collaborative, project-based, and have an authentic focus. These concepts are rooted in the basic assumption that students learn best through interactive processes in a technology-rich environment with a sociocultural component.

These three theories and their connections to learning formed the framework for the study. Each of the three theories emphasizes learning by doing and constructivist principles. Vygotsky's work indicates that children learn best when they construct meaning on their own with the guidance of an expert adult. This constructivism also undergirds the ideas of Lajoie and Azevedo (2006), who advocated for student autonomy in learning in a TRE. With the help of digital tools and the guidance of an expert adult, students can acquire knowledge through creation and experiential activities that are collaborative and project-based. A learning environment that features technology and project-based, collaborative activities, in turn, is the most engaging for students (Kearsley & Shneidermann, 1998). We sought to bring these four elements– constructivism, collaboration, project-based learning, and a TRE– into the design of the study.

In order to understand student engagement in a flipped ELA classroom, as well as the pedagogical processes involved in designing

flipped, ELA instruction, a mixed methods approach was used (Creswell & Clark, 2011). Two questions guided the study. The first question related to the collection of quantitative data, while the second question related to the collection of qualitative data (Clark & Badiee, 2010; Onwuegbuzie & Leech, 2006).

The questions for this study were:

1) What is the difference in engagement when middle grades students learn in a traditional ELA classroom and then a flipped ELA classroom?

2) How do the follow-up case study interviews extend, refute, or illuminate the findings about middle grades ELA students' engagement with the flipped method?

Methods

The primary goal of the study was to understand students' perceptions of a flipped ELA class in comparison to a traditionally taught ELA class. A mixed methods approach was used for data collection and analysis. Both qualitative data and quantitative data collection and analysis were used to more effectively assess the "benefits and constraints" (Schutz, Chambliss, & DeCuir, 2011) of the data. A hybrid embedded design (quan →QUAL→ quan), as well as follow-up case study interviews, were used to assess student engagement in both the traditional classroom paradigm and the flipped classroom paradigm. Quantitative data were gathered in a pre-test to assess students' engagement through the Motivational Strategies Learning Questionnaire (MSLQ) (Pintrich, 1991; Pintrich & DeGroot, 1990). Then, qualitative data were collected during the treatment phase of the study through field observations. The treatment phase consisted of the flipped method implementation for approximately a one-month period. At the end of the treatment phase, the MSLQ was administered again as a post-test. Finally, follow-up case study interviews were conducted with six students. Figure 1 details the experiment design.

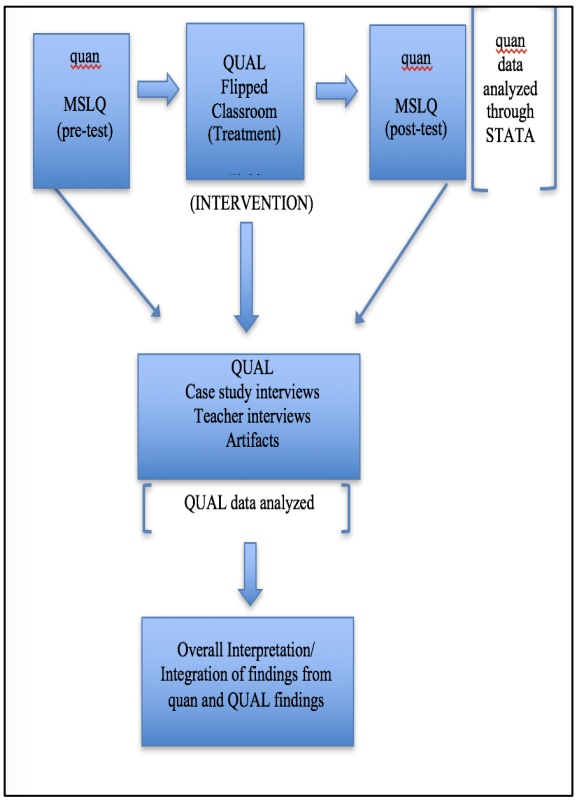

Figure 1. Diagram for mixed methods embedded design with case study follow-up.

Data Sources and Analysis

The MSLQ was designed by Pintrich and DeGroot (1990) to measure the motivational and self-regulated components of individual students in a classroom. The original, 81-item survey featured Likert-type questions that were divided into two sections: a motivation section and a learning strategies section. The MSLQ was designed to measure 1) student motivation; 2) cognitive strategy use; 3) metacognitive strategy use; and 4) management of effort. These components generally are believed to reflect a student's motivation and success in an academic environment (see Davis, Summers, & Miller, 2012; Sciarra & Sierup, 2008; Skinner & Belmont, 1993). A student who is motivated to achieve – either intrinsically or extrinsically – likely will put forth effort and regulate their actions so that they are successful academically. This was important to measure in the ELA flipped classroom because the pilot study indicated that some students were not motivated. We wanted to know what motivated the students and whether the ELA content affected their engagement.

The original survey was broken into 15 subscales – six in the motivation section and nine in the learning strategies section. Since the sample size was of moderate size (n=183) and the students were young (12- and 13-years-old), just four subscales were selected to measure engagement and motivation. We did not want to exhaust students with the longer, 81-item survey, and we felt that we could accurately assess their engagement with the four subscales. The "intrinsic motivation" and "extrinsic motivation" categories from the motivation section were chosen, and the "cognitive and metacognitive strategies – organization" and "resource management – effort" from the learning strategies section were chosen. This resulted in a total of 16 questions on the tested version of the MSLQ.

Using Fredricks and colleagues' (2004) definition of three-pronged engagement (behavioral, cognitive, and emotional), it was felt that the extrinsic and intrinsic subscales most closely reflected the idea of *behavioral engagement* and its emphasis on a student's "effort, persistence, participation, and compliance with school structures" (Davis et al., 2012, p. 23), as well as *emotional engagement* and a student's feelings about the class. The cognitive and metacognitive/organization subscale reflected the idea of *cognitive engagement* and its connections to how students feel about their work, as well as the strategies they use to master their work. The resource management/effort subscale reflected *cognitive engagement* and *behavioral engagement*. These subscales dovetailed with the research questions for the study.

School Context

Field observations were conducted over a one-month period at Lakeview Middle School in a suburban area of the southeastern US. The area is in a fast-growing region and is known for its influx of new residents from other parts of the US, as well as a large number of immigrants from Mexico and Central America. The town in which the school is located has about 40,000 residents and reports a median income that is nearly double that of the state average. Still, mobile homes are within a mile of the school, as are vestiges of the rural community that used to reside there, including a tractor dealership.

Participants

The field observations occurred in two seventh-grade ELA teachers' classrooms at Lakeview Middle School and involved approximately 200 children. Institutional Review Board (IRB) and school system permission forms were obtained from 183 students and their guardians. The remaining students participated in the activities, but their data was not counted because they did not turn in the two signed permission slips. Both teachers in the study taught four sections of seventh-grade ELA, or about 100 students each, and their class periods lasted approximately 50 minutes.

In addition to the interviews and survey, a researcher observed in eight class periods for two days as the teachers implemented an instructional unit in a traditional classroom paradigm. Data were collected on the behavior of the students (n=183) and teachers (n=2) as they went about the business of learning and teaching "as usual." These initial, "usual" classroom experiences were compared with the flipped classroom experiences that followed. The researcher's role was strictly one of observer, and she did not participate in the instruction or activities.

The same students (n=183) and teachers (n=2) were observed for three weeks as the teachers implemented the flipped method in their classes. The flip was implemented through a unit on poetry immediately following the researcher's observations in the traditional classroom. The teachers also were observed and interviewed daily before, during, and after the flipped unit.

The Flip

The flipped unit was a three-week unit on poetry that the two teachers had taught in a more traditional way in the past. In the traditional unit from past years, the teachers had given whole-class lectures on forms of poetry, poetic terms, and poetic analysis, then directed the students to complete activities and homework to assess their understanding. The teachers said it was a unit that students typically had scored poorly on a summative assessment and had confessed to finding boring. The teachers were interested in trying a new way to teach the content.

In the flip, the teachers recorded three five-minute video lectures – one on literary terms,

one on forms of poetry, and one on annotating and analyzing a poem. These videos were assigned to the students one at a time to be watched outside of the classroom. Students were given approximately three days to watch each video. In the classroom, the teachers devised poetry stations in which students self-directed their learning by choosing a station and completing the activities in an asynchronous manner. Rather than having the whole class learning about literary terms at the same time, the students selected the stations in any order they desired. Once a station was completed, the students received a stamp in their "poetry passport" after demonstrating to their teacher that they understood the concepts. The stations could not be completed without the prior knowledge acquired through the videos. Activities in the stations included writing poetry in a specific form (such as a limerick), annotating a poem (Robert Frost's 1916 poem "The Road Not Taken"), working with a partner to create a poem from cut-up words in an envelope, and worksheets on literary terms.

The Survey Instrument

On the tested version of the MSLQ, the 16 items were scored on a seven-point Likert-type scale, ranging from 1 = "not all true of me" to 7 = "very true of me." The means for each subscale were derived. Questions ranged from "I often feel so lazy or bored when I do the work for this class that I quit before I finish what I planned to do" to "I work hard to do well in this class even if I don't like what we are doing."

Analysis

The questions were organized into their subscales and then the numbers analyzed. The means and standard deviations for each question on the pre-flip survey and post-flip survey were found. A related samples t-test on each scale was run and the size of the effect was measured.

In qualitative data analysis, the vast amounts of raw data were "winnowed" (Wolcott, 1990, in Stake, 1995) into themes. Utterances were color-coded manually and then analyzed through open coding (Creswell, 2012). Merriam's (1998) two-step analysis process was used, in that the written responses on the MSLQ were coded first and then the individual cases were coded second. A cross-case analysis was conducted that compared the responses from the six case studies with the responses of the students at large. The field observation notes were consulted to triangulate this data. Another researcher also coded the data to provide interrater reliability and give validity to the findings.

Findings

The results that follow are broken into quantitative and qualitative findings in order to provide a more reliable picture of the seventh-graders' perceptions of the flipped and traditional ELA classrooms. The quantitative results are based solely on the MSLQ scores, while the qualitative results are reported in terms of the overall themes that emerged.

Quantitative Results

Results showed that the students' engagement decreased in three of the four subscales after the flipped unit. Table 1 details the differences between the pretest and the posttest.

Detailed results for each subscale are as follows:

1. Intrinsic motivation decreased after the flipped unit. Intrinsic motivation in the pretest was found to have a mean score of 4.63 with a standard deviation of .98. Intrinsic motivation after the flip in the posttest was found to have a mean score of 4.39 with a standard deviation of 1.18. The t-test also revealed that students' intrinsic motivation decreased after the flip, $t(366) = 2.13$, $p = .0331$, two tailed. The effect of the flip on students' intrinsic motivation was small. Specifically, about 22% of the variation in the students' intrinsic motivation from pre- to post is explained by the flip, $\eta^2 = .22$.

2. Extrinsic motivation decreased after the flipped unit. Extrinsic motivation in the pretest was found to have a mean score of 5.58 with a standard deviation of 1.03. Extrinsic motivation after the flip in the posttest was found to have a mean score of 5.06 with a standard deviation of 1.18. The t-test also revealed that students' extrinsic motivation significantly decreased after the flip $t(366) = 4.50$, $p = .0000$, two tailed. The effect of the flip on students' extrinsic motivation was medium. Specifically, about 47% of the variation in the students' extrinsic motivation from pre- to post is explained by the flip, $\eta^2 = .47$.

3. Organizational strategies decreased after the flipped unit. Organizational strategies in the pretest were found to have a mean score of 3.98 with a standard deviation of 1.20. Organization strategies after the flip in the posttest were found to have a mean score of 3.54 with a standard deviation of 1.32. The t-test also revealed that students' organizational strategies significantly decreased after the flip, $t(364) = 3.29$, $p = .0011$, two tailed. The effect of the flip on students' organizational strategies was medium. Specifically, about 34% of the variation in the students' organizational strategies from pre- to post is explained by the flip, $\eta^2 = .34$.

4. Effort regulation remained about the same after the flipped unit. Effort regulation in the pretest was found to have a mean score of 5.72 with a standard deviation of 1.06. Effort regulation after the flip in the posttest was found to have a mean score of 5.76 with a standard deviation of 1.03. The t-test revealed that students' effort regulation remained about the same after the flip, $t(364) = -0.37$, $p>.64$, one-tailed. The effect of the flip on students' effort regulation was small. Specifically, less than 3% of the variation in students' effort regulation was explained by the flip, $\eta^2 = .03$. Table 1 details the means, standard deviations, differences, and p values for each of the four subscales tested.

The study also looked at whether there were any differences between males' and females' responses to the flipped method of instruction, as well as any differences between different ethnoracial (Frederickson, 2002) groups. Students were asked to self-describe their gender as either male, female, or "prefer not to say." Students also selected their ethnoracial group from the choices provided on the original MSLQ. These were: African American, Asian, Caucasian, Hispanic, Native American, and Other[1].

Within these parameters, the sample consisted of 103 females, 79 males, and one student who "preferred not to say" what his/her gender constituted. The sample's ethnoracial breakdown included 10 African Americans, 19 Asians, 112 Caucasians, 15 Hispanics, one Native American, and 23 "others." This is fairly comparable to the school's demographics as a whole. The sample consisted of 5% African Americans, compared to 5.7% in the school; 10% Asians, compared to 9% in the school; 61% Caucasians, compared to 64% in the school; 8% Hispanics, compared to 17.5% in the school; .1% Native Americans, compared to .1% in the school; and 12% "others," compared to 3.6% "two or more races" in the school.

The results of the post-test findings indicate that girls were more engaged by the flipped classroom than boys. Although empirical results have been inconclusive, some researchers theorize that girls may do better in collaborative learning environments when paired with friends (Swenson & Strough, 2008). This phenomenon also could be at work in a flipped classroom, where collaboration during in-class activities is important. Girls also tend, in general, to outpace boys in language arts (Osler & Vincent, 2003; Sadker, 2002). However, generalizing about the results is difficult, as the girls were found to be more engaged *before* the flip, as well. Findings from the MSLQ posttest show:

- Girls were more intrinsically motivated during the flip than boys. Girls (n=103), M=4.60, SD=1.17. Boys (n=80), M=4.13, SD=1.16.
- Girls were more extrinsically motivated during the flip than boys. Girls (n=103), M=5.13, SD=1.14. Boys (n=80), M=4.97, SD=1.23.
- Girls' organizational strategies increased during the flip more than boys. Girls (n=103), M=3.81, SD=1.34. Boys (n=80), M=3.21, SD=1.22.
- Girls' effort regulation increased during the flip more than boys. Girls (n=103), M=5.97, SD=.93. Boys (n=80), M=5.48, SD=1.10.

Tables 2 and 3 summarize the results of boys' and girls' pretest and posttest mean scores, standard deviations, and differences.

When the survey data were subdivided into ethnoracial groups, the results indicated that African Americans were the most engaged by the flipped classroom method, as the mean scores were highest in every subscale for this group.

[1] These ethnoracial delineations were devised by Pintrich and DeGroot (1990). We maintained this original language in our version of the MSLQ.

Table 1

Means, Standard Deviations, Difference Scores, and p Values for the Pretest and Posttest MSLQ

Scale	Pretest		Posttest		Difference	p level
	Mean	SD	Mean	SD		
Intrinsic motivation	4.63	.98	4.39	1.18	0.24	.03*
Extrinsic motivation	5.58	1.03	5.06	1.18	0.52	.00**
Organization	3.98	1.20	3.54	1.32	0.44	.00**
Effort	5.72	1.06	5.76	1.03	-0.04	.64

* Related samples t-test significant at .05 level
** Related samples t-test significant at .001 level

Table 2

Means, Standard Deviations, and Differences for Boys' Pretest and Posttest MSLQ

Scale	Boys' Pretest		Boys' Posttest		Difference
	Mean	SD	Mean	SD	
Intrinsic motivation	4.48	.99	4.13	1.16	0.35
Extrinsic motivation	5.46	1.06	4.97	1.00	0.49
Organization	3.57	1.21	3.21	1.22	0.36
Effort	5.39	1.13	5.48	1.10	-0.09

Table 3

Means, Standard Deviations, and Differences for Girls' Pretest and Posttest MSLQ

Scale	Girls' Pretest		Girls' Posttest		Difference
	Mean	SD	Mean	SD	
Intrinsic motivation	4.75	.97	4.60	1.17	0.15
Extrinsic motivation	5.68	1.00	5.13	1.14	0.55
Organization	4.31	1.08	3.81	1.34	0.50
Effort	5.97	.93	5.97	.93	0.00

However, because the sample of African Americans was very small (n=10), generalizing the results is difficult.

Table 4 shows each ethnoracial group and the mean scores and standard deviations for each of the subscales on the MSLQ given after the flipped unit. These are the raw scores, and caution is urged in interpreting these or generalizing the results beyond this particular study.

Qualitative Results

In field observations, a running tally of students' behavioral, cognitive, and emotional engagement in the classroom was kept. Using Fredericks et al.'s (2004) definition of engagement, *behavioral engagement* can be measured through participation in classroom activities, as well as the physical actions of students. *Cognitive engagement* speaks to a student's effort, intellectual focus, and self-regulation. Finally, *emotional engagement* relates to a student's positive and negative reactions to work, the teacher, his or her peers, and the school environment.

These parameters were used to broadly assess engagement every day in every class period during field observations. Table 5 demonstrates the mean scores from these observations.

Table 4

Mean Scores and Standard Deviations for Specified Ethnoracial Groups on the Posttest MSLQ

	Af-Am		Asians		Cauc		Hisp		Native Am		Others	
	M	SD	M	SD	M	SD	M	SD	M	SD	M	SD
Intrinsic	4.90*	1.14	4.60*	1.17	4.43	1.18	4.17	1.17	3.25	0	4.40	1.01
Extrinsic	5.65*	1.04	4.81	1.6	5.11	1.1	5.0	.80	5.25*	0	4.57	1.04
Organ-ization	3.92*	1.22	2.95	1.27	3.57	1.34	3.58	1.06	2.5	0	3.77**	1.37
Effort	5.98*	.65	5.53	1.26	5.83	1.04	5.29	1.02	5.75	0	5.84**	.88

* indicates highest mean score for subscale
** indicates second-highest mean score for subscale
Note. Af-Am = African-American; Cauc = Caucasians; Hisp = Hispanics; Native Am = Native Americans. These ethnoracial delineations were used by Pintrich and DeGroot (1990) on the original MSLQ.

Table 5

Mean Score of Observed Engagement in Two Seventh-Grade ELA Classrooms for One Month

Engagement component	Ms. Nash's Traditional Classroom	Ms. Nash's Flipped Classroom	Ms. Harper's Traditional Classroom	Ms. Harper's Flipped Classroom
Cognitive (effort, on task intellectual focus)	3.80	3.47	3.33	2.85
Behavioral (participation, physical actions in classroom)	3.66	3.52	3.63	2.57
Emotional (positive and negative reactions)	4.71	4.61	4.66	4.52

Note. Scored from 1-5 with 1=very disengaged; 2=disengaged; 3=neutral; 4=engaged; and 5=very engaged

The middle school students' responses to the flipped classroom seemed to confirm the findings of the high school students' in the pilot study. In short, the students could not quite decide if they liked the flip or not. There was no real consensus among the students, who ranged from expressing intense dislike of the method to enthusiastic support. Overall, the positive comments about the flip seemed to have a slight edge over the negative ones. The primary focus of the students, also, was their perceived engagement in their ELA class, and one student wrote on her survey, "Just don't bore us to death," after indicating that changing strategies frequently in an ELA class was more effective than implementing the same strategy every single day–including the flip. This student's poignant comment seemed to underscore the perceptions of her peers; they desired variety

and different methods and would not be happy with an ELA class that used the flip every day.

Qualitative Themes

The following themes emerged from the qualitative data:

1. Pacing--I like the pace OR I felt rushed. Students who responded positively about the self-pacing required for the flipped poetry unit said they "liked that there was more time to practice each poetry skill," and they liked the flipped unit "because I got to go at my pace/faster."

However, 12 students wrote comments expressing their frustration and dislike of the self-paced nature of the flipped unit. Since the unit took approximately 13 days, the students had a limited amount of time to watch the three videos and complete the eight stations connected with the videos. They were allowed to complete the stations in any order they chose, and as they completed each one, their teachers would mark or stamp their "poetry passports." However, this seemed to generate a great deal of stress for the students. A typical comment was:

> During the flip, I felt as if I didn't have enough time to finish what I needed, so I felt rushed. For this reason, I didn't really enjoy the flip and know I would have liked it more if we had more time.

2. I like the flip. Many students wrote generally positive comments about the flip and the parts that they particularly enjoyed. The overriding component that led to enjoyment was collaboration and the chance to work with their peers. The students expressed a clear preference for working with others, rather than working independently. One student wrote, "I liked that we got to work with partners." And another wrote, "I really enjoyed the flip. I liked learning new things at home. The projects were also very fun & interactive, especially the partner activities."

Other reasons for enjoying the flipped unit included the novelty of a new strategy ("This was a cool change.") and the variety of in-class activities ("I liked it because we where [sic] always doing something in class.").

3. I don't like the flip. The main reason students stated for disliking the flip was that they found it boring. They were not particularly engaged by the in-class activities and preferred the traditional method in which their teacher spoke to the whole class. One student wrote, "Honestly, I didn't like the flipped unit because I finished before most of classmates & I sat in my seat doing nothing for 1-5 whole class periods."

Other selected comments that indicated dislike of the flip were:

- "I think it did not challenge me at all so I was bored."
- "I think the flip classroom was extreamly (sic) boring and that we would learn much faster if we just learned normaly (sic)."
- "The flip made me focused on getting work done, but not learning."

4. I like having less homework. One of the main themes echoed in field observations, interviews, and the comments on the MSLQ was the lessened homework load. Students enjoyed having what they perceived to be "less" homework, and they also enjoyed the change of pace of watching videos as an assignment. Several students noted that this single factor was the biggest decider in whether they enjoyed the flip or not. One student wrote on the MSLQ, "It was better for me because I did not have to take more than 10 mins to do this HW and that was better because I get home very late at night."

5. I have reservations. School is school. Perhaps the most telling theme that emerged was one in which students indicated that they did not really care *how* their teachers taught, because it was all just school anyway. This was a major theme that emerged during the pilot study and in the pilot focus groups, and it was corroborated with the middle-school students. Whether a teacher talked directly to her class, asked students to watch a video, or created collaborative exercises, for these students, school was still school. This comment seemed to get at the heart of the matter for many, who said they were not overly fond of poetry or ELA or any subject actually. They were a large group of scholarly agnostics, who seemed to take little joy in academic pursuits and really just wanted to be somewhere else. They did not commit to one side of the fence or the other. A typical fence-sitter comment was: "I actually understand material better in the non-flipped classroom, but a flipped classroom is more fun to learn in."

Discussion and Implications

The quantitative findings were quite unexpected, as much of the research on the flipped classroom has indicated that students enjoyed learning with the method and were engaged by it (Barr, 2013; Gehringer & Peddycord, 2013; Johnson & Renner, 2012; Johnson, 2013; Jaster, 2013; Marcey & Brint, 2012).

The results of Research Question (RQ) 1 (What is the difference in engagement when middle grades students learn in a traditional ELA classroom and then a flipped ELA classroom?) indicated that overall student engagement decreased during the flip. However, this decrease in engagement corroborates the findings in the Strayer (2007) study, which demonstrated that students in the flipped classroom were less satisfied with the instruction they received and felt less connected to their professor. It also corroborates the findings of Jump (2013), who investigated undergraduate students in a flipped course and found that the participants expressed low levels of satisfaction with the course delivery.

The findings also support previous research that indicates girls tend to be more engaged than boys in ELA classes in general (Sadker, 2002; Osler & Vincent, 2003). However, most surprising was the quantitative finding that indicated African-American and Hispanic students could be the ethnoracial groups most engaged by the flipped method. Although the sample size was very small and generalization would be difficult, the finding corroborates research indicating that African Americans and Hispanics benefit from collaborative learning (Marshall, 2002; Rivera & Zehler, 1990; Strayhorn, 2008). In addition, the findings support Engagement Theory (Kearsley & Schneiderman, 1998), which posits that students learn best in a technology environment when the tasks are collaborative. However, the work of some other researchers indicates that all students benefit from collaborative learning within a technology environment (Downes & Bishop, 2012; Fahnoe & Mishra, 2013; Manfra & Lee, 2012), so it is inconclusive to point to the flipped method as a single, silver bullet that could engage students of color.

Qualitative findings supported the results of the pilot study, as students could not quite decide if they liked the method or not, and most agreed that it was not appropriate as an everyday tool for ELA. The results of RQ 2 (How do the follow-up case study interviews extend, refute, or illuminate the findings about middle grades ELA students' engagement with the flipped method?) were inconclusive. Although past research indicates that students have increased self-efficacy in a classroom environment that emphasizes choice (Turner & Meyer, 2000; Turner et al., 2002), it is possible that students in this study did not feel they had much choice– even though their teachers encouraged them to complete activities in any order. The simple fact that they were required to do all activities and did not have choice in terms of which poems to study or which activities to eliminate may have contributed to negative perceptions.

One explanation as to why students' interest began to wane as the flipped unit progressed is that the daily use of the flip may have begun to seem less like the familiar construct of "school" as the students understood it. They could operate in this new paradigm for a short while, but switching to this new way of teaching and learning may have challenged their notions of what "school" entailed. Middle-school age adolescents, in particular, are reticent to accept new academic ideas (Li & Lerner, 2011) and often fall prey to deficit thinking (Okagaki, 2006). This mental attitude and negative disposition, which is the hallmark of early adolescence, could make any new method or tool a hard sell.

Conclusions and Suggestions for Future Research

This study provides insights into students' perceptions on flipping the ELA classroom and offers a concentrated look at this specific content area. Rather than serving as one-stop shop or silver bullet for all educational woes, this study indicates that the flipped classroom should be considered as one potential tool in an ELA teacher's toolbox, rather than the only tool. The English language arts are a unique discipline and require surface-thinking, as well as deep learning (Fisher, Frey, & Hattie, 2016). This study demonstrates that students may not find all aspects of the technology-reliant flipped classroom engaging. In addition, it points to larger questions on race and gender and who, exactly, is particularly engaged by the flip. Many students indicated they enjoyed the traditional paradigm of teacher-directed learning and did not find self-study interesting or motivating.

More research is needed on which types of students are engaged by the flip, as well as a look at whether ethnicity, race, or gender play a part in engagement in the method. Although this study indicated that the small sample of African-American students were highly engaged by the flip, it is difficult to generalize these findings because the number of participants is so small. Future researchers may want to consider whether the flip and its collaborative aspects is engaging to students of color in particular. In addition, clear guidelines for flipping in an ELA classroom and considerations for best practices are needed. While this study demonstrated that some students prefer the traditional pedagogy of an ELA classroom, more research is needed to determine if the ELA content is particularly ill-suited for flipping and if the method works better in STEM classes. Guidelines for flipping would help future teachers construct lessons that are interesting and motivating.

At its best, the flipped classroom model holds promise for providing additional classroom time, a self-paced curriculum, and increased student agency. At its worst, it may disenfranchise some students and deepen their dislike of ELA in general as they struggle to navigate the content within a technology-assisted environment. The jury, it appears, is still out.

References

Ajayi, L. (2009). English as a second language learners' exploration of multimodal texts in a junior high school. *Journal of Adolescent & Adult Literacy, 52*(7), 585–595.

Alexander, P. A., & Winne, P. H. (2006). *Handbook of educational psychology,* (2nd ed.), New York, NY: Routledge Taylor & Francis Group.

Atkins, A. B. (2013). *Turning education on its head: A study of effectiveness and student satisfaction in the flipped high school classroom.* (Master's thesis). Salem College, Winston-Salem, NC.

Bhagat, K. K., Chang, C. N., & Chang, C. Y. (2016). The impact of the flipped classroom on mathematics concept learning in high school. *Educational Technology & Society, 19* (3), 134–142.

Baker, J. W. (2000). "The classroom flip": Using web course management tools to become the guide by the side. In J. A. Chambers (Ed.), *Selected Papers from the 11th International Conference on College Teaching and Learning*, (pp. 9-17). Jacksonville, FL: Florida Community College at Jacksonville.

Barr, S. (2013, March 13). Teachers find success flipping classes. *Midtown Raleigh News*, pp. 1M, 5M.

Berg, M. A. (2011). On the cusp of cyberspace: Adolescents' online text use in conversation. *Journal of Adolescent & Adult Literacy, 54*(7), 485-493.

Bergmann, J., & Sams, A. (2012a). *Flip your classroom: Reach every student in every class every day*. Eugene, OR: International Society for Technology in Education.

Bergmann, J., & Sams, A. (2012b). Before you flip, consider this. *Phi Delta Kappan, 94*(2), 25.

Berrett, D. (2012, 19 February). How 'flipping' the classroom can improve the traditional lecture. *The Chronicle of Higher Education*. Retrieved from http://www.chronicle.com/article/How-Flipping-the-Classroom/130857/

Clark, V. P., & Badiee, M. (2010). Research questions in mixed methods research. In A. Tashakkori, & C. Teddlie (Eds.), *Mixed Methods in Social and Behavioral Research,* (2nd ed.), (pp. 275-304). Thousand Oaks, CA: SAGE.

Creswell, J. W. (2012). *Qualitative inquiry and research design: Choosing among five approaches* (3rd ed.). Thousand Oaks, CA: SAGE Publications.

Creswell, J. W., & Clark, V. P. (2011). *Designing and conducting mixed methods research* (2nd ed.). Los Angeles, CA: SAGE Publications.

Davis, H. A., Summers, J. J., & Miller, L. M. (2012). *An interpersonal approach to classroom management*. Thousand Oaks, CA: Corwin.

Deed, C., & Edwards, A. (2011). Unrestricted student blogging: Implications for active learning in a virtual text-based environment. *Active Learning in Higher Education, 12*(1), 11-21.

Downes, J. M., & Bishop, P. (2012). Educators engage digital natives and learn from their experiences with technology. *Middle School Journal,* (May), 6-15.

Dredger, K., Woods, D., Beach, C., & Sagstetter, V. (2010). Engage me: Using new literacies to create third space classrooms that engage student writers. *Journal of Media Literacy Education, 2*(2), 1. Retrieved from http://digitalcommons.uri.edu/jmle/vol2/iss2/1/

Fahnoe, C., & Mishra, P. (2013, March). Do 21st century learning environments support self-directed learning? Middle school students' response to an intentionally designed learning environment. In *Proceedings of Society for Information Technology & Teacher Education International Conference* (pp. 3131-3139).

Ferreri, S. P., & O'Connor, S. K. (2013). Redesign of a large lecture course into a small-group learning course. *American Journal of Pharmaceutical Education, 77*(1), article 13.

Fisher, D., Frey, N., & Hattie, J. (2016). *Visible learning for literacy: Implementing the practices that work best to accelerate student learning*. Thousand Oaks, CA: Corwin.

Foldnes, N. (2016). The flipped classroom and cooperative learning: Evidence from a randomised experiment. *Active Learning in Higher Education*, *17*(1), 39-49.

Fredericks, J. A., Blumenfeld, P. C., & Paris, A. H. (2004). School engagement: Potential of the concept, state of the evidence. *Review of Educational Research, 74*(1), 59-109.

Frederickson, G. M. (2002). *Racism: A short history*. Princeton, NJ: Princeton University Press.

Frost, R. (1916). The road not taken. *Mountain interval*. New York, NY: Holt. Retrieved from https://books.google.com/books/about/Mountain_Interval.html?id=j6auAAAAIAAJ&printsec=frontcover&source=kp_read_button#v=onepage&q&f=false

Fulton, K. P. (2012). 10 reasons to flip. *Phi Delta Kappa, 94*(2), 20-24.

Gehringer, E. F., & Peddycord, B. W. (2013). The inverted-lecture model: A case study in computer architecture. *SIGSE '13*.

Gobry, P. E. (2012). What is the flipped classroom model and why is it amazing? *Forbes*, 11 December.

Hamden, N., McKnight, P., McKnight, K., & Arfstrom, K. (2013). The flipped learning model: A white paper based on the literature review titled "A review of flipped learning." Retrieved from http://researchnetwork.pearson.com/wp-content/uploads/WhitePaper_FlippedLearning.pdf

Herreid, C. F., & Schiller, N. A. (2013). Case studies and the flipped classroom. *Journal of College Science Teaching, 42*(5), 62-66.

Jaster, R. W. (2013). *Inverting the classroom in college algebra: An examination of student perceptions and engagement and their effects on grade outcomes*. (Doctoral dissertation, Texas State University-San Marcos, TX). Retrieved from https://digital.library.txstate.edu/handle/10877/4526.

Johansen, D., & Cherry-Paul, S. (2016). *Flip your writing workshop: A blended learning approach*. Portsmouth, NH: Heinemann.

Johnson, G. B. (2013). Student perceptions of the flipped classroom. (Master's thesis). Available from Electronic Theses and Dissertations, University of British Columbia. Retrieved from https://circle.ubc.ca/handle/2429/44070.

Johnson, L., & Renner. J. (2012). Effect of the flipped classroom model on a secondary computer applications course: Student and teacher perceptions, questions and student achievement. (Doctoral dissertation, University of Louisville., Louisville, KY)

Jump, L. (2013). 'Flipping the classroom': A theoretical and practical exploration. Compass: *The Journal of Learning and Teaching at the University of Greenwich, 8,* 1-13.

Kearsley, G., & Shneiderman, B. (1998). Engagement theory: A framework for technology-based teaching and learning. *Educational Technology, 38*(5), 20-23.

Khan Academy. [Website]. Retrieved from https://www.khanacademy.org.

Knezek, G., & Christensen, R. (1996). *Validating the computer attitude questionnaire (CAQ)*. Paper presented at the Annual Meeting of the Southwest Educational Research Association, New Orleans, LA.

Lage, M. J., & Platt, G. (2000). The internet and the inverted classroom. *Journal of Economic Education, 31*(1), 11.

Lage, M. J., Platt, G., & Treglia, M. (2000). Inverting the classroom: A gateway to creating an inclusive learning environment. *The Journal of Economic Education, 31*(1), 30-43.

Lajoie, S. P., & Azevedo, R. (2006). Teaching and learning in technology-rich environments. In P.A. Alexander, & P.H. Winne, (Eds.). *Handbook of Educational Psychology,* (2nd ed.), (pp. 803-821). New York, NY: Routledge.

Li, Y., & Lerner, R. M. (2011). Trajectories of school engagement during adolescence: Implications for grades, depression, delinquency, and substance use. *Developmental Psychology 47*(1), 233-247.

Manfra, M. M., & Lee, J. K. (2012). You have to know the past to (blog) the present: Using an educational blog to engage students in history. *Computers in the Schools, 29*(1-2), 118-134.

Marcey, D. J., & Brint, M. E. (2012). Transforming an undergraduate introductory biology course through cinematic lectures and inverted classes: A preliminary assessment of the CLIC model of the flipped classroom. In *Biology Education Research Symposium at the Annual Meeting of the National Association of Biology Teachers. (Vol. 12).*

Marshall, P. L. (2002). *Cultural diversity in our schools*. Belmont, CA: Wadsworth/ Thomson Learning.

Means, B. (2010). Technology and education change: Focus on student learning. *Journal of Research on Technology in Education, 42*(3), 285-307.

Merriam, S. B. (1998). *Qualitative research and case study applications in education: Revised and expanded from "Case study research in education."* San Francisco, CA: Jossey-Bass.

Meyer, S. (3 Dec., 2014). Salman Khan: The world's best-known teacher is learning to lead. *Forbes*. Retrieved from http://www.forbes.com/sites/stevemeyer/2014/12/03/salman-khan-the-worlds-best-known-teacher-is-learning-to-lead/#6cc07de6494f

Moran, C. M., & Young, C. A. (2013). Active learning in the flipped English language arts classroom. In J. Keengwe, G. Onchwari, & J. Oigara (Eds.), *Promoting Active Learning through the Flipped Classroom Model.* Hershey, PA: IGI Global.

Moran, C. M., & Young, C. A. (2015). Questions to consider before flipping. *Phi Delta Kappan, 97*(2), 42-26.

Okagaki, L. (2006). Ethnicity and learning. In P. A. Alexander, & P. H. Winne (Eds.), *Handbook of Educational Psychology,* 2nd ed., (pp. 615-634). New York, NY: Routledge.

Onwuegbuzie, A. J., & Leech, N. L. (2006). Linking research questions to mixed methods data analysis procedures. *The Qualitative Report, 11*(3), 474-498.

Osler, A., & Vincent, K. (2003). *Girls and exclusion: Rethinking the agenda*. London, UK: RoutledgeFalmer.

Pintrich, P. R. (1991). *A manual for the use of the Motivated Strategies for Learning Questionnaire (MSLQ)*. Ann Arbor, MI: National Center for Research to Improve Postsecondary Teaching and Learning.

Pintrich, P. R., & DeGroot, E. V. (1990). *Motivated Strategies for Learning Questionnaire*. Ann Arbor, MI: National Center for Research to Improve Postsecondary Teaching and Learning.

Reynolds, D. (Writer). (19 January, 2014). Flipped classrooms provide a new way of learning [Television series episode]. In *60 Minutes*. New York, NY: CBS Broadcasting. Retrieved from https://www.cbsnews.com/news/flipped-classrooms-provide-a-new-way-of-learning

Rivera, C., & Zehler, A. (1990). *Collaboration in teaching and learning. Findings from the Innovative Approaches Research project*. Arlington, VA: Development Associates, Inc.

Sadker, D. (2002). An educator's primer on the gender war. *Phi Delta Kappan, 84*(3), 235-240, 244.

Schutz, P. A., Chambless, C. B., & DeCuir, J. T. (2011). Multimethods research. In K. deMarrais, & S. Laplan (Eds.), *Foundations for research*: *Methods of inquiry in education and the social sciences* (pp. 267-281). Mahwah, NJ: Lawrence Erlbaum Associates.

Sciarra, D., & Seirup, H. (2008). The multidimensionality of school engagement and math achievement among racial groups. *Professional School Counseling, 11,* 218–228.

Skinner, E. A., & Belmont, M. (1993). Motivation in the classroom: Reciprocal effects of teacher behavior and student engagement across the school year. *Journal of Educational Psychology*, *85,* 571–588.

Stake, R. E. (1995). *The art of case study research*. Thousand Oaks, CA: SAGE.

Strayer, J. F. (2007). The effects of the classroom flip on the learning environment: A comparison of learning activity in a traditional classroom and a flip classroom that used an intelligent tutoring system. (Doctoral dissertation, Ohio State University, Chicago, OH). Retrieved from http://etd.ohiolink.edu/view.cgi/Strayer%20Jeremy.pdf?osu1189523914

Strayhorn, T. L. (2008). Examining the relationship between collaborative learning and perceived intellectual development among African-American males in college. *Journal on Excellence In College Teaching*, *19*(2-3), 31-50.

Sun, J. C., & Wu, Y. (2016). Analysis of learning achievement and teacher-student interactions in flipped and conventional classrooms. *International Review of Research In Open And Distributed Learning*, *17*(1), 79-99.

Swenson, L. M., & Strough, J. (2008). Adolescents' collaboration in the classroom: Do peer relationships or gender matter? *Psychology in the Schools*, *45*(8), 715-728.

TIME. (9 July, 2012). Can Salman Khan save education? Retrieved from http://content.time.com/time/magazine/article/0,9171,2118298,00.html?iid=sr-link2

Tucker, B. (2012). The flipped classroom: Online instruction at home frees class time for learning. *Education Next,* winter, 82-83.

Turner, J. C., Midgley, C., Meyer, D. K., Gheen, M., Anderman, E. A., Kang, J. (2002). The classroom environment and students' reports of avoidance strategies in mathematics: A multi-method study. *Journal of Educational Psychology*, *94*, 88-106.

Turner, J. C., & Meyer, D. K. (2000). Studying and understanding the instructional contexts of classrooms: Using our past to forge our future. *Educational Psychologist, 35*, 69-85

Turner, J. C., & Patrick, H. (2004). Motivational influences on student participation in classroom learning activities. *Teachers College Record, 106*, 1759-1785.

Vygotsky, L. (1978). *Mind in society: The development of higher mental process*. Cambridge, MA: Harvard University Press.

Wigfield, A., Byrnes, J. P., & Eccles, J. S. (2006). Development during early and middle adolescence. In P.A. Alexander, & P.H. Winne, (Eds.). *Handbook of Educational Psychology*, (2nd ed.), (pp. 87-113). New York, NY: Routledge.

Young, C. A. & Moran, C. M., (Eds.). (2017). *Applying the flipped classroom model to English language arts education*. Hershey, PA: IGI Global.

Youtube. [Website]. Retrieved from http://www.youtube.com