A CAUSAL-COMPARATIVE STUDY OF THE FLIPPED CLASSROOM: A BLENDED

LEARNING APPROACH TO IMPROVING PHONEMIC AWARENESS FOR

KINDERGARTEN ENGLISH LANGUAGE LEARNERS

by

Karen Wilson Twitty

Liberty University

A Dissertation Presented in Partial Fulfillment

Of the Requirements for the Degree

Doctor of Education

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APPROVED BY:

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ABSTRACT

The purpose of this study was to explore the effectiveness of using the flipped classroom model of instruction to increase English language learners' phonemic awareness compared to English language learners who received instruction using the business-as-usual approach. This quantitative perspective used a causal-comparative approach to measure achievement in developing phonemic awareness for students at risk due to lack of exposure to English language phonemes. The study involved 167 participants who underwent a pre-test to address any initial group differences. One group received flipped model instruction with curriculum-based video lessons, while the other received traditional in-class expository instruction without access to video lessons. Pre-test and post-test assessments from the Measure of Academic Progress (MAP) were utilized to gauge students' phonemic awareness progress. After four weeks, the researcher collected data, which was then analyzed using a two-way analysis of covariance (ANCOVA) to determine the impact of flipped instruction on phonemic awareness development. The results of the ANCOVA indicated a statistically significant difference in post-test scores, with students in the traditional instruction group outperforming those in the treatment group. No significant gender-based differences were observed, but a significant interaction emerged when considering setting and gender together. This research contributes to the body of knowledge concerning the effectiveness of flipped classroom instruction and its impact on academic achievement, particularly for English language learners. Future research recommendations include extended learner training, a year-long study, and the development of a modified flipped model tailored to younger learners.

Keywords: English language learners, flipped classroom model, blended learning, phonemic

awareness

Dedication

This dissertation is dedicated to my daughter, Brooke. May it stand as a reminder that there is no time limit on following your dreams. I am forever proud of you. I love you to infinity and beyond! Love you, Mom.

This work is also dedicated to the little girl who aspired to become a medical doctor but was deterred by the thought of blood or needles. She learned from The Wizard of Oz, that there was such a thing as a doctoral degree. She committed herself to the pursuit of earning such a degree one day. That day has finally arrived. You did it! Now, what's next?

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Analysis of covariance (ANCOVA)

English language learners (ELLs)

Measure of Academic Progress (MAP)

Rasch UnIT scale score (RIT)

Zone of proximal development (ZPD)

CHAPTER ONE: INTRODUCTION

Overview

This quantitative dissertation examined how the flipped classroom model, a blended learning approach, helped male and female English language learners (ELLs) in primary grades increase their phonemic awareness. In Chapter One, a brief background of English language learners' educational experience in America was examined, as well as societal implications for closing the achievement gap between ELLs and other learners. The history of the flipped model, the theory it was related to, and an explanation of why it is an effective method to use with English language learners are also presented in Chapter One. The chapter introduces the problem and purpose statement identifies for this study. Finally, Chapter One establishes the significance of the study, presents the research questions, and concludes by defining key terms relevant to the study.

Background

With 90% of English language learners failing to meet an acceptable standard for reading achievement, it is evident finding a new method of teaching that successfully meets their unique needs should be an urgent priority (He et al., 2018; Oxley & De Cat, 2019; Richards-Tutor et al., 2016). Thirty years of testing data have signaled traditional instructional approaches are not enough to help English language learners develop into proficient readers (Cassady et al., 2018; The Nation's Report Card, 2019; Richards-Tutor et al., 2016). When students underperform in reading, they demonstrate difficulty in other academic areas while students with stronger literacy skills are more likely to excel (Cassady et al., 2018; Richards-Tutor et al., 2016). Children underachieving in school are less likely to be college and career ready (McWhirter et al., 2019).

The continued failure to focus on developing a successful method of reading instruction will diminish the likelihood for ELLs and other students who struggle with reading to become contributing members of a global society (Huang & Hong, 2015; McWhirter et al., 2019; Oxley & De Cat, 2019). The advent of a reliable approach to support ELLs in developing proficient reading skills is critical to decreasing the achievement gap and preventing the increasing population from inundating the American job market as low-skilled workers seeking minimum wage positions.

English Language Learners in American Schools

The national interest is best served when children of immigrants receive the best possible education to help them become successful adults (Gutek, 2012). Early philosophers, from Confucius to Aristotle, extolled the value of having a well-educated citizenry to amplify the economic and social benefits of immigration (Gutek, 2012). Today's issues in educating ELLs stem from the overwhelming number of students from non-English speaking households (Cassady et al., 2018). Over half of immigrant families, 52%, reported they are proficient in speaking English (Budiman et al., 2022); however, 83% of immigrants age five and older reportedly speak a language other than English in their homes (Radford & Noe-Bustamante, 2019). Currently, almost 25% of students in public schools are ELLs, with this number, 5.0 million, projected to surpass that amount by the year 2025 due to immigration (Batalova et al., 2020; National Center for Education Statistics, 2023).

As a nation of immigrants, America has always educated students whose first language is not English (Washburne, 1953). As early as the 1890s, the number of immigrants in the U.S. was 14.8% of the population which was approximately 9.2 million immigrants (Budiman et al.,

2022). The children of immigrants were welcomed in the country's schools and, their

contributions to American culture appreciated (Gutek, 2012). However, there were laws in place

restricting the number of immigrants entering the country annually; by the 1960s the number of

immigrants had only risen to 9.7 million (Radford & Noe-Bustamante, 2019). In 1965,

congressional policy changes led to the removal of the national quota system in favor of

immigration laws (Budiman et al., 2022). Since the amendments to the Immigration and

Nationality Act of 1965, the total population of immigrants, authorized and unauthorized, has

more than quadrupled, reaching 44.4 million in 2017 (Budiman et al., 2022).

Societal Implications Concerning Closing the Achievement Gap

The issue is not where the children are from or how they have arrived. The problem is the

lack of a viable instructional strategy that can effectively reduce the gap in achievement for an

increasing population of non-English proficient children compared to their English proficient

peers. A poorly educated population can negatively impact educational systems, health care

services, social services, and every other aspect of American society (Gutek, 2012). To emerge

as proficient readers, ELLs require instruction that a) builds their vocabulary, b) provides time

for interactive reading, and c) allows them to make real world connections when they read (He et

al., 2018; Kazakoff et al., 2017).

Recent research suggests that using a blended learning platform can support development

of reading skills that are essential for all students but crucial for ELLs who are trying to acquire

English while learning to read in English simultaneously (Kazakoff et al., 2017). Blended

learning or hybrid learning is an instructional model that balances face-to-face instructional time

with instructional time online (Kazakoff et al., 2017; Santikarn & Wichadee, 2018). The flipped

classroom model of instruction is an example of a blended learning approach that encourages active learning by integrating face-to-face and online instruction (Santikarn & Wichadee, 2018).

History of The Flipped Classroom Model

The flipped classroom model serves as a popular mode of instruction for secondary and higher levels of education that has been heavily researched since 2012 (Aidinopoulou & Sampson, 2017; Bergmann & Sams, 2016; D'addato & Miller, 2016; Hodges & Weber, 2015; Kostaris et al., 2017). The model increases the class time needed for the following: a) supporting students in completing difficult tasks, b) providing hands on tasks and activities that require higher level thinking skills, and c) cultivating positive relationships and collaboration among peers (D'addato & Miller, 2016; Hung, 2014; Schmidt & Ralph, 2016; Turan & Akdag-Cimen, 2019; Unal & Unal, 2017). The flipped classroom creates an environment that encourages students to become more independent as learners (Aidinopoulou & Sampson, 2017; Hung, 2014; Unal & Unal, 2017). The level of autonomy required is regarded in a positive light for middle and senior secondary as well as university level education. However, the requirement for self-regulation may account for the reluctance of educators to use the model with early primary students (Turan & Akdag-Cimen, 2019). Despite the potential obstacles, the flipped model has continued to grow in popularity in use with younger learners due to studies that assert its effectiveness in improving academic achievement (Kostaris et al., 2017; Schmidt & Ralph, 2016; Unal & Unal, 2017).

Recent scholarship supported the implementation of the flipped model in English and language arts (ELA) for ELLs in higher education (Santikarn & Wichadee, 2018; Turan & Akdag-Cimen, 2019). The use of the flipped model in non-STEM related courses is relatively

new (Bergmann & Sams, 2016). This novelty has created an opportunity to contribute to the literature about the efficacy of using the flipped classroom model for reading instruction with students at the elementary level. It has also provided an opening to study the flipped classroom and its potential to arise as a viable and replicable instructional strategy for that population.

There has been research to study the benefit of using a blended learning approach to teach reading and language instruction to ELLs in the elementary setting (Kazakoff et al., 2017). What has not been studied yet is the potential for the explicit use of the flipped model as a blended learning approach with primary level ELLs who are at risk of underperformance in Reading. There is a dearth of literature that examines teacher attitudes and perceptions towards the flipped model of instruction. There was also a lack of scholarly articles with scientific evidence concerning the use of the flipped classroom model to facilitate reading instruction for at-risk ELLs.

Theoretical Support for the Flipped Model

The flipped model is grounded in more than one theory. Classical teaching methods (e.g., the lecture format) play an important role in the flipped classroom as the transmission of knowledge from teacher to pupil is an essential first step in the model (Gin & Hearn, 2019). Although it is recorded and moved away from the classroom, direct instruction or the lecture portion is the means through which the content of the lesson is delivered to the students (Bergmann & Sams, 2016; Schmidt & Ralph, 2016).

Vygotsky's Sociocultural Theory, which has roots in constructivist theory, described learning as a social process; children learn from their social environment as well as people (Schunk, 2016). Cultural objects (e.g., books, machines) and social institutions (e.g., churches,

schools) work with social interactions to impact children's cognitive growth and development (Schunk, 2016). Although Vygotsky could not predict the advent of technology as a tool to be used to help children learn, using videos from the internet would fit Vygotsky's criteria as being part of a child's social environment (Schunk, 2016).

Vygotsky (1986) believed learners co-constructed knowledge with the help from someone with advanced expertise in the area being studied (Gin & Hearn, 2019; Schunk, 2016; Woolfolk & Perry, 2012). Social constructivism involved guiding the learners to areas in their zone of proximal development (Gin & Hearn, 2019). The zone of proximal development (ZPD) is a term that refers to the area where a learner needs help from adults or peers to be successful (Gin & Hearn, 2019; Schunk, 2016; Woolfolk & Perry, 2012). This teacher-guided but learner-centered approach captures the essence of constructivist pedagogy (Gin & Hearn, 2019) as does the flipped classroom model.

Vygotsky believed the social interaction that occurs in the teaching and learning dynamic is essential to building knowledge (Schunk, 2016; Woolfolk & Perry, 2012). For Vygotsky, cognitive development was the result of a child's social activity with adults and peers (Schunk, 2016; Woolfolk & Perry, 2012). Following this precept, the flipped model devotes most of the class time to group activities facilitated by the instructor, peer collaborations designed to support learning, or one-on-one learning sessions with the teacher. The opportunities for social learning created by the flipped classroom are compatible with Vygotsky's belief that the human factor was key to human development (Schunk, 2016; Woolfolk & Perry, 2012).

Problem Statement

Evidence-based research supports the use of flipped classroom instruction to improve reading achievement for ELLs at secondary and university levels (Hung, 2014; Lo & Hew, 2017; Turan & Akdag-Cimen, 2019). The research indicates students receiving the flipped model of instruction outperformed students receiving the traditional expository instruction (Lo & Hew, 2017; Turan & Akdag-Cimen, 2019; Çevikbaş & Argün, 2017). Research also confirms the flipped model is being used in the elementary setting (Bergmann & Sams, 2016; D'addato & Miller, 2016; Lo & Hew, 2017). Research also indicates gender differences exist between males and females with results showing that females consistently outperform males in reading achievement at every grade level (Daly & Corcoran, 2019; Harper & Pelletier, 2007; Nalipay et al., 2019; Reilly et al., 2019). Further, the gap between male and female reading performance begins in kindergarten where the female advantage persists and remains pronounced throughout elementary, middle, and high school (Daly & Corcoran, 2019; Reilly et al., 2019). Using the flipped model with students in elementary grades, specifically kindergarten, may result in a more efficient use of classroom time, as well as promote better learning outcomes and cooperative learning experiences for students regardless of gender (Aidinopoulou & Sampson, 2017; Lo & Hew, 2017).

The flipped classroom model has been used to teach reading at every level of education (Bergmann & Sams, 2016); however, it has been virtually untested as a pedagogical solution with potential to improve phonemic awareness for ELLs in kindergarten or to reduce the discrepancy in achievement between the genders. There have been many studies conducted using the flipped model of instruction at every level of education (Aidinopoulou & Sampson, 2017; Bergmann & Sams, 2016; D'addato & Miller, 2016; Kostaris et al., 2017). What has not been

fully studied is the effectiveness the flipped classroom model of instruction has on improving reading achievement for ELLs with respect to gender in primary grades (Cassady et al., 2018; Garcia-Perez & Johnson, 2017; Miller et al., 2017; Oxley & De Cat, 2019; Vaughn et al., 2017; Yochai, 2019). The problem is that while there are growing numbers of studies in higher levels of education using the flipped model to improve reading skills for ELLs, little to no quantitative studies have been conducted to develop understanding on using the flipped model to improve reading skills for ELLs in early elementary grades and address the gender gap in reading achievement (Aidinopoulou & Sampson, 2017; Bergmann & Sams, 2016; D'addato & Miller, 2016; Kostaris et al., 2017).

Purpose Statement

The purpose of this quantitative, causal-comparative, nonequivalent control group, pre-test/post-test design was to investigate the effectiveness of the flipped classroom model to promote-phonemic awareness for kindergarten participants who are English language learners in a school district in a midwestern state. The participants consisted of kindergarten students in preexisting school groups (classrooms). Each classroom of participants was assigned to either a treatment group or a control group. In this quantitative study, the independent variable, teaching method, was presented in two forms: traditional expository instruction and the flipped classroom model of instruction. The teaching method is the instructional approach used by teachers to present concepts and skills in a manner that leads students to understand and master the curricula (Ormrod, 2011). Expository instruction is the traditional teaching method, featuring passive student involvement, where instructors use direct instruction and textbooks to present information during class time and assign tasks for independent completion away from the

classroom (D'addato & Miller, 2016; Gin & Hearn, 2019; Ormrod, 2011; Unruh et al., 2016). The flipped classroom model is an instructional model, fostering active student participation, that moves the lecture portion of instruction outside of the classroom using digital media and moves difficult tasks previously reserved for homework into the classroom allowing for interactive activities with peers and teacher support (Bergmann & Sams, 2016; D'addato & Miller, 2016; Unruh et al., 2016). A second independent variable was the gender of the participants. In this study, the dependent variable was phonemic awareness. Phonemic awareness is the ability to relate or connect sounds with the letters that represent sounds that build words (Schunk, 2016). The current research sought to address this gap in the literature and test the efficacy of using the flipped classroom model as a better alternative than the traditional expository approach to improve phonemic awareness in students with little exposure to the English language.

Significance of the Study

This study holds significance in the application of Vygotsky's Sociocultural Theory (Schunk, 2016). Through technology, direct instruction is moved to another venue (i.e., a home or an in-class station) where the student can construct knowledge with digital support from the teacher. The teacher has time to engage learners in meaningful activities with peers who help them connect what they are learning to the world around them (Bergmann & Sams, 2016; Gin & Hearn, 2019; Schunk, 2016). Thus, a new instructional strategy may be added in support of this constructivist learning theory.

The increase in culturally and linguistically diverse populations necessitates the need for consistently effective instructional techniques designed to improve reading comprehension. This study adds to the literature that examines elementary reading programs with the intent of finding

practices that best support reading achievement for ELLs and other students at risk due to poor

reading performance. The results from this study may support efforts to improve reading skills

for English language learners, students with learning disabilities, African American students,

Hispanic students, and students from lower socioeconomic environments. This is an important

study for the above demographics as their test scores indicate they are at risk for academic failure

due to deficient reading skills (The Nation's Report Card, 2019). School districts that apply the

findings of this research to their curriculum will be able to provide more suitable instruction to

their students. Administrators will be able to provide the necessary professional development to

teachers that will allow them to use the flipped classroom model efficiently. Teachers will apply

strategies that lead to improved performance in reading skills by students.

Over the last three decades, data showing the consistent failure of reading instruction

and strategies for English language learners in American schools (Cassady et al., 2018; Cheung

& Slavin, 2005; The Nation's Report Card, 2019) has given researchers, policy makers, and

practitioners many reasons to be concerned with finding literacy strategies for students who

struggle with reading. While there are some careers that do not rely on reading, most professions

and jobs require reading in some capacity (McWhirter et al., 2019). The findings of this study

will benefit society since reading skills, beginning with phonemic awareness, are fundamental

for students to achieve success throughout their education, and their adult lives especially when

they enter the workplace. The results may lead educators to a new approach to teaching reading

to ELLs and other students who underperform in reading.

Research Question

RQ: Is there a significant difference among phonemic awareness scores of male and female kindergarten English language learners who receive flipped classroom instruction and those who do not while controlling for pre-test scores?

Definitions

1. *Blended Learning* – An instructional model that balances face-to-face instructional time with instructional time online; also referred to as hybrid learning (Santikarn & Wichadee, 2018).

2. *Constructivism* – A learning theory that contends learners form or build knowledge through their experiences (Schunk, 2016).

3. *English language learners* – A heterogenous group who come to school speaking a language at home other than English, vary in their level of fluency in English, and may be from immigrant families or born in the U.S.; also known as ELLs, English learners, or ELs (Cassady et al., 2018; Kazakoff et al., 2017).

4. *Expository instruction* – Traditional teaching method, featuring passive student involvement, where instructors use lectures and textbooks to present information during class time and assign tasks for independent completion away from the classroom (Gin & Hearn, 2019; Ormrod, 2011).

5. *Flipped classroom model* – An instructional model, fostering active student participation, that moves the lecture portion of instruction outside of the classroom and moves difficult tasks previously reserved for homework into the classroom allowing for interactive activities with peers and teacher support (Bergmann & Sams, 2016).

6. *Phonemic Awareness* – A process that occurs in language acquisition in which the capacity to perceive phonemes which are the smallest units of speech develops (Schunk, 2016).

7. *Scaffolding* – The support and guidance provided by teachers or accomplished peers that are necessary for a learner to perform tasks in their ZPD and to progress intellectually (Woolfolk & Perry, 2012).

8. *Social Constructivism* – A learning theory that emphasizes the importance of interactions and relationships with others in helping learners create or construct knowledge (Schunk, 2016).

9. *Teaching Method* - The instructional approach used by teachers to present concepts and skills in a manner that leads students to understand and master the curricula (Ormrod, 2011).

10. *Zone of proximal development* – The range of tasks where learners require support and guidance from the teacher or peers to accomplish. Also called ZPD (Woolfolk & Perry, 2012).

CHAPTER TWO: LITERATURE REVIEW

Overview

A comprehensive literature review sets a foundation for the study and provides a background on how it relates to the use of the flipped classroom model of instruction with ELLs. This chapter begins with an in-depth review of Vygotsky's Sociocultural Theory (1986), addressing how it guides and frames the topic of study. It also examines the link to the constructivist philosophy of educators like Dewey and Piaget to further establish the theoretical framework for the research. This chapter explores the history of educating ELLs in this county with consideration given to their unique circumstances and the difficulty they face navigating the academic world in a language different from their native tongue. To develop a complete understanding of the flipped model approach, the following portion of the chapter provides detailed information on the genesis of the flipped classroom model to include its roots in differentiated instruction and strategies for initiating the flipped model. The remainder of the review synthesizes former and current research that addresses flipped classroom instruction and achievement for students in K-12 and university classrooms. The review details the abundance of studies examining the effect of using the flipped model on reading achievement for English language learners in secondary and higher levels of education, while clearly identifying the absence of analogous research for students at elementary levels. In addition, this literature review examines data that advocates for stronger instructional protocols to teach ELLs and other children who may have difficulty mastering the foundational skills that are essential for learning to read. It identifies the current research involving the flipped model and ELLs as well as the impact of Covid 19 on the educational landscape as it relates to incorporating digital platforms

into the system of education. The chapter concludes with a summary of the literature and establishes a need for research on the effect of the flipped method on phonemic awareness scores for ELLs in elementary grades with respect to gender.

Theoretical Framework

The intent of this causal-comparative, pre-test/post-test design study was to determine if the phonemic awareness scores of male and female kindergarten ELLs who received the flipped classroom method of instruction showed greater improvement than the scores of those who received traditional expository reading instruction. Vygotsky's Sociocultural Theory, which suggests children learn best from social interactions from their teachers and peers (Schunk, 2016; Vygotsky, 1986), provided the theoretical framework for this study. The flipped mode of instruction is a form of blended learning that allows teachers to deliver private, personalized digital lessons to be viewed outside of regular class time while reinforcing the lesson using interactive activities that involve the targeted learners and their peers during class. This approach earned the flipped moniker because the presentation of new material happens away from class while the practice or homework is completed during class. With the flipped instructional technique, the learner, in "Vygotskian" style, is dependent on the teacher to introduce new concepts and on experienced peers to help deepen their understanding until they can take responsibility for their own learning (John-Steiner & Mahn, 1996).

The Flipped Model & Constructivist Philosophy

The concept behind the flipped model approach echoes the constructivist philosophy of educators, like Piaget, Dewey, and Vygotsky who believed that teaching and learning should be student centered and allow the student to construct knowledge based on their experiences (Gin &

Hearn, 2019; Lane-Kelso, 2015; Schunk, 2016; Vygotsky, 1986). Piaget believed knowledge was constructed through social interactions, but that student initiated personal experiences were the most important factors that lead to learning (Schunk, 2016). Dewey supported the idea that learning and doing go hand in hand but stressed a student-centered teacher-directed approach (Lane-Kelso, 2015; Schunk, 2016). Vygotsky's (1986) sociocultural learning theory supported the idea that learning happens best when activities are teacher-directed and student-centered but emphasized it was the collaborative social interactions during the activities that had the greatest impact on learning (Gin & Hearn, 2019). The flipped classroom approach supports student-centered lessons that facilitate active learning by offering experiences that allow students to encounter a new concept through video lectures and other forms of direct instruction from their teachers (Bergmann & Sams, 2016; Lane-Kelso, 2015; Schmidt & Ralph, 2016). They are then able to construct knowledge through collaboration with peers, research, and investigations conducted in class with guidance and support from their instructors (Bergmann & Sams, 2016; Lane-Kelso, 2015; Schmidt & Ralph, 2016; Unal & Unal, 2017).

Having removed the lecture time from the classroom, the teacher can use the free class time to individualize instruction with a group activity or another personalized lesson (Bergmann & Sams, 2016; Lane-Kelso, 2015; Schmidt & Ralph, 2016; Unal & Unal, 2017). The flipped setting allows teachers to pinpoint learning challenges that require individualized attention and help the learner (Bergmann & Sams, 2016). The assistance given to a student to support their development is called scaffolding (Gin & Hearn, 2019; Schunk, 2016; Vygotsky, 1986; Woolfolk & Perry, 2012). Teachers use scaffolding to meet students at their level of readiness with the goal of moving them to grade level (Vygotsky, 1986). Scaffolding can come from adults

or other students who have already mastered the desired skill (Gin & Hearn, 2019; Schunk, 2016; Woolfolk & Perry, 2012). In the flipped classroom, learners can construct knowledge by connecting what they know and what they are doing to what they are learning from the teacher or their peers in the social environment (Woolfolk & Perry, 2012). In the flipped setting, students can also display mastery in authentic ways with assessment that can be formative or summative (Unal & Unal, 2017).

Using the flipped approach, the teacher is driving the lesson in the general direction desired; however, it is the needs of the individual learner that dictate the stops along the way (Bergmann & Sams, 2016; Schmidt & Ralph, 2016; Unal & Unal, 2017). This allows the teacher to provide meaningful learning experiences within what Vygotsky (1986) described as the learner's "zone of proximal development (ZPD)." The ZPD is important because it provides teachers with a starting place for individualizing instruction (Vygotsky, 1986). Once the ZPD has been determined, it is possible for learners to advance and grow according to their individual needs (Vygotsky, 1986).

The flipped method of instruction employs this strategy by using videos to teach information within the learner's ability range then expanding the range with scaffolding in a dynamic setting to introduce more difficult concepts (Bergmann & Sams, 2016). Teachers can assess students' readiness and customize the video lessons to meet their individual needs (Chen-Hsien et al., 2017; Hedges & Weber, 2017; Lo & Hew, 2017). For example, if the lesson objective is to identify the short 'a' vowel sound, students with little to no English would watch a video that presents the letter and its sound using words and pictures (e.g.: 'A' says /a/ apple, ant, ax). The video would show the letter and present the sound, then have students repeat the sound.

Students with more experience with the language may use a video that requires them to find and list the words containing the short vowel 'a' sound in sentences. Meanwhile a lesson for an advanced group of students may require them to generate a list of words with short 'a' to use in original sentences.

Activities in class would bring the students together in small cooperative learning groups to present what they learned from the video with their peers. The modest group would present the short vowel and the sound it makes. The next group would introduce more words that use the sound while the advanced group would share their original sentences and require students to find the short 'a' word(s) in their sentences. The teacher could rotate to provide scaffolding within the groups or pull students for one-on-one remediation or enrichment to increase their respective ZPDs. Formative assessment would reveal when students are able to accomplish a skill that they previously needed support with independently (Erbil, 2020).

The flipped classroom provides more meaningful instruction for individual learners because the video lessons can be personalized to fit students' unique ZPDs. In addition, students have unlimited access to view the videos which increases the time available for them to practice and learn concepts (Bergmann & Sams, 2016; Erbil, 2020). The flipped model not only provides opportunities for students to reinforce what they have learned, but to advance in learning via participation in an active learning environment. The flipped classroom provides the social interaction Vygotsky deemed necessary for the ongoing process of development of a student's ZPD (Erbil, 2020; Schunk, 2016; Vygotsky, 1986). In this dynamic setting, students benefit from being able to learn at their own pace while the video lesson is reinforced with support from experienced peers and the teacher (Chen-Hsien et al., 2017; Erbil, 2020; Hung, 2014). This type

of individualized instruction, also referred to as differentiation, is not new, nor is it unique to

Vygotsky's theory or the flipped method. The next section explores the evolution of

differentiation as it relates to the flipped classroom method.

Differentiated Instruction

The history of differentiation can be traced back to the era of the one room schoolhouse

where lessons were designed for students of various ages, aptitudes, and languages to match their

individual abilities (Birnie, 2015; Tomlinson, 2016; Washburne, 1953). This early, student-

centered approach was born out of necessity as there was only one teacher who functioned as a

guide to encourage and oversee the students' studies (Birnie, 2015; Tomlinson, 2016;

Washburne, 1953). As the country grew, class sizes grew, and the one room school gave way to

multiple classrooms where students were grouped according to age instead of ability (Birnie,

2015; Tomlinson, 2016; Washburne, 1953). Washburne (1953) surmised educators failed to

address individual identities and abilities that, if realized, would have led to academic success.

Having examined the failure of abandoning individualized instruction, Washburne (1953)

identified three critical factors when planning lessons: a) the tasks must be challenging yet

attainable, b) the level of success must be in proportion to the level of effort, and c) the need for

individualization to help all children achieve mastery within their ability.

Tomlinson (2016), a leading authority on differentiation since the 1990s, described

differentiated instruction as a method of providing students with specialized content designed for

individual success without assuming all students have the same academic requirements. These

custom designed lessons allow the classroom teacher to meet students where their interests and

readiness levels collide (Tomlinson, 2016). In addition to Tomlinson's research, other educators,

(Birnie, 2015; Schunk, 2016; Van Brummelen, 2009; Washburne, 1953) urged educators to vary

the curriculum to meet the specific and varied needs of students. Research indicated the typical

classroom tends to have three to four different ability ranges where the same lesson can be taught

without needing separate plans (Birnie, 2015; Schunk, 2016; Tomlinson, 2016; Washburne,

1953). The teacher only needs to modify and refine approaches and techniques to meet the

different levels of learning (Birnie, 2015; Tomlinson, 2016). Creating an effective learning

environment and maintaining multidimensionality is an essential characteristic that respects the

diverse ability levels of students (Schunk, 2016; Tomlinson, 2016).

The phrase multidimensional classroom supports the idea that differentiation should be

the standard for the typical classroom (Schunk, 2016; Tomlinson, 2016). Since learners are

multidimensional, it is reasonable to support the idea that the classroom should match the wide

variety of abilities, skills, and talents typically found in a single room (Bergmann & Sams, 2016;

Birnie, 2015; Schunk, 2016; Tomlinson, 2016; Washburne, 1953). Schunk's (2016) belief that

the multidimensional classroom would boast different students working on different tasks at the

same time validated the intended research as it conveyed the importance of giving students tasks

that match their capabilities. Since the research indicated that differentiation is beneficial to all

students, it should be incorporated into curriculum and instruction (Schunk, 2016; Tomlinson,

2016). However, despite the findings, the research revealed not all educators differentiate their

instruction (Schunk, 2016).

Most educators assert the effectiveness of differentiated instruction, yet it is still difficult

to find it being used to its fullest capacity in many classrooms (Bergmann & Sams, 2016;

Tomlinson, 2016). The ability to harness the power of technology in the digital era may give

educators more support teaching in multidimensional classrooms (Bergmann & Sams, 2016; Schunk, 2016). The flipped classroom model blends technology and differentiation to reach learners at their individual readiness level. This hybrid approach to teaching may be the secret to help teachers redefine education for the 21st century and beyond if teachers are given the required professional development (Bergmann & Sams, 2016; Dixon et al., 2014; Schunk, 2016; Tomlinson, 2016). Teachers with greater levels of teacher efficacy in differentiation are more likely to differentiate their instruction than teachers with lower levels –an indication that some teachers may need training and support to help them differentiate their instruction (Dixon et al., 2014; Schunk, 2016).

The nation's classrooms have been increasing in diversity since the passage of the Individuals with Disabilities Education Act (IDEA) and No Child Left Behind legislation (NCLB); however, neither preservice nor in-service teachers have been properly trained or equipped to respond to the influx of students with diverse educational needs (Behan, 2017; Dixon et al., 2014). One might assume that teacher preparation programs are the perfect setting for providing the necessary training in differentiating instruction for preservice teachers. Many programs only present differentiation as one of a multitude of curriculum and instruction theories that can be used in the classroom (Dixon et al., 2014). The perfunctory introduction is not enough to build mastery in using the strategy for preservice teachers, nor are the half-day professional development sessions designed to give in-service teachers a working understanding of how to differentiate lessons (Dixon et al., 2014). Teacher training programs should include courses dedicated to differentiation and/or embed the differentiated perspective in all curriculum and instruction courses (Dixon et al., 2014). School districts and administrators should view

professional development for differentiation as an ongoing process (Dixon et al., 2014; Tomlinson, 2016). Allowing teachers to share ideas, build lessons together, observe and provide feedback to one another will empower teachers to develop a sense of efficacy and an understanding of the differentiated process needed for success (Dixon et al., 2014; Tomlinson, 2016).

When considering teacher efficacy as it relates to differentiation, one should contemplate the role technology can play in increasing efficacy as well (Dixon et al., 2014; Parkay et al., 2014). Technology can assist the classroom teacher in individualizing instruction across disabilities, language barriers, and learning differences (Parkay et al., 2014). Having technology tools that allow educators to provide personalized learning environments for all students may increase teacher efficacy and differentiation in the classroom (Parkay et al., 2014). The benefit of instructional methods with components that integrate technology have been studied with favorable results (Brighton et al., 2015; Chai et al., 2016; Cheung & Slavin, 2005; and Okolo & Diedrich, 2014; Padron & Waxman, 1996; Smith & Throne, 2007). English language learners (ELLs) and students with disabilities encounter comparable challenges related to comprehension. In their work, Padron and Waxman (1996) delve into the impact of technology on enhancing instruction and learning experiences for at-risk students and ELLs. Their study examines research outcomes revealing lower academic performance among ELLs in comparison to their non-ELL counterparts in various domains such as reading, writing, mathematics, and science. These findings underscore the necessity for additional research investigating the effects of technology on students facing academic challenges and ELLs (Padron & Waxman, 1996). Ryoo (2014) conducted an examination of blended instructional approaches aimed at enhancing the

comprehension and retention of scientific language and concepts, particularly for English language learners (ELLs). The findings indicate that both ELLs and non-ELLs who were exposed to the blended instruction and everyday English approach exhibited a more profound grasp of scientific concepts compared to students instructed through traditional textbook methods. Consequently, Ryoo's study concludes that the integration of technology and everyday language within science instruction holds the potential to elevate students' attainment of higher-level concepts, benefitting learners across diverse backgrounds (Ryoo, 2014). These studies delineated the steady appeal of instructional approaches that integrate differentiation and technology. Many of the studies addressed the implications for using instructional technology and differentiation for ELLs and students who have trouble with reading comprehension and skills (Brighton et al., 2015; Cassady et al., 2018; Chai et al., 2016). Some of these studies addressed the lag experienced by ELLs and focused explicitly on using technology and differentiated instruction to help ELLs improve academically (Cheung & Slavin, 2005; Padron & Waxman, 1996; Ryoo, 2014; Smith & Throne, 2007).

Smith and Throne (2007) offer a succinct overview of differentiated instruction, followed by an exploration of research on the integration of technology and its associated advantages. The study is based on two premises. Foundationally, it relies on the understanding that differentiated instruction is a pedagogical approach centered on employing diverse teaching strategies to provide students with multiple pathways for absorbing and processing information, comprehending concepts, and conveying their learning. The second premise requires accepting the concept that technology tools can play a crucial role in facilitating effective instruction and establishing personalized learning environments in which students can engage with software,

engage in research, generate educational artifacts, and communicate with individuals beyond their immediate school community (Smith & Throne, 2007). Both differentiated instruction as well as technology tools hold significant relevance in 21st-century education, commonly referred to as digital age learning (Bergmann & Sams, 2016; Smith & Throne, 2007; Tomlinson, 2016). Smith and Throne (2007) anticipated the synergistic combination of differentiated instruction and technology would become increasingly evident to educators who successfully leveraged technology within a differentiated learning environment.

Cheung and Slavin (2005) conducted a review of research on the effectiveness of educational technology applications in improving reading achievement for students who have difficulty learning to read. The researchers found that technology has a small, but positive effect on reading achievement in modest readers (Cheung & Slavin, 2005). They noted, however, that students receiving the teacher led instruction portion of the program displayed better results than students who received computer assisted instruction alone (Cheung & Slavin, 2005). Still, the implications of blending technology with differentiated instruction are promising (Chai et al., 2016). Technology functions as a highly motivating and interactive instrument that easily lends itself to the personalization of instructional approaches, aligning with students' learning preferences, interests, and readiness levels. Further, technology can assist educators in shaping and delivering instruction tailored to the unique needs of all students, enhancing critical thinking, enabling research and presentation endeavors, and promoting improved communication (Smith & Throne, 2007). These findings validate the current study which sought to examine the effect of using a blended approach on student achievement.

Challenges Integrating Technology and Differentiation

Although the research indicated teachers with greater levels of teacher efficacy in differentiation were more likely to differentiate their instruction, some teachers were just not able to adjust their lessons to the specific needs of their students (Dixon et al., 2014; Tomlinson, 2016). Others felt the process was too time-consuming, while some remained overwhelmed by the concept even with training (Dixon et al., 2014). Other responses indicated a refusal to implement differentiation into the classroom claiming it created an unproductive awareness of differences between students or that the teacher simply did not see a need for it (Dixon et al., 2014). There were some who remained disinterested in the process despite technology making it easier to facilitate (Dixon et al., 2014). Consistent with these findings, Hutchison and Woodward (2014) emphasized the persistent challenge faced by educators in effectively integrating digital technology into instruction, despite the recognized advantages and permanence of technology in education. The researchers underscore the significance of technology integration to facilitate differentiated learning opportunities (Hutchison & Woodward, 2014). The COVID-19 pandemic brought about significant transformations in various social and educational contexts (Latorre-Cosculluela et al., 2021). The swift and far-reaching changes resulting from the global crisis necessitated a heightened level of adaptability in both students and educators. As these responses are now in place and continue to be used, the application of educational strategies and methods must demonstrate a high degree of flexibility to effectively address evolving needs and challenges (Latorre-Cosculluela et al., 2021). The next section will continue the discussion of technology enhanced differentiation, focusing specifically on the genesis of the flipped model and strategies for initiating this hybrid form of differentiated instruction.

Origination of the Flipped Classroom Model

In 2012, high school chemistry teachers, Jonathan Bergmann and Aaron Sams, began video recording their lectures to support students who missed classes due to school related events (Bergmann & Sams, 2016; Lane-Kelso, 2015; Schmidt & Ralph, 2016). They noticed immediate positive effects from switching instructional time from the classroom into students' homes and allowing students to complete homework and other related tasks at school during class time (Bergmann & Sams, 2016). The teachers discovered they could also pinpoint areas where students were having trouble and support them on an individual level (Bergmann & Sams, 2016). The duo combined the concept of individualized instruction with a technological tool to innovate a blended learning model that allowed them to differentiate instruction on a personal level (Bergmann & Sams, 2016; Lane-Kelso, 2015). The idea of flipping was not completely unheard of in education (Hodges & Weber, 2015; Lane-Kelso, 2015).

Evidence of flipping instruction can be traced back twenty years before the Bergmann and Sams' model (Hodges & Weber, 2015; Lane-Kelso, 2015). A precursor of the model referred to as the inverted classroom was used in university economic classes in the 1990s (Hodges & Weber, 2015). The term flipping was first used by a teacher and technology expert named Karl Fisch who called his version of the inverted classroom the "Fisch flip" (Logan, 2015). Fisch, however, believed Bergmann and Sams should be credited for the updated terminology to acknowledge their unique version of flipping compared to older versions (Lane-Kelso, 2015; Logan, 2015). The concept of inverting or flipping stemmed from Dewey's learning by doing philosophy which encouraged using class time to focus on application (Gin & Hearn, 2019; Lane-Kelso, 2015; Logan, 2015; Schunk, 2016). The technological component accompanied by teacher explanation and the emphasis on direct teacher instruction is what made

Bergmann and Sams's model exceptional not to mention popular in the digital age (Lane-Kelso, 2015; Logan, 2015).

Research by Lo and Hew (2017) agreed that the twist by Bergmann and Sams was special and clarified the difference between the inverted model of the past and the flipped model. According to Lo and Hew (2017), although the names are often used interchangeably, the critical difference is that the inverted model required students to study material independently prior to class without the benefit of explanation of new concepts from the instructor. Although the student is involved in pre-class preparation, the teacher-directed instructional time is still delivered in class which means the inverted model does not flip the order of when instruction is delivered (Lane-Kelso, 2015; Lo & Hew, 2017; Logan, 2015). The flipped concept, as innovated by Bergmann and Sams (2012), used technology to bring instruction to students before class which opened class time for practicing new concepts and expanding knowledge with teacher and peer support (Lane-Kelso, 2015; Lo & Hew, 2017; Logan, 2015). Direct instruction is conveyed using teacher created videos or other digital items that allow students to receive the lesson individually; classroom time is free for independent practice, large group activities and/or one-on-one attention for students needing more assistance (Bergmann & Sams, 2016; Logan, 2015; Schmidt & Ralph, 2016).

Since the lecture time is shortened, teachers may opt to use props and drawings in the videos to keep the learners engaged (Schmidt & Ralph, 2016). The instruction may also involve having the learner read, take notes, or perform some activity that encourages them to connect with the video lessons (Bergmann & Sams, 2016; Schmidt & Ralph, 2016). Variety and brevity in the teacher created videos help to avoid the pitfalls of the traditional mundane lecture

(Schmidt & Ralph, 2016). There have been criticisms of the flipped model from students and teachers that centered around the video lessons (Schmidt & Ralph, 2016; Unal & Unal, 2017). Students voiced resistance due to the nature of the videos complaining that watching the videos was time consuming and, regardless of content the videos were unwanted homework (Schmidt & Ralph, 2016; Unal & Unal, 2017). Teachers shared concerns with the amount of time it took to create the videos and to prepare the flipped activities (Unal & Unal, 2017). Teachers were also concerned about watching the videos and echoed the students' observations that the videos were still homework (Aidinopoulou & Sampson, 2017; Unal & Unal, 2017). Some students, they noted, lacked the motivation necessary to view the videos and interact with the material outside of class and as a result came to class unprepared (Aidinopoulou & Sampson, 2017). In one experiment, the results were so dire, the teachers recommended using the videos in class since their students avoided any form of homework (Unal & Unal, 2017). Modifications of the flipped model have been reported with mixed results (Bergmann & Sams, 2016; Unal & Unal, 2017). Some researchers describe the model as ineffective while other educational researchers believe the technology enhanced differentiation represents the future standard of blended instruction (Unal & Unal, 2017).

The flipped classroom approach has many different models (Logan, 2015; Schmidt & Ralph, 2016). Bergmann and Sams (2016) have modified their original model for a more asynchronous system where students work at their individual pace to master concepts and materials (Hodges & Weber, 2015; Kostaris et al., 2017). Some educators have designed an in-class flip to meet the needs of younger students and students without access to the internet and

technology in their homes (Bergmann & Sams, 2016; Schmidt & Ralph, 2016). The in-class flip is a more viable option for some rural or lower socioeconomic areas (Schmidt & Ralph, 2016).

The in-class flip operates like the traditional flip but allows students to complete the work during class time (Bergmann & Sams, 2016; Gonzalez, 2014). The lesson is pre-recorded just like the traditional flip, but instead of viewing it at home the video is used as one of several centers or stations in the classroom (Bergmann & Sams, 2016; Gonzalez, 2014). Students rotate through the centers in small groups working on related activities (Bergmann & Sams, 2016; Gonzalez, 2014). This allows the teacher to spend time with students who need additional support as they rotate through the centers (Bergmann & Sams, 2016; Gonzalez, 2014).

There are benefits to using the in-class flip over the traditional flip model. Many students do not have internet or access to computers in their homes (Gonzalez, 2014). Some students may have access to the technology but may not have the time or inclination to use it (Gonzalez, 2014). The in-class flip provides greater flexibility by allowing the teacher to monitor the work being done, help students to correct mistakes, answer questions, and assess student work as they move from station to station (Gonzalez, 2014).   The lessons are always available; therefore, students can watch them as often as they need (Gonzalez, 2014). If students are absent, they can watch the lesson during a break time or plan with the teacher to watch it before or after school (Gonzalez, 2014).

Students struggling with the foundational skills necessary to learn to read may benefit from more exposure to the elements of literacy that help children become good readers. The in-class flip may be a way to increase exposure to the essential experiences that build the foundational skills needed for reading (Kazakoff et al., 2017). Even after exposure, some

emergent readers may continue to have difficulty with the following elements of phonemic awareness: distinguishing and generating rhymes, manipulating the sounds of words, remembering sound-letter relationships, and identifying letters (Kazakoff et al., 2017). With the availability of the lesson in the classroom, it may be easier to differentiate as students can review the lessons and the related material as much as they need to help lead them to mastery (Gonzalez, 2014).

Strategies for Initiating a Flip.

Regardless of which version is used, the process of establishing the flipped model may seem daunting. Lo and Hew (2017) discussed two problems with the process: 1) creating the videos and related learning materials substantially increases teachers' workload, and 2) managing students' engagement outside of class. With respect to the amount of work needed, Logan (2015) recommended that teachers not worry about making their own videos. There are plenty of sites, such as Khan Academy, with videos for every topic for teachers to use (Logan, 2015). According to Logan (2015), Salman Khan, who established the academy with support from Bill Gates and Google, often receives credit for the success of the flipped classroom model.

Dove and Dove (2015) summarized a simplified protocol for preparing one's classroom to be flipped. To integrate the flipped model, Dove and Dove (2015) recommended adhering to the following approach:

1) Video record lectures for viewing away from class.

2) Prepare learner-centered activities that take place during class.

3) Learners practice during class.

4) Learners work in small groups or with partners in class.

5) Learners receive immediate feedback and support from teachers and peers during in-class practice sessions.

Hodges and Weber (2015) presented a six-step plan to initiate a flip:

1) Create the lesson objectives.

2) Develop the lesson content as a video, PowerPoint®, Prezi™, or other presentation format.

3) Instruct students to watch the lesson content independently and take notes or prepare questions or comments.

4) Use the first 10–15 minutes of class to address student concerns, reteach an important concept, or review the lesson content.

5) Use the remainder of class for students to engage in inquiry-based, discovery-centered learning activities that apply or build upon the course content students learned at home.

6) Close the lesson with a summary of the connections between the in-class activities and the out-of-class assignment.

Both methods supported implementation of the flipped model. The model by Dove and Dove (2015) upheld the traditional flipped approach. The version by Hodges and Weber (2015) supported an in-class adaptation as well as the original flip. The authors agreed the requirement for planning is labor intensive, but well worth the time investment (Dove & Dove, 2015; Hodges & Weber, 2015). Another positive facet of planning the flipped curriculum is that it can serve as collaborative time between colleagues. Teachers on the same grade level can share videos they

have created or researched online. As the lessons are shared, they can provide input to enrich

them as well as improve their instructional strategies (Dove & Dove, 2015; Hodges & Weber,

2015). The next section will review the existing research on the flipped classroom model with a

focus on past results as well as the potential for use with students in elementary reading classes.

<div align="center">**Related Literature**</div>

The purpose of this section was to explore the related literature for using the flipped

classroom model as an instructional strategy for struggling readers, specifically ELLs. The

section includes research that demonstrated a need for a stronger protocol to teach reading. The

section also contains current research on the flipped classroom model of instruction and any

possible effects on student achievement with consideration to any differences between the

genders. The section examined relevant studies to determine if the flipped model of instruction

would be appropriate for use at the elementary level to help ELLs attain the foundational reading

skills necessary to emerge as proficient readers. Finally, the section discusses the impact of the

Covid 19 pandemic, the swift flip to digital platforms on the nation's schools, and the

burgeoning research surrounding the pandemic and online learning.

The Data Advocating for a Stronger Instructional Protocol

The U.S. has made a strong effort to improve reading achievement for the nation's

students. Although gains have been made, many students continue to score below the desired

standards on reading assessments (The Nation's Report Card, 2019). The data indicated while

reading scores have improved for all demographics over the last thirty years, the scores are still

below the standard with ELLs' scores lagging when compared to other groups (The Nation's

Report Card, 2019). The results from the assessment given in 2019 indicated only 35% of fourth-

grade students performed at or above the proficient level on the reading assessment. The evidence showed females scored 38% while males scored 32% (The Nation's Report Card, 2019). The data further indicated a considerable gap in achievement persists among different groups with Asian students and White students exceeding the other groups up to almost 35% (Cassady et al., 2018; The Nation's Report Card, 2019). The data showed Asian students had the highest scores with 57% at or above proficient. White students had the next strongest results with 45% at or above proficient in reading (The Nation's Report Card, 2019). Hispanic students, students from lower socio-economic backgrounds, and African American students trailed behind with scores of 23%, 21%, and 18% respectively while students with disabilities scored 12% proficient or above (The Nation's Report Card, 2019). English language learners had the lowest scores of all the groups with only 10% of students from that demographic scoring at or above proficient (The Nation's Report Card, 2019). This disparity is comparable to an achievement difference of three grade levels (Cassady et al., 2018).

This substantial gap mandates educators find ways to improve reading achievement for all students with critical attention given to the groups in the lower echelons (Baker et al., 2016; Oxley & De Cat, 2019). With the population of immigrants projected to increase in the future, closing the achievement gap should be the primary concern of educators and the public as well (Cassady et al., 2018). Finding reading intervention programs that help ELLs and other students that underperform in reading must continue to be a high priority (Oxley & De Cat, 2019; Richards-Tutor et al., 2016).

　　　In recent years, there has been political controversy concerning immigration; however, American educators continue to seek the best strategies to teach every student. The prevailing

belief remains that it is the responsibility of the American educational system to teach all children in the United States (U.S. Department of Education, 2017). Educators overlook their students' socio-economic backgrounds, their immigration status, and the languages they speak at home (U.S. Department of Education, 2017). This practice is consistent with federal law which dictates that all children in the United States have a right to a free K-12 public education without consideration of their or their parents' immigration background, citizenship, or place of birth (U.S. Department of Education, 2017).

In a review of experimental studies that evaluated reading programs for ELLs, Richards-Tutor et al. (2016) found closing the achievement gap and improving reading performance for ELLs and other students with low reading scores to be of utmost importance. The authors claimed this endeavor should receive serious consideration (Richards-Tutor et al., 2016). Further, the researchers asserted more studies are necessary to provide educators with training on best practices for teaching ELLs (Richards-Tutor et al., 2016). A synthesis of studies performed by Oxley and De Cat (2019) also revealed a significant need to continue the search to find evidence of instructional strategies and programs that prove effective in advancing reading comprehension and skills for ELLs.

Current Research on the Effects of Flipped Instruction

The predominance of research on the effects of applying the flipped classroom model in secondary and higher education is concentrated heavily in the STEM fields (Kostaris et al., 2017; Lo & Hew, 2017). However, this dynamic, student focused mode of learning has attracted educators at every level (Lo & Hew, 2017). In recent years, burgeoning interest in using the model in classrooms with younger students can be seen in current research. These studies are

beginning to address the potential of using the flipped model in elementary classrooms
(Bergmann & Sams, 2016; Kostaris et al., 2017). The existing research indicated support for the
flipped model to improve academic progress when compared to the traditional expository
approach for students in fourth through sixth grades (Aidinopoulou & Sampson, 2017; D'addato
& Miller, 2016; Hodges & Weber, 2015; Kostaris et al., 2017). The studies consistently resulted
in positive reviews concerning the effectiveness of flipped model instruction with very few
articles finding the traditional expository model more successful (Bhagat et al., 2016; Gundlach
et al., 2015; Lo & Hew, 2017). The applicability of flipping an elementary classroom is also
garnering more attention in response to public policies. For example, Every Student Succeeds
Act (ESSA) calls for innovation in the field of education to improve achievement in reading
scores that show only thirty-five percent of the nation's fourth graders reading at or above levels
that demonstrate proficiency and math scores at only forty-one percent (The Nation's Report
Card, 2019). Although there is a growing body of research indicating the potential benefits of
the flipped model for math instruction at the elementary and middle school levels, there is a lack
of scholarship investigating the potential of the flipped classroom in improving reading skills for
students in similar grades (Aidinopoulou & Sampson, 2017; Kostaris et al., 2017; Santikarn &
Wichadee, 2018). The paucity of research investigating the use of the model with reading
instruction may be because many elements of literacy such as fluency, comprehension, and
discussion, require direct instruction and modeling from the teacher. However, proficient reading
requires mastery of foundational oral language skills including: a) phonemic and phonological
awareness, b) vocabulary, c) morphology or language patterns, d) discourse processing or

linguistic structures, and e) pragmatics (Kazakoff et al., 2017). Fluency in word recognition and mastery of phonics are also necessary for successful reading (Kazakoff et al., 2017).

English language learners, students with disabilities, and students from low socioeconomic status (SES) families are more likely to struggle with developing phonemic and phonological awareness and expanding vocabulary necessary for oral language development (Kazakoff et al., 2017). Research from Kazakoff et al. (2017) showed instruction that uses technology can support reading development in students with low performance in reading. The authors found blended learning approaches, like the flipped classroom, allow teachers to efficiently attend to all features of effective instruction for ELLs by using technology to provide data that supports differentiated instruction that effectually customizes instruction for the learner (Kazakoff et al., 2017). The results from the study indicated that blended learning approaches are effective for ELLs, however, more studies are necessary (Kazakoff et al., 2017).

Existing studies explain the gender gap between female and male reading achievement in terms of societal norms, biological function, or a combination of the two (Nalipay et al., 2019; Reilly et al., 2019). The Nation's Report Card (2019) discusses research that suggests faster maturation in females, differences in the regions of the brain responsible for language, males displaying greater variability in all cultures, males having more attention related disorders, and gender stereotyping that casts reading as a more feminine trait (Nalipay et al., 2019; Reilly et al., 2019). The research shows that gender differences exist; however, there are little to no studies that present a model to successfully close the gap.

The Flipped Model and ELLs

There has been a steady rise in studies on the flipped model with a sharp increase in using the model with language learners since 2014 (Bergmann & Sams, 2016; Turan & Akdag-Cimen, 2019). These studies focused on improving reading comprehension for ELLs in secondary and college language arts courses by comparing the traditional expository model to the flipped model (Huang & Hong, 2015; Lo & Hew, 2017). Although there is an increasing amount of research on the effect of flipped method versus the traditional method on academic achievement in upper grades, only minimal research exists on the effects of flipped classroom instruction on reading achievement of students in elementary settings (Kostaris et al., 2017; Lo & Hew, 2017). Recent studies that recommended more research with younger students also emphasized that the time to capitalize on the use of the flipped model to investigate the potential benefits for students is while they are in primary grades (Lo & Hew, 2017; Turan & Akdag-Cimen, 2019; Çevikbaş & Argün, 2017). The implication that younger students may grasp language and reading skills more quickly was supported by studies indicating students, ages nine and under, acquire language with less difficulty because their brains are more adaptable (Dadabhai, 2007; DeKeyser, 2013).

Previous findings showed using the flipped classroom model can enhance learning and achievement as evidenced in improved test scores (Santikarn & Wichadee, 2018). Based on its success in other academic areas, it is important to examine how the flipped classroom functions regarding reading instruction to determine its effectiveness as a viable and replicable means to improve reading readiness for ELLs in primary grades (Kazakoff et al., 2017; Santikarn & Wichadee, 2018). Since research in this area is just beginning to emerge, there is ample room for rigorous studies to fully explore the use of the flipped approach to meet the unique needs of ELLs in the elementary setting, specifically kindergarten through third grade.

Student Perceptions of Flipped Instruction

Accompanying research that credits blended learning models with enhancing student learning experiences are investigations discussing student perceptions (Attard & Holmes, 2020; Bicen & Beheshti, 2019; Jeong et al., 2019; Latorre-Cosculluela et al., 2021; Ng & Lam, 2022). The studies reveal that students in classrooms that use blended learning modes of instruction, such as the flipped model, demonstrate notably higher levels of satisfaction with their courses in comparison to their counterparts enrolled in lecture-based instructional settings (Attard & Holmes, 2020; Bicen & Beheshti, 2019; Jeong et al., 2019; Latorre-Cosculluela et al., 2021; Ng & Lam, 2022). The studies suggest students perceive the flipped method and other blended approaches more favorably because they align more closely with individual learning needs and are devoid of the temporal constraints typically associated with traditional classroom settings (Bicen & Beheshti, 2019; Jeong et al., 2019; Ng & Lam, 2022).

The investigations gather data through a variety of means but offer similar outcomes. Ng and Lam (2022) explore perceptions of participating students by having them complete a survey after the flipped learning experience. The survey requires students to assess their perceived interest and motivation as well as the helpfulness, comfort, and ease experienced when studying the provided materials prior to class (Ng & Lam, 2022). Bicen and Beheshti (2019) use questionnaires and conduct focus group interviews in their study to expose students' perceptions of the flipped or inverted classroom environment. In Jeong et al., (2019) participants answer a series of questions but are also required to describe their feelings for the course to include the method of instruction using five key words. The most common responses were: funny, useful,

hands-on, and interesting. Overall, the studies reveal most students prefer the flipped classroom model to the traditional. Specifically, the results reveal most students:

1. like spending less time on homework in a flipped class,

2. feel they understand class content greater in a flipped classroom,

3. like the increased interaction they get with their teachers in the flipped class,

4. feel flipped learning fostered their participation more effectively than traditional teaching formats.

The collective findings of these studies suggest that students within the experimental group exhibit higher motivation levels compared to their counterparts in the control group (Attard & Holmes, 2020; Bicen & Beheshti, 2019; Jeong et al., 2019; Latorre-Cosculluela et al., 2021; Ng & Lam, 2022). The increased motivation can be attributed to the engaging and comprehensive features of the flipped classroom approach. Within this context, students reported increased ease of concept absorption, enhanced information retention, and greater confidence in their educational progress. Students expressed a preference for the instructor's role as a facilitator, rather than solely a dispenser of information. Further, a dominant feature of the flipped classroom, as indicated by the findings from studies conducted by Bicen and Beheshti (2019), Jeong et al. (2019), and Ng and Lam (2022), is its remarkable capacity to stimulate heightened interaction and learning among students.

In general, the body of research suggests that the flipped learning approach is well-received by the majority of students (Alajlan, 2022; Bicen & Beheshti, 2019; Chen et al., 2022). However, it is essential to note that not all student perceptions of the flipped method were positive. For instance, in the study conducted by Bicen and Beheshti (2019), students expressed

certain reservations and challenges associated with the flipped methodology, including the following remarks:

1. Some students found flipped instruction challenging, as they preferred conducting all their learning within the traditional classroom setting, thereby reserving their out-of-school time for personal activities.

2. Several students initially faced difficulties in adapting to this teaching method.

3. It was suggested that individuals who struggle to grasp a subject in a traditional classroom with a teacher might encounter similar challenges when attempting to learn outside the classroom without the guidance of an instructor (Bicen & Beheshti, 2019).

In a recent study conducted by Rensaa and Fredriksen (2022), an exploration of gender perspectives within a flipped classroom environment was undertaken to assess the differences in how males and females engage with the flipped setting. This study identified four distinct functions of gender. The first perspective is structural gender, which involves interpreting gender within the context of the social structures in which individuals, both women and men, operate (Rensaa & Fredriksen, 2022). The second perspective, symbolic gender, relates to the role of symbols and symbolic discourses in shaping societal norms over time. The third perspective, personal gender, examines how individuals perceive gender as a personal matter, shaped by their interactions with cultural norms and societal structures. This perspective underscores the dynamic and ongoing nature of personal gender perceptions and how individuals fit, or do not fit, into symbolic gender models. The fourth perspective, interactional gender, focuses on the interactions between individuals, emphasizing the view of gender as something manifested

through actions and behaviors, rather than being inherent to one's identity. Interactional gender

evolves through the ongoing negotiations and exchanges between individuals (Rensaa &

Fredriksen, 2022).

In the flipped classroom environment, interactional gender dynamics come to the

forefront, as discussed from the viewpoint of the female participants' experiences. Collaborative

interaction, particularly in the context of solving tasks, plays a central role in the flipped

classroom. The collaborative process assumes that all group members have adequately prepared

by watching the instructional videos before attending class. However, the female encounters

reveal a recurring issue: male group members who arrive unprepared and rely on their female

counterparts to provide explanations. This situation leads to female participants feeling

demotivated and under pressure, as they must derive and explain solutions without assurance of

their accuracy. Teaching others can be valuable if the designated teacher is willing to assume this

role. The female participants' experience in this scenario resulted in their discomfort in the

teacher role, considering the intention is to foster collaboration and discussion with fellow group

members (Rensaa & Fredriksen, 2022). Structural gender dynamics, and consequently, symbolic

gender representations are prominent in the participants' computer science and programming

class. Female participants in the class often observe that the classroom environment is

characterized by their male peers, who have developed a sense of confidence in their own

abilities due to their long-standing interest in computers and programming. These male students

exhibit high levels of confidence in this specific subject, which subsequently influences their

overall self-assuredness in other subjects. In contrast, female students do not exhibit a similar

inclination towards this level of confidence (Rensaa & Fredriksen, 2022). At the personal gender

level, the accounts provided by the female participants imply that they are typically diligent students who consistently prepare for in-class problem-solving activities. However, these female students also appear to harbor insecurities about their academic abilities. In contrast, the male participants tend to rate their competence as higher in all domains compared to their female counterparts and exhibit confidence, even though they rely on their female classmates to grasp the flipped course materials and help them master the material (Rensaa & Fredriksen, 2022).

Teacher Perceptions of Flipped Instruction

Investigations concerning the perceptions of in-service teachers and pre-service teachers also emerged alongside research regarding student opinions about flipped classroom instruction. The findings reveal educators' perceptions of the flipped classroom model to be predominantly positive (Akayoğlu, 2019; Attard & Holmes, 2020; Gough et al., 2017; Schwichow et al., 2021; Yildiz et al., 2022). Teachers credit the flipped model with creating additional opportunities for personalized instruction, fostering student engagement, and enhancing their interaction with instructors (Attard & Holmes, 2020; Gough et al., 2017; Schwichow et al., 2021). According to the study by Gough et al., (2017), educators regarded the flipped classroom as an effective model that enhances students' motivation to learn, cultivates critical thinking and problem-solving abilities, and promotes student autonomy in the learning process. Furthermore, the flipped instructional model contributes to students' development of requisite skills for independent learning, aids those in need of support in maintaining focus during traditional instruction and facilitates the mastery of educational content. Educators also observed that students in flipped classrooms experience advantages such as assuming responsibility for their own learning, engaging in self-paced learning through video materials, and benefiting from peer support

(Gough et al., 2017; Schwichow et al., 2021; Zou, 2020). Prior research, purported by Bergmann and Sams (2016), suggests that video lectures enhance the learning experience for students who miss instruction. In alignment with this established perspective, the findings of this study underscore teachers' consensus regarding the advantages of the flipped classroom for students who are absent. Although teachers agree that accessibility to technology outside of school could be an issue for some students in a flipped classroom, the research affirms that recorded lectures are beneficial for students encountering learning difficulties (Gough et al., 2017).

Although most comments were positive, there were some criticisms of the flipped method. In the study by Yildiz et al. (2022), participants report encountering challenges when initiating the new instructional method. Yildiz et al. (2022) identified five themes characterizing the challenges associated with the flipped classroom approach. These themes encompassed issues related to the "Learning environment," "Technological infrastructure," "Attitude," "Self-regulation," and "Course material". Participants in the study discussed the specific obstacles they faced, which included difficulties in establishing conducive in-class learning environments due to insufficient technological infrastructure and related issues, resistance stemming from unfavorable attitudes toward the course from the students, challenges encountered by students with limited self-regulation skills in navigating out-of-class activities, and the time-intensive process of creating or locating appropriate course materials. Moreover, participants expressed concerns regarding the considerable time and effort required when technical support for designing high-quality flipped classroom courses was unavailable. The participants also relayed feedback concerning students' experiences of frustration when they encountered difficulties in comprehending the course material and had to await assistance (Yildiz et al., 2022).

The Implications of the Covid-19 Pandemic on Digital Learning Platforms

In March of 2020, a majority of state and local governments across the United States placed communities on "lockdown" due to the Covid-19 pandemic. These orders required most citizens to stay home which forced schools across the nation to close causing them to abruptly implement remote instructional practices (Clark et al., 2022; Hover & Wise, 2020; Latorre-Cosculluela et al., 2021). The response to home learning and technology within the education sector during the unprecedented circumstances brought about by the pandemic and its aftermath has been complex. While the digital age had previously led to significant advancements in educational and work contexts, the unpredictability of the pandemic further emphasized the importance of online teaching and learning processes in shaping future training contexts (Latorre-Cosculluela et al., 2021). Educators were tasked with creating teaching materials that moved instruction from the classroom into the home and facilitating remote learning experiences for their students. Many teachers employed online videos, Google classroom, and instruction via Zoom or similar platforms to reach their students (Hover & Wise, 2020). The use of digital learning programs such as the flipped classroom quickly became a practical approach to reaching students who were observing social distancing protocols (Adedoyin & Soykan, 2020; Hover & Wise, 2020). The translation was fluid for teachers who were competent integrating technology into their lessons while those using more traditional methods of teaching struggled (Hover & Wise, 2020).

Post lockdown, educators are aware of the continued need to remain diligent in transforming the nation's education system to meet 21st century demands. Too many educators were not prepared to adapt to the digital learning processes necessary for remote instruction

(Adedoyin & Soykan, 2020). In the shadow of the pandemic, most educators are aware of the importance of being prepared to support student needs in any educational environment. The ongoing challenges confronting educators have precipitated shifts in their perspectives, necessitating careful consideration for the possibility of future remote learning scenarios (Latorre-Cosculluela et al., 2021). Further, despite the growing amount of literature dedicated to investigating the effects of flipped learning experiences, the predominant focus has been on assessing the benefits of using the flipped model in terms of academic performance and perceived satisfaction (Latorre-Cosculluela et al., 2021).

Over the past twenty years, various research studies suggest a positive outcome for using blended learning with high school and university level students (Li & Wang, 2022; Monika & Devi V., 2022). Blended learning programs are becoming more popular (Li & Wang, 2022) as elementary and middle schools are increasingly exploring ways to create 21st century digital learning experiences; however, the implications of the pandemic and the online learning that took place remain unknown at this time (Adedoyin & Soykan, 2020; Clark et al., 2022; Hover & Wise, 2020; Latorre-Cosculluela et al., 2021; Li & Wang, 2022; Monika & Devi V., 2022). Globally, education has experienced a significant and transformative disruption. Throughout this process, technology has been swiftly and extensively leveraged to facilitate the instructional process. Educators and students have been compelled to adapt and redefine their instructional methodologies (Adedoyin & Soykan, 2020; Hover & Wise, 2020; Latorre-Cosculluela et al., 2021).

The study by Latorre-Cosculluela et al. (2021) indicates that flipped learning has the capacity to revolutionize high school and higher education classroom dynamics and encourage

the growth of creativity, critical thinking, communication, collaborative skills, citizen competence, and character development. In essence, the innovative technologies and methodologies involved in flipped instruction and other blended learning approaches emerge as pivotal instruments for the future enhancement and advancement of education, given the many benefits offered in terms of the learning process and the development of students' skills (Adedoyin & Soykan, 2020; Hover & Wise, 2020; Latorre-Cosculluela et al., 2021). Subsequent studies may investigate the long-term impact of remote instruction on students' learning outcomes and instructors' teaching effectiveness at every grade level as well as higher education settings. This is important as the challenges of the 21st century may dictate how we approach education in the future. The current studies do not address long-term effectiveness from the blended approaches initiated during the pandemic and that are still in use in some settings (Latorre-Cosculluela et al., 2021). However, a prevalent theme throughout the research literature is the resilience exhibited by both teachers and students at every grade level when confronted with challenges and changes during the Covid-19 crisis (Adedoyin & Soykan, 2020; Clark et al., 2022; Hover & Wise, 2020; Latorre-Cosculluela et al., 2021; Li & Wang, 2022; Monika & Devi V., 2022). The current study adds to the research to determine if there is a positive effect on student learning when blended instructional activities, specifically the flipped model, are employed with ELLs at the elementary level.

Summary

There remains a gap in the literature concerning the influence using the flipped model of instruction has on reading readiness scores for ELLs. The investigation of the flipped classroom method in the current research adds to the existing body of studies that use a blended learning

approach to support young learners with modest reading skills. Recent literature lacks evidence of studies that focus on the effects of flipping classroom instruction on foundational reading skills with primary students of varying levels of reading readiness and reading ability. Nevertheless, it is worth exploring the potential benefits of employing blended learning instruction, such as the flipped classroom model, to provide support for struggling English Language Learners (ELLs) in elementary grades (Kazakoff et al., 2017). The research confirmed that differentiated instruction blended with technology results in small, positive gains for students struggling with reading across grade levels (Cheung & Slavin, 2005; Monika & Devi V., 2022). A consensus of the research indicated that using the flipped classroom model to meet the specific needs of students reaped positive results for secondary and higher education (Bhagat et al., 2016; Gundlach et al., 2015; Lo & Hew, 2017; Monika & Devi V., 2022). Further, there is a paucity of research documenting the impact of flipped learning at the elementary level, particularly in reading with the studies yielding inconsistent results (Li & Wang, 2022). Learning to simultaneously speak and read in English is difficult for many ELLs (Snyder et al., 2017). However, to acquire language, ELLs need to read, write, listen, and speak English each day (Snyder et al., 2017). To decrease the performance gap, schools must continue to focus on improving reading skills to enable all students to succeed (The Nation's Report Card, 2019). Additional studies should be conducted to assess the effectiveness of flipping the classroom to improve reading skills at elementary grade levels for ELLs and other children struggling to learn to read.

CHAPTER THREE: METHODS

Overview

The purpose of this quantitative study was to investigate the effectiveness of using the flipped classroom model to promote reading achievement for male and female kindergarten English language learners in a midwestern state. Chapter Three covers the research methodology used in this causal-comparative study. The chapter includes a description of the research design, the research question, and the null hypothesis. Descriptions of the participants, setting, sample, groups, and instrumentation are presented with data collection procedures to support future replication. The data analysis strategy is described, to include the type of analysis, a rationale for the analysis, assumption tests, alpha level, and effect size.

Design

A causal-comparative, nonequivalent pre-test/post-test control-group design was used in the study. A causal-comparative approach is a type of experimental design used in quantitative research (Joyner et al., 2013; Rovai et al., 2013). The causal-comparative design is used in nonexperimental investigations to establish cause-and-effect relationships between the variables (Gall et al., 2007). An advantage for researchers using the causal-comparative design is it allows the variables to be examined without manipulating them as the data is being collected ex post facto. (Gall et al., 2007).

The nonequivalent pre-test/post-test group design helps control for unintended variables that occur in the study by ensuring the groups are as similar as possible (Gall et al., 2007; Joyner et al., 2013; Rovai et al., 2013). An analysis of covariance (ANCOVA) is a statistical procedure that determines if the independent variable(s) made a significant difference on the dependent

variable while controlling for the covariate (Gall et al., 2007; Joyner et al., 2013; Rovai et al., 2013). The current study had two independent variables, therefore, a two-way ANCOVA was used.

The purpose of this study was to investigate the difference in student achievement scores in phonemic awareness between students who are taught using the flipped classroom model of instruction and those experiencing traditional expository instruction. The causal-comparative, nonequivalent pre-test/post-test control-group design was chosen based on the unique characteristics presented by the school environment and the difficulty in randomly assigning participants to the control and treatment groups (Gall et al., 2007; Joyner et al., 2013; Rovai et al., 2013).

The independent variables were teaching method and gender. The teaching method can be manipulated; however, the researcher cannot control or manipulate gender, nor can the researcher choose which students are assigned to the classrooms that will form the groups to be studied. The researcher used a convenience sample of kindergarten students from eight different classrooms which also shows the need for this design since, as required with causal-comparative design, the current study required a minimum of two groups in which one group received treatment while the other did not.

The independent variable, teaching method, was manipulated in the form of either traditional expository instruction or flipped classroom instruction. The teaching method applied to the treatment group was the flipped classroom model of instruction. The control group received the business-as-usual model which was the traditional expository mode of instruction. As required by the nonequivalent pre-test-post-test design, both groups were given a pre-test of

phonemic awareness skills prior to instruction and a post-test of phonemic awareness skills after instruction was complete. The study sought to determine if using the flipped classroom model produced a positive effect on the dependent variable, phonemic awareness scores while analyzing any interactions that may have occurred due to gender differences (Lund & Lund, 2018).

All participants took the pre-test to compensate for the absence of the random selection process. The participating classroom teachers scored the pre-tests the same day the tests were administered. The results were recorded and redacted by the teachers. After the treatment was given to one group, post-tests were administered to all students. The post-tests were scored immediately by the participating classroom teachers. The teachers recorded and redacted the scores. The researcher collected the data once all students had been tested. The pre-tests and post-tests were from the Measure of Academic Progress (MAP) which has been adopted by the district and is on the state Commissioner's List of Approved Kindergarten Assessment Instruments for reading assessment.

The research sought to answer the question: Is there a significant difference among phonemic awareness scores of male and female kindergarten English language learners who receive flipped classroom instruction and those who do not while controlling for pre-test scores? A causal-comparative, nonequivalent pre-test/post-test control-group approach was the appropriate design to examine a causal hypothesis while controlling for extraneous variables (Gall et al., 2007; Rovai et al., 2013). The design also supported an experimental study that could not employ random assignment because the researcher could not choose the classrooms to which students were assigned when the groups existed prior to the study. The

researcher also could not control the categorical independent variable of gender, but the design supported the hypothesis by testing between subjects with the two-way ANCOVA. The design also allowed the researcher to control the covariate with the pre-test/post-test design and the two-way ANCOVA. The use of a strong test to collect data such as the MAP resulted in sound data needed for this study.

Research Question

RQ: Is there a difference among phonemic awareness scores of male and female kindergarten English language learners who receive flipped classroom instruction and those who do not while controlling for pre-test scores?

Hypotheses

The null hypotheses for this study are:

$H_0$1: There is no significant difference among phonemic awareness scores, as measured by the Measure of Academic Progress (MAP), of kindergarten English language learners who receive flipped classroom instruction and those who do not while controlling for pre-test scores.

$H_0$2: There is no significant difference between phonemic awareness scores, as measured by the Measure of Academic Progress (MAP), of male and female kindergarten English language learners while controlling for pre-test scores.

$H_0$3: There is no significant interaction among the phonemic awareness scores, as measured by the Measure of Academic Progress (MAP), of male and female kindergarten English language learners who receive flipped classroom instruction and those who do not while controlling for pre-test scores.

Participants and Setting

The participants for the study were drawn from a convenience sample of kindergarten ELLs from a school district in a midwestern state during the fall semester. The district is in a middle-to-lower income suburb outside of a large city with a population of approximately fifty thousand residents. The region is in a large geographical area with several major cities with populations between 1 and 2 million nearby and numerous small cities, towns, and rural areas that connect the nearby cities. The per capita income is $27,000 - $45,000. The population in the region is predominantly White. The demographics for students in the district show 49.6% of the population to be White, 10.3% African American/Black, 29.5% Hispanic/Latino, 3.7% Asian/Pacific Islander, .02% Native American and 6.7% Multi-Racial/Ethnic. The district was chosen because it has a wide spectrum of high- and low-performing schools as well as a significant population, over 14.1%, of English language learners. Approximately 47.2% of students in the district qualify for free/reduced lunch ("Illinois State Board of Education, n.d.," 2019).

Sample

The convenience sample consisted of ELLs in kindergarten from the population of around 820,000 students in grades K-5 that attended public elementary schools in the midwestern state. The schools for this study were selected based on the researcher's professional ties to the district and interest in the study due to the high population of ELLs in the district. With permission from the superintendent, the researcher engaged the principals and kindergarten teachers from the designated schools. The principals were notified via email regarding their school's participation, and the teachers were notified by their principal using a letter from the researcher (see appendices D & F). The letter informed the teachers of the purpose for the

research, requested their participation, outlined the research procedures, and discussed the

benefits of the findings for students and teachers.

   The classes taking part in the study were chosen using the convenience sample method.

The classes were similar in nature and each class contained a balanced number of ELLs from

kindergarten. The district administrator and school principals selected the classes to participate.

There were four classes using the flipped model and four classes using business-as-usual.

Students became participants in the study if their class was selected. The participants for this

study included 167 kindergarten students, 87 males and 80 females. Students who qualified to

receive services for ELLs during the kindergarten screening for language skills and

communication were originally the target for the study; however, all kindergarten students

participated as gender related differences were also measured. The control group had 80 students

(43 boys and 37 girls) and the treatment group consisted of 87 students (44 boys and 43 girls).

The result was a sample of about 22 students from each classroom (N = 167) exceeding the

required 166 students which according to Gall et al., (2007) is the required minimum for a

medium effect size with statistical power of 0.7 at the 0.05. alpha level (when covariate r = .5).

Table 1 provided the composition of the group with respect to gender.

Table 1

Group Composition According to Gender

Group	Male	Female	Total
Control	43	37	80
Treatment	44	43	87
Total	87	80	167

Groups

The students in the control group and treatment group were comprised of 87 males and 80 females in kindergarten. The average age of the students in the groups was five years old. The control and treatment groups that participated in the study were academically and demographically equivalent. The groups were made up of preexisting classes that were designated as control group or treatment group. The control group contained 18 students who spoke Spanish, 4 students who spoke French, 2 students who spoke Swahili, 2 students who spoke Pashto, 53 who spoke English, and 0 students who spoke Hausa with 1 student who did not identify a language spoken at home other than English but qualified for services. The treatment group contained 20 students who spoke Spanish, 4 students who spoke French, 2 students who spoke Swahili, 0 students who spoke Pashto, 59 who spoke English, and 2 students who spoke Hausa. Table 2 displays the demographics of the students from both groups according to language spoken in the home.

Table 2

Demographic Data of Participating Classes

Native Language	Control Group	Treatment Group
Spanish	23%	23%
French	5%	4%
Swahili	2%	2%
English	67%	67%
Hausa	0%	2%
Pashto	2%	2%
Other	1%	0%
Total	100%	100%

The pre-test was given at the chosen elementary schools in a suburb of a midwestern state in accordance with their yearly protocol. The classroom teachers administered the pre-test of reading performance in September. The pre-test, from the district approved Measure of Academic Progress (MAP), served as the covariate to neutralize differences on the dependent variable prior to the intervention. The teachers scored the MAP pre-tests the same day they were administered. The teachers recorded and redacted copies of the data. The copies were turned in to the principals and held until the end of the study.

The study began in November towards the end of the second quarter to coincide with the MAP post-test. The control group received traditional instruction in the school setting for four weeks. The flipped classroom instruction was administered to the treatment group in the school

setting and at home for a period of four weeks. At the end of the four-week period, the participants took a post-test. The post-test was the district approved Measure of Academic Progress (MAP). Because students completed the MAP test online, their scores were generated immediately. The principals collected and recorded redacted copies of all data, pre- and post-tests once all students had completed the MAP test. The principals forwarded the redacted results to the researcher at the conclusion of the study.

Instrumentation

The instrumentation used for this study was the Measure of Academic Progress (MAP) assessment adopted and in use by the school district. The classroom teachers administered the MAP test to all students according to school policy. Students in grades K-8 take the MAP test during a testing window in September, January, and again in May. The MAP is used by school districts every year to accomplish the following: a) assess the skills students should have mastered the previous year, b) establish baseline data for individual skills and abilities of students, and c) evaluate the need for interventions for skills needing mastery ("NWEA," 2020). The results from the mid-year and end-of-year assessments are used to measure growth ("NWEA," 2020).

The data from the initial administration of the MAP was saved and recorded in the students' permanent files to compare with mid-year and end-of-year MAP scores. The scores from the initial test were also used as a pre-test. The purpose of the pre-test was to measure the dependent variable, reading comprehension, prior to administering the intervention as well as function as the covariate in the current study.

The MAP mid-year assessment functioned as the post-test. The mid-year test is used to

monitor growth from September through January and determine interventions to improve

achievement for each student ("NWEA," 2020). The data from the assessments are saved and

recorded in the students' permanent files to document progress. For this study, the mid-year test

served as the post-test instrument to measure the outcome of the treatment and provided

numerical data to present the findings in a concise and efficient manner. Teachers were able to

use data from the initial MAP and mid-year MAP for their needs as well as share redacted copies

of the data with the researcher for use in the study (see Appendix A for instruments).

The MAP can be used as a formative and summative assessment to determine a student's

growth in reading over time ("NWEA," 2020). The MAP was adopted by the district and thus

contains content aligned with reading standards for the district ("NWEA," 2020; Illinois State

Board of Education, 2020)

The MAP tests are computerized adaptive assessments that are administered online and

scored to track students' individual growth throughout the year using screening and

benchmarking (Fazal et al., 2019).

Reading comprehension requires skills such as decoding, letter knowledge, and phoneme

awareness (Ormrod, 2011). The learner must master and apply these skills to understand

vocabulary and identify story elements that help them create meaning as they read (NWEA,

2016; Ormrod, 2011; Illinois State Board of Education, 2020). The MAP contains questions

aligned with state standards that assess reading readiness skills, address story vocabulary, and

identify story elements –main idea, setting, plot, and characters (NWEA, 2020; Illinois State

Board of Education, 2020). The MAP for primary grades uses advanced technology to display

interactive visuals and audio for novice readers (NWEA, 2020). For pre-emergent or non-

readers, the computer provides audio instructions and allows students to respond using the mouse (Howard County Public School System, 2020).

The MAP assessments use the Rasch UnIT scale score (RIT). The RIT score is an equal-interval measurement scale developed by NWEA (2020) and used to represent student achievement and growth on the MAP assessment (NWEA, 2020). This score is used to develop national normative tables to measure student proficiency on each MAP assessment at each grade level thus placing students on a continuum of learning (NWEA, 2020). The data is also used to develop growth goals for students (NWEA, 2020). By using a continuous interval scale, the RIT can be used to evaluate student growth and mastery of readiness skills necessary for reading (Howard County Public School System, 2020; NWEA, 2020). For this study, only scores pertaining to foundational reading skills were used as data.

Reliability and Validity

Districts use numerous types of reading assessments for a variety of purposes. Examples include assessments that establish baseline data or screening data to identify students in need of remediation or enrichment. Some are summative tests to measure end-of-year performance, while others provide formative evaluations. MAP assessments can provide summative and formative evaluations. The evaluations occur periodically and provide measurable data concerning student growth and progress (NWEA, 2020).

Periodic studies to ensure the validity of and reliability of reading scores are performed by outside teams of experienced literacy researchers. For example, in 2015 a RIT Scale norming study was conducted using multi-level growth models on approximately 500,000 longitudinal test scores from over 100,000 students to establish nationally representative norms (Thum &

Hauser, 2015). The MAP assessments use the RIT with a range from 100 to 350. Each subject

area assessment has its own RIT score scale. The periodic studies are also conducted to ensure

RIT scores align to grade level equivalents for the purpose of measuring growth (NWEA, 2016).

Based on the established set of national norms and vertical alignment of the NWEA MAP

Reading Assessment, the score results can be used from pre- to post-tests to gauge student

academic growth in reading (NWEA,2016).

The results of the study indicated that, on average, MAP Growth Reading scores can

consistently monitor progress and classify students' proficiency approximately 82% of the time

(NWEA, 2016). This classroom-based summative and formative assessment allows for more

immediate and individualized instructional adjustments. It also provides benchmark assessments

to monitor student progress, adjust how students are grouped for instruction, and provide

targeted instructional assistance (NWEA, 2016). The instrument has been used in numerous

studies (e.g., Davis, 2012; Mitcham 2015; Torres, 2019) which adds another layer to its

credibility as an assessment tool.

In Davis (2012) for example, the MAP is used to measure growth in comprehension in

students who have received instruction in the foundational reading skills. Each student was

assigned a RIT score from their MAP assessment which correlated with a grade level equivalent.

The score was used to help teachers determine students' literacy development and their reading

readiness. Students scoring below a certain benchmark were candidates for a reading

intervention program according to their RIT score (Davis, 2012).

Mitcham (2015) examined the link between the use of formative data practices and teacher efficacy to improve student performance. The MAP RIT scores were used as an identifying measure to predict student reading success and its efficacy as a universal screener to predict end of the year reading skills. The researcher measured the impact of teacher beliefs on learning outcomes. There was a significant correlational relationship between teacher attitude toward the MAP scores and student performance. Teachers believed positive test scores were predictive of student growth (Mitcham, 2015).

Torres (2019) used the MAP to investigate the effect using the i-Ready Reading Program by Curriculum Associates (CA), an on-line adaptive diagnostics and instruction program. Students used the i-Reading program by CA as the treatment, then used the MAP to determine if the program made a significant difference in student reading progress (Torres, 2019). Like the intended study, the MAP was used to determine students' independent reading levels, monitor progress, and assess treatment outcomes among other goals (Torres, 2019).

In this study, the teachers administered the MAP tests as per school district policy. The classes completed the initial MAP assessment in September. The MAP served as the pre-test instrument. The test had approximately 43 questions that required the students to demonstrate comprehension of unfamiliar text, identify letters and sounds, vocabulary, and foundational skills that allowed students to build words with word families. The questions were divided into four sections: a) literature and informational text, b) vocabulary use and functions, c) language and writing, and d) foundational skills. The number of questions was determined by student performance. Test questions were cycled through in the following manner: if students answered questions correctly, the test became more difficult; when students answered incorrectly, the

questions became easier. The MAP software conducted the scoring and calculation of overall results. The software then generated a RIT score, a percentile compared to others in the nation who take the test, a mean RIT range, and set a goal for each student. The assessment took approximately 15-30 minutes with the length varying due to the adaptive quality of the assessment that allowed students to take more time if needed (NWEA, 2020).

<div align="center">**Procedures**</div>

This research study was conducted using the following procedures. The researcher contacted the school district leadership to facilitate communication for the study to proceed once approval had been granted by the Institutional Review Board (IRB) at Liberty University Online. The researcher spoke with the superintendent of the midwestern state school district and sent a letter to explain the purpose of the study (see Appendix D). The researcher secured written permission for the main study to take place in the fall of the 2022-2023 school year (see Appendix B). The IRB reviewed the proposed research prior to school year 2022-2023. With approval from the IRB secured (see Appendix C for IRB approval), each elementary school principal received a letter, via email, detailing the study (see Appendix D) and a form requesting permission to use the initial, mid-year, and end-of-year portions from the MAP as the pre- and post-test instruments and access to all data necessary to complete the study (see Appendix E). The kindergarten teachers were notified by the principals regarding participation in the study using a letter from the researcher (see Appendix F).

The Study

One week prior to the study, the researcher met with the participating kindergarten teachers and the principals. The researcher thanked the teachers for volunteering to participate

and had the teachers sign participant consent forms (see Appendix G). Next, the researcher shared an overview for completing the study and explained the initial steps that had to be completed prior to beginning the study. The researcher explained the concept of the flipped classroom model and how a modified form of it will be used in this study. The teachers' classes were assigned as either control group or treatment group. The following points were discussed to prepare and train the teachers for the study.

Explaining the Intervention

The flipped classroom model moves the teaching portion of a lesson to a digital format that is viewed outside of class time either at home and/or in a learning station in class. The practice portion of the lesson is moved into the classroom where students have support from the teacher. This format is important for ELLs because they need extended time and exposure to learn the language and understand concepts. The model will allow them to continue experiencing English in their homes or in a classroom learning station while freeing more time to work with the teacher on individual skills during class. The goal is to increase language experience at home or in the classroom by using the flipped classroom model to compensate for lack of English language fluency and proficiency in the home.

Lesson Preparation

Three weeks prior to beginning the study, all participating teachers and the researcher met via zoom to discuss the reading lesson plans for the four-week unit to be taught towards the end of the first semester. The teachers selected the ongoing objectives for skills related to letter knowledge and phonemic awareness to ensure the control group and treatment group received the same content. The teachers shared plans for instruction and the homework to be given. This

delineated what would be accomplished in class and what would be completed at home. The initial and mid-year MAP assessments were discussed and plans for redacting and sharing the initial/pre-test results were made. The mid-year/post-test protocol was prepared for the end of the study.

Digital Preparation

Two weeks out, teachers assigned to administer the treatment met with the researcher to discuss the video lessons chosen. The teachers selected three to four videos from the curriculum designed to develop phonemic awareness. The videos were approximately 2-5 minutes in length.

Sharing Videos

The teachers sent a document containing the lesson and content for each of the videos to the researcher. Table 3 provides the title and lesson objective of each video.

Table 3

Video Lessons

Topic	Lesson Objective	Video Length
Video	Letters/Sounds 1	3:05
Video	CVC Words	2:16
Video	Sight Words	3:28
Video	Letters/Sounds 2	1:08
Video	Letters/Sounds 3	1:25

The videos were available for the treatment group to view in the classroom at a technology station equipped with a Chromebook (or similar technology) and headphones. The

video links were saved in a folder in the student drive for use as assigned. Since students in the

district had school-to-home Chromebooks, the videos were also available for home use by the

treatment group.

Pre-test

Prior to administering the treatment, all students took the initial test in September to

correct for any differences between the groups. To protect students' privacy, the teachers

provided the researcher with a redacted copy of the scores to input in SPSS. The score sheet

identified students by gender only. The researcher performed a data analysis in SPSS on the pre-

tests for the control group and the treatment group to examine for normality. The study

commenced in late November of the fall semester for four weeks.

Treatment

The participants received treatment for a period of four weeks before the teachers

administered the mid-year assessment. The timing of the treatment coincided with the last four

school weeks leading up to the mid-year assessment. The control group received traditional

expository instruction in school and completed practice assignments for homework. The

treatment group received flipped classroom instruction via videos away from the classroom.

They completed the practice assignments during class time with support from the teacher and

their classmates. Prior to beginning the treatment, the teachers confirmed that all students had

access to a device and the internet to view the videos at home. The videos were also available in

technology stations in the classrooms which gave the students more than one opportunity to

access the lessons. Treatment group students were encouraged to view the videos as often as

possible. The researcher checked in with teachers for feedback on the study to ensure both modes

of instruction were being delivered appropriately; however, the researcher did not actively

participate in the administration of the treatment.

Post-test

After four weeks, the treatment ended and both classes took the mid-year MAP

assessment as a post-test. Once all students completed the testing, the schools supplied the

researcher with a redacted copy of the RIT scores from the MAP test for data collection

purposes. The principals sent redacted data containing the pre- and post-test RIT scores and the

gender of the students. Permission to use the initial and mid-year MAP assessments as pre- and

post-tests was granted by the district superintendent prior to the start of the study. See Appendix

E for permission from the district leadership to use the instruments.

The researcher entered the RIT scores from the control and treatment groups to conduct

an analysis of covariance (ANCOVA). For confidentiality, the schools were careful to keep

student names or identifying information private. Once the researcher inputted the RIT scores

from the control and treatment groups, the ANCOVA compared the post-test RIT scores between

the two groups to determine if there was a statistically significant difference between students'

RIT scores for the control and treatment groups.

The researcher analyzed the pre-test RIT scores from the initial MAP test given prior to

treatment and the post-test RIT scores from the MAP test following the treatment. The data was

collected for both tests after the testing had been finished by all participants. Using SPSS, the

researcher entered the data and analyzed pre-test RIT scores to establish normality between the

control group and the treatment group. The post-test RIT scores were analyzed to determine if

there was any significant difference in reading achievement scores between the two groups with respect to gender.

Data Analysis

A quantitative approach was used for this study to measure and compare the performance of the learners in using the flipped model. The study investigated if application of the independent variable, teaching method, impacted the dependent variable, phonemic awareness. Phonemic awareness is defined as the ability to connect sounds and the letters they represent that build words (Schunk, 2016). The covariate was a pre-test which was administered to both groups to compare preexisting levels of reading prior to the treatment (Joyner et al., 2013). The covariate neutralized any preexisting differences between the two groups (Joyner et al., 2013). After the treatment had been administered, a post-test was given to both groups. A two-way analysis of covariance (ANCOVA) compared the post-tests between the two groups at the end of four weeks to determine if the treatment caused an effect (Joyner et al., 2013). The two-way ANCOVA also established whether there was an interaction effect between the independent variables of gender and teaching method (Lund & Lund, 2018).

To analyze data for this causal comparative study, an analysis of covariance (ANCOVA) was planned to evaluate the differences among RIT scores demonstrating improvement in phonemic awareness of male and female kindergarten English language learners who received either flipped classroom instruction or traditional expository instruction, while controlling for pre-test phonemic awareness scores. This study had two categorical independent variables – teaching method and gender. The dependent variable and covariate were continuous. Therefore, an ANCOVA was the appropriate analysis (Lund & Lund, 2018). The administration of a pre-

test to neutralize preexisting differences served as the covariate. After the treatment, all participants took post-tests. Data was analyzed using a two-way analysis of covariance (ANCOVA) to compare the post-tests between the groups and establish whether there was an interaction effect between the independent variables of gender and teaching method ("Understanding a two-way ANCOVA," 2020).

Data Screening and Assumption Testing

Data was visually screened for missing data points and inconsistencies. The researcher created a box and whiskers plot to visually evaluate the distribution and check for extreme outliers. The ANCOVA required that the assumptions of normality and linearity be met. To validate the assumption that the data was normally distributed in each group, an assumption of normality was conducted on the data using the Kolmogorov-Smirnov Test for Normality. To test the assumption of linearity, the researcher ran a series of scatter plots between the pre-test variable and post-test variable for each group. The researcher determined if the assumption of linearity was met by examining the closeness of the dots to the line. To evaluate the bivariate normal distribution assumption, the researcher reexamined the scatter plots to see if the classic "cigar shape" was evident in each plot to indicate the assumption had been met (Green & Salkind, 2017).

Before conducting an ANCOVA, a preliminary analysis was conducted to evaluate homogeneity-of-slopes between the covariate and the dependent variable. The test looked for a nonsignificant interaction between types of teaching methods and reading scores, $F(0), 00) = .000$ and $p = .000$. If the p value was greater than 0.05, the assumption of homogeneity of slopes would be considered met and the ANCOVA would be conducted. The Tests of Between-Subjects

Effects would show if the assumption of homogeneity of slopes was met. The assumption of equal variance was examined using the Levene's Test of Equality of Variance. If the Levene's test yielded a *p* value of 0.05, the assumption of equal variance would not have been met.

Two-Way ANCOVA

The descriptive statistics of mean and standard deviation was reported for the pre-test and the post-test for each group. The research question was analyzed using a two-way ANCOVA with the groups at the alpha *p* < 0.05 level. Students' pre-test scores were used as the covariate in the ANCOVA model. The ANCOVA statistical method was the correct method to use to control for initial variations between groups (Gall et al., 2007; Green & Salkind, 2017). The ANCOVA eliminated any dissimilarities that may have existed on the students' pre-test RIT scores (Gall et al., 2007; Green & Salkind, 2017). The ANCOVA decreased the threat of variation and allowed the researcher to examine differences on the dependent variable, phonemic awareness, between the treatment and the control group (Gall et al., 2007; Green & Salkind, 2017).

The two-way ANCOVA tests were run at the 95% confidence level. Partial eta squared (η^2) was used to measure effect size and was interpreted in terms of Cohen's *d* (Warner, 2013). The Kolmogorov-Smirnov Test for Normality was the appropriate test for the sample size since it was more than fifty. The sample for this analysis exceeded the minimum required sample size of 166 for a two-way ANCOVA for a medium effect size at a statistical power of 0.7 at the 0.05 level. Effect size helped the researcher to determine the degree to which a significant difference could be attributed to a treatment (Warner, 2013). The effect size was calculated using partial eta squared to determine the practical significance of the statistical findings. The following standards are recommended by Gall et al., (2007) to evaluate the partial eta squared (η^2) results:

partial η^2 = .01 is considered a small effect, partial η^2=.06 is considered medium effect, partial η^2

= .138 is considered large effect. The number (N) of participants, degrees of freedom,

significance level (p), and power will also be calculated.

CHAPTER FOUR: FINDINGS

Overview

Chapter Four of this research study displays the analysis results used to examine the effect of the Flipped Classroom model of instruction on the phonemic awareness of male and female kindergarten English language learners (ELLs) and male and female kindergarten students. In addition, the chapter discusses how the Flipped Classroom model impacted student participants and how Flipped Classroom students' phonemic awareness scores compared with those of students not receiving the flipped instruction. Comparisons between this study's experimental and control groups will also be analyzed statistically based on student gender. Results from this chapter will be used to determine if the Flipped model has an impact on students' Measure of Academic Progress (MAP) Test in reading. In addition, results will be used to determine if this program is significant in terms of gender performance.

There was one research question postulated with three null hypotheses tested. The question and the null hypotheses are listed as follows:

Research Question

RQ: Is there a difference among phonemic awareness scores of male and female kindergarten English language learners who receive flipped classroom instruction and those who do not while controlling for pre-test scores?

Null Hypotheses

H$_0$1: There is no significant difference among phonemic awareness scores, as measured by the Measure of Academic Progress (MAP), of kindergarten English language learners who receive flipped classroom instruction and those who do not while controlling for pre-test scores.

H$_0$2: There is no significant difference between phonemic awareness scores, as measured by the Measure of Academic Progress (MAP), of male and female kindergarten English language learners while controlling for pre-test scores.

H$_0$3: There is no significant interaction among the phonemic awareness scores, as measured by the Measure of Academic Progress (MAP), of male and female kindergarten English language learners who receive flipped classroom instruction and those who do not while controlling for pre-test scores.

Descriptive Statistics

The data in the study was collected using the Measure of Academic Progress (MAP) test in reading. The MAP contained four sections - Foundational Language Skills: Beginning Reading and Writing, Foundational Language Skills: Vocabulary, Multiple Genres: Author's Purpose and Craft, and Composition: Inquiry and Research. The study used the scores from the Foundational Language Skills: Beginning Reading and Writing along with the overall Rasch UnIT scale score (RIT). The RIT score is an equal-interval measurement scale developed by NWEA to represent student achievement and growth on the MAP assessment (NWEA, 2016). The Map test's background, reliability, and validity are discussed fully in Chapter Three.

Kindergarten students in two schools in a midwestern district participated in the study. Each school had classes that had a cluster of ELLs. One school functioned as the treatment group and received flipped model instruction from a curriculum-based video lesson as the intervention.

The other school served as the control group and received traditional expository instruction in class without access to the curriculum-based video lessons prior to instruction. The control and treatment groups were selected from pre-established classes that were academically and demographically equivalent. The classes were chosen to ensure there would be a cluster of ELLs in the group receiving the treatment and a cluster of ELLs in the control group. The treatment school had 87 kindergarten students and the control school had 80 students. The combined kindergarten population for both schools was 167 students. There were no students who opted out of the study. The following table shows the composition of groups:

Table 4

Group Composition According to Gender

Group	Male	Female	Total
Control	43	37	80
Treatment	44	43	87
Total	87	80	167

With the initial screening, there were challenges with reviewing the data that required the researcher to get assistance interpreting the scores. There were two issues that made the screening difficult: the information was presented in a series of three different scores followed by a description of their results as high, average, or low. The problem was there were identical scores with conflicting descriptions. For example, two students had scores of 143-146-149; however, one student was described as high while the other was described as average. Several students had matching raw scores with what appeared to be contradictory descriptive data.

The researcher contacted a former colleague from the cooperating school district for help understanding the scores (C. Wilson, personal communication May 27, 2023). The explanation reviewed that the MAP for Reading contains four sections - Foundational Language Skills: Beginning Reading and Writing, Foundational Language Skills: Vocabulary, Multiple Genres: Author's Purpose and Craft, and Composition: Inquiry and Research. The study only used the scores from the Foundational Language Skills: Beginning Reading and Writing. The series of numbers represent the margin of error for each student's RIT score with the middle number representing the actual RIT score from that test. The other two numbers express the range of scores possible if the student tested again. The labels of high, average, and low reflect the language score of each student from all four sections which explains how identical scores from one section can have different labels. Understanding how to read the data, the researcher was able to proceed with the screening using the actual RIT score, the middle number, from the series for each student's pre-test and post-test RIT scores (NWEA, 2023).

Understanding that RIT scores are to be interpreted as benchmarks to measure student growth over time and not target scores (NWEA, 2016), inputting and reviewing the data prior to conducting the analysis proved to be a valuable activity. There are three thresholds that delineate student RIT scores for the MAP test of Reading: Low threshold scores range from 117 through 131 points, the Median threshold score is 137 points, and the High threshold scores range from 143 to 157 points (NWEA, 2016). While engaged in the screening, the researcher evaluated where students scored according to the thresholds. Scores that stood out were either below or above the thresholds and, although they were included in the analysis, were viewed as potential

outliers pending the analysis. The researcher was also looking for scores that improved significantly or remained the same from the pre-test to the post-test.

Pre-test RIT scores for the treatment group ranged from a low score of 118 to a high score of 162. Pre-test RIT scores for the control group ranged from a low score of 118 to a high score of 157. Post-test RIT scores ranged from a low score of 116 to a high score of 174 for both the treatment and the traditional groups. Descriptive data from the pre-test and post-test by gender and setting is provided in Table 5.

Table 5

Descriptive Statistics: Pre-test and Post-test Scores by Gender and Setting

Gender		*N*	Pre-test Mean	*SD*	Post-test Mean	*SD*	Mean Difference
M		87	135.48	9.05	151.38	11.28	15.9
F		80	136.94	9.68	152.35	12.25	15.41
CG		80	138.23	9.70	155.01	11.96	16.78
	M	43			157.51	8.80	
	F	37			152.11	14.39	
TG		87	134.30	8.65	148.93	10.79	14.63
	M	44			145.39	10.23	
	F	43			152.56	10.22	

Results

Data Screening

A two-way Analysis of Covariance (ANCOVA) was employed for this study because the study used two independent variables, gender and setting. Also, the study had a covariate, the

pre-test, which neutralized differences in the groups before the treatment. A causal-comparative, nonequivalent pre-test/post-test control-group design was used in the study.

Data screening was conducted on the dependent variables and the covariate for data inconsistencies, outliers, and normality in keeping with procedures recommended by Warner (2013). The researcher entered data into IBM® SPSS® independently. Due to the amount of data being entered, the researcher reviewed the input multiple times to reduce errors in data entry and ensure there were no missing values.

The ANCOVA requires several assumptions be addressed prior to conducting the analysis. The first assumption is no extreme outliers. Box and whiskers plots were used to screen for outliers on each independent variable and no extreme outliers were identified (Green & Salkind, 2017; Warner, 2013). The assumption for no extreme outliers was found tenable. See Figure 1 and Figure 2 for box and whiskers plots.

Figure 1

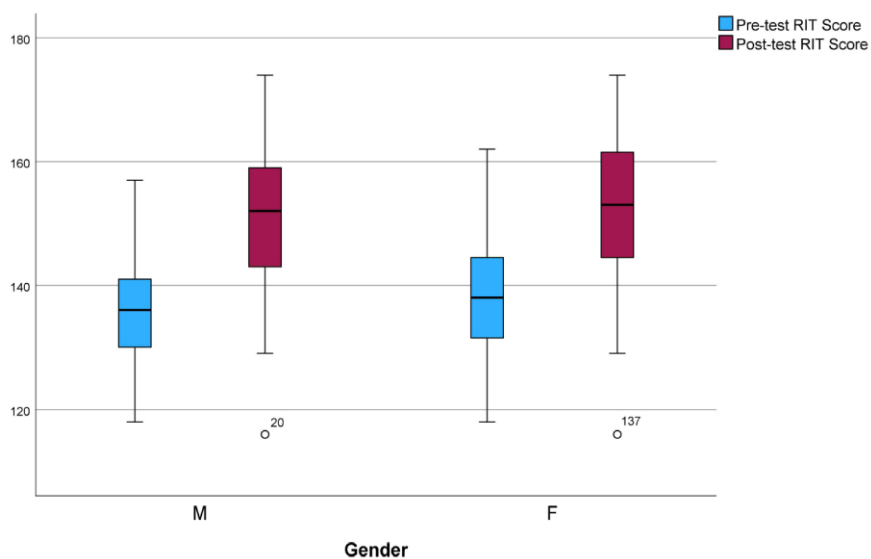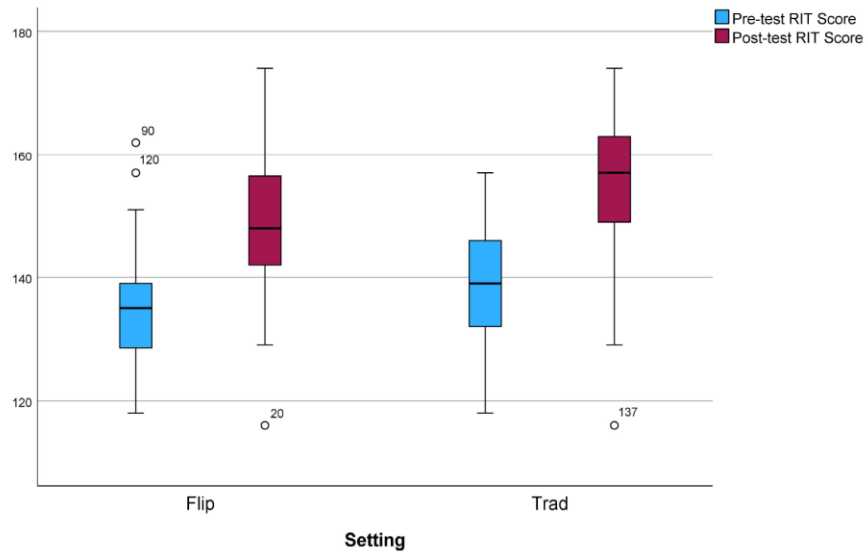*Box and Whisker Plots for the Independent Variable Gender*

Figure 2

Box-and-Whisker Plots for the Independent Variable Setting

Next, the assumption of normality was tested. The assumption of normality holds that the population distributions for the dependent variable are normal across the various levels of independent variables. Since the study used more than 50 cases the Kolmogorov-Smirnov test was used and histograms were created to visually test the assumption (Green & Salkind, 2017; Warner, 2013). When examining for normality within the gender variable, a violation of the assumption was observed within the data for males on pre-test scores. See Table 6 for Tests of Normality.

Table 6

K-S Test of Normality for the Independent Variable Gender

Tests of Normality

	Gender	Kolmogorov-Smirnov[a]			Shapiro-Wilk		
		Statistic	*df*	Sig.	Statistic	*df*	Sig.
Pre-test RIT	M	.102	87	.027	.973	87	.064
Score	F	.079	80	.200	.976	80	.135
Post-test RIT	M	.086	87	.160	.984	87	.346
Score	F	.084	80	.200	.979	80	.211

*. This is a lower bound of the true significance.

a. Lilliefors Significance Correction

However, a visual inspection of the histograms showed that the data was approximately normal

(Green & Salkind, 2017; Warner, 2013). See Figure 3 for histogram on gender.

Figure 3

Histogram Test of Normality for the Independent Variable Gender
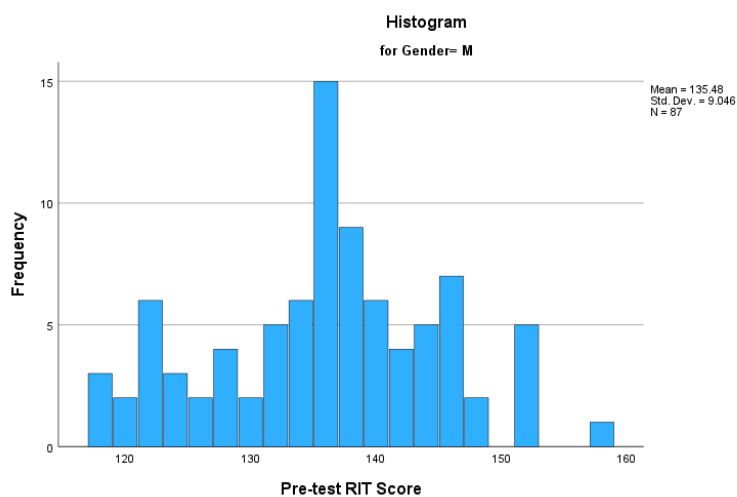
The Kolmogorov-Smirnov test and histograms were conducted for the independent variable of setting as well. For the independent variable of setting, the Kolmogorov-Smirnov test revealed violations of Normality for the Traditional setting on both pre-test and post-test. The Kolmogorov-Smirnov Test for Normality was the appropriate test since the sample size was greater than fifty. See Table 7 for Test of Normality for setting.

Table 7

K-S Test of Normality for the Independent Variable Setting

Tests of Normality

		Kolmogorov-Smirnov[a]			Shapiro-Wilk		
	Setting	Statistic	df	Sig.	Statistic	df	Sig.
Pre-test RIT	Flip	.096	87	.048	.969	87	.037
Score	Trad	.122	80	.005	.944	80	.002
Post-test RIT	Flip	.065	87	.200	.990	87	.784
Score	Trad	.113	80	.013	.947	80	.002

*. This is a lower bound of the true significance.

a. Lilliefors Significance Correction

However, a visual inspection of histograms showed that the data was approximately normal. See Figure 4 and Figure 5 for the histograms.

Figure 4

Histogram Tests of Normality for the Independent Variable Setting Pre-test
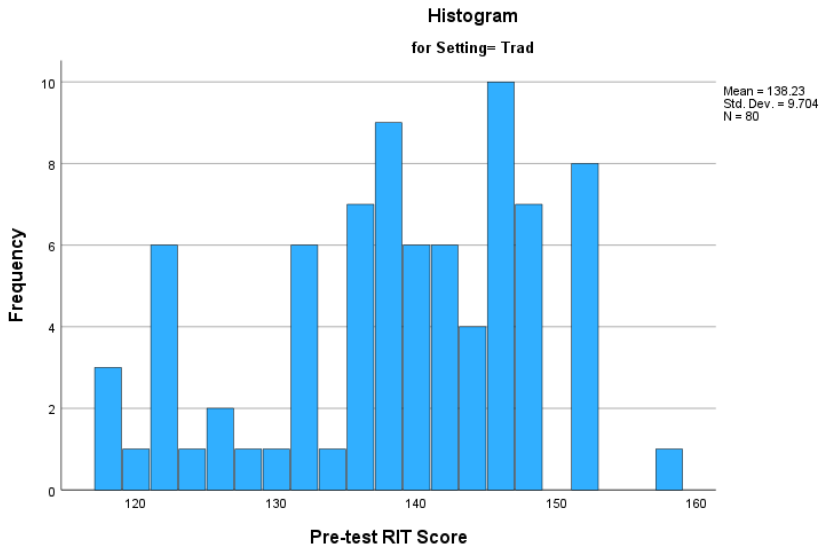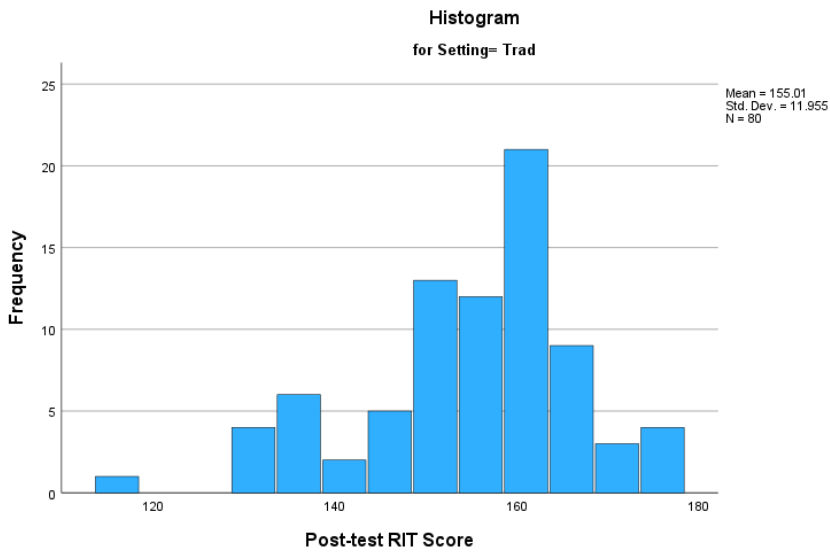

Figure 5

Histogram Tests of Normality for the Independent Variable Setting Post-test

These minor violations of normality were not determined to hinder the ANCOVA analysis, which is robust to violations to the assumption of normality if other assumptions are met (Rovai et al., 2013; Warner, 2013).

Finally, the assumptions of linearity and of bivariate normal distributions were examined through a series of Scatterplots (Rovai et al., 2013; Warner, 2013). This assumption was held tenable for both gender and setting on all levels of the dependent variable. Figure 6, Figure 7, Figure 8 and Figure 9 include the scatterplot for each group.

Figure 6

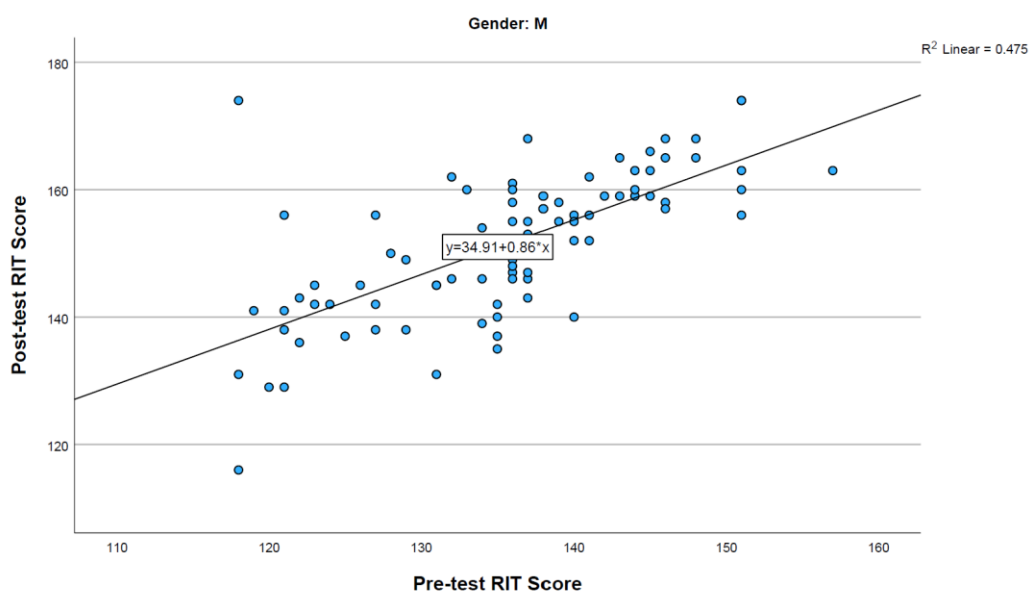*Scatterplot for the Assumption of Linearity – Male*

Figure 7

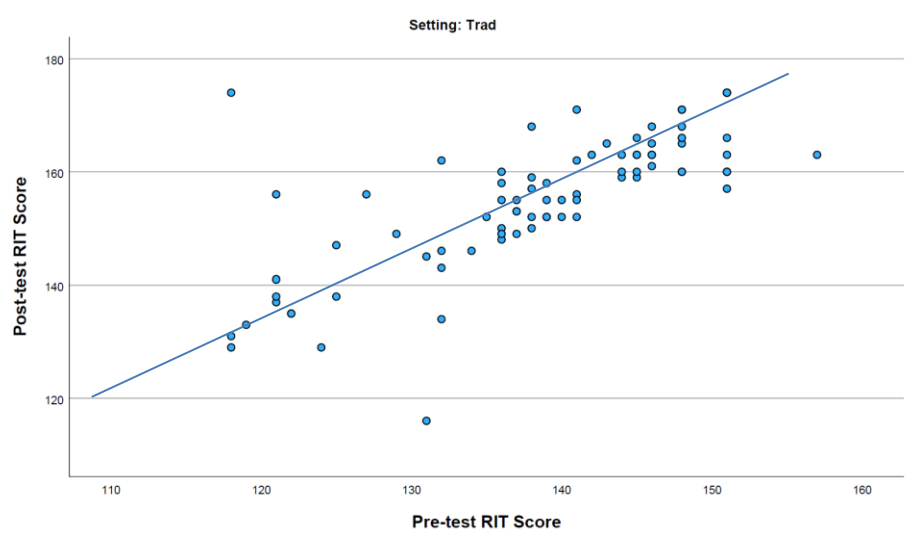*Scatterplot for the Assumption of Linearity – Female*

Figure 8

Scatterplot for the Assumption of Linearity – Flip

Figure 9

Scatterplot for the Assumption of Linearity –Trad

Two-Way ANCOVA required that three assumptions be met: normality of distribution, homogeneity of variance, and homogeneity of slopes (Rovai et al., 2013; Warner, 2013). The normality of distribution was tested during data analysis and the minor violations are explained above. The assumption of homogeneity of variances was examined using Levene's test, and was found tenable $F(3, 163) = .366$, $p = .78$ (Rovai et al., 2013; Warner, 2013). See Table 8 for the Levene's Test.

Table 8

The Assumption of Homogeneity of Variances on the Dependent Variable

Levene's Test of Equality of Error Variances[a]

Dependent Variable: Post-test RIT Score

F	df1	df2	Sig.
.366	3	163	.777

Tests the null hypothesis that the error variance of the dependent variable is equal across groups.

a. Design: Intercept + PretestRITScore + Gender + Setting + Gender * Setting

The homogeneity of slopes assumption was tested, and the difference in slopes for the levels of the independent variables on the dependent variable were found to be statistically significant for setting $F(1, 163) = 4.21$, $p = .042$, $MSE = 264.37$, partial $\eta^2 = .03$ but not statistically significant for gender $F(1, 163) = .008$, $MSE = .525$, $p = .93$, partial $\eta^2 = .000$ (Rovai et al., 2013; Warner, 2013). Again, the researcher determined to proceed with the data analysis, knowing the ANCOVA is robust to violations of assumptions (Warner, 2013).

Null Hypothesis One

The first null hypothesis states, "There is no significant difference among phonemic awareness scores, as measured by the Measure of Academic Progress (MAP), of kindergarten English language learners who receive flipped classroom instruction and those who do not while controlling for pre-test scores". This hypothesis addressed the first independent variable, setting, on the dependent variable, post-test RIT score. A Two-Way ANCOVA was conducted, and the

independent variable, setting, included two levels, treatment where students received flipped method of instruction and traditional where students received the business-as-usual approach. The dependent variable was the post-test RIT score, and the covariate was the pre-test RIT score.

The Two-Way ANCOVA was significant $F(1,162) = 4.24$, $MSE = 250.99$, $p= .041$, partial $\eta^2 = .026$. The means of the RIT post-test scores adjusted for initial differences were as follows across the two groups. The traditional setting had a larger adjusted mean ($M = 153.09$) than the treatment group ($M = 150.57$). The differences in adjusted means differed significantly, indicating the post-test scores for the traditional setting were statistically significantly higher for the post-test scores of the treatment group. The effect size was medium (partial $\eta^2 = .026$), indicating approximately 2.6% of the difference in means is accounted for by the independent variable, setting (Warner, 2013). The first null hypothesis was rejected. There was a significant difference in phonemic awareness based on setting.

Null Hypothesis Two

The second null hypothesis states, "There is no significant difference between phonemic awareness scores, as measured by the Measure of Academic Progress (MAP), of male and female kindergarten English language learners while controlling for pre-test scores". This hypothesis addressed the second independent variable, gender, on the dependent variable post-test RIT score. A Two-Way ANCOVA was conducted, and the independent variable, gender, included two levels, male and female. The dependent variable was the post-test RIT score, and the covariate was the pre-test RIT score.

The Two-Way ANCOVA was not statistically significant $F(1,162) = .098$, $MSE = 5.82$, $p = .754$, partial $\eta^2 = .001$. The means of the RIT post-test scores adjusted for initial differences were as follows across the two groups. Males had a larger adjusted means ($M = 152.02$) than females ($M = 151.64$). The differences in adjusted means did not differ significantly. The second null hypothesis was accepted. There was no significant difference in phonemic awareness based on gender.

Null Hypothesis Three

The third null hypothesis states, "There is no significant interaction among the phonemic awareness scores, as measured by the Measure of Academic Progress (MAP), of male and female kindergarten English language learners who receive flipped classroom instruction and those who do not while controlling for pre-test scores". A Two-Way ANCOVA was conducted, and the independent variable, setting, included two levels, treatment and traditional and the independent variable, gender, had two levels, male and female. The dependent variable was the post-test RIT score, and the covariate was the pre-test RIT score.

The Two-Way ANCOVA was significant at $F(1,162)$, $MSE = 642.92$, $p = .001$, partial $\eta^2 = .063$. The means of the RIT post-test scores adjusted for initial differences were as follows: Treatment-Males ($M = 148.77$), Traditional-Females ($M = 150.91$), Traditional – Males ($M = 155.26$), Treatment-Females ($M = 152.37$). The interaction among adjusted means differed significantly, indicating post-test scores of females in the traditional setting ($M = 150.91$) were statistically significantly higher than post-test scores for males in the treatment setting ($M = 148.77$). The effect size was medium (partial $\eta^2 = .063$), indicating approximately 6.3% of the difference in means is accounted for by the independent variables, setting and gender (Warner,

2013). The third null hypothesis was rejected. There was a significant interaction based on both independent variables. All pairwise comparisons were run for statistically significant simple main effects with reported 95% confidence intervals and p-values. See Table 9, Table 10, Table 11, and Table 12 for Multiple Comparisons of Groups followed by Figure 10 and Figure 11 for the interaction.

Table 9

Multiple Comparisons of Groups – Gender

Pairwise Comparisons

Dependent Variable: Post-test RIT Score

					95% Confidence Interval for Difference[a]	
		Mean Difference				
(I) Gender	(J) Gender	(I-J)	SE	Sig.[a]	Lower Bound	Upper Bound
M	F	.11	1.23	.93	-2.32	2.54
F	M	-.11	1.23	.93	-2.54	2.32

Based on estimated marginal means

a. Adjustment for multiple comparisons: Least Significant Difference (equivalent to no adjustments).

Table 10

Multiple Comparisons of Groups – Setting

Pairwise Comparisons

Dependent Variable: Post-test RIT Score

		Mean Difference			95% Confidence Interval for Difference[b]	
(I) Setting	(J) Setting	(I-J)	SE	Sig.[a]	Lower Bound	Upper Bound
Flip	Trad	-2.58	1.23	.04	-5.06	-.10
Trad	Flip	2.58	1.23	.04	.10	5.06

Based on estimated marginal means

*. The mean difference is significant at the .05 level.

b. Adjustment for multiple comparisons: Least Significant Difference (equivalent to no

adjustments).

Table 11

Multiple Comparisons of Groups Gender*Setting – Gender

Pairwise Comparisons

Dependent Variable: Post-test RIT Score

(I) Gender	(J) Gender	Mean Difference (I-J)	SE	Sig.[a]	95% Confidence Interval for Difference[a] Lower Bound	Upper Bound
M	F	.38	1.20	.75	-1.99	2.74
F	M	-.38	1.20	.75	-2.74	1.99

Based on estimated marginal means

a. Adjustment for multiple comparisons: Least Significant Difference (equivalent to no adjustments).

Table 12

Multiple Comparisons of Groups Gender*Setting – Setting

Pairwise Comparisons

Dependent Variable: Post-test RIT Score

|		Mean Difference			95% Confidence Interval for Difference[b]	
(I) Setting	(J) Setting	(I-J)	SE	Sig.[a]	Lower Bound	Upper Bound
Flip	Trad	-2.51	1.22	.04	-4.92	-.10
Trad	Flip	2.51	1.22	.04	.10	4.92

Based on estimated marginal means

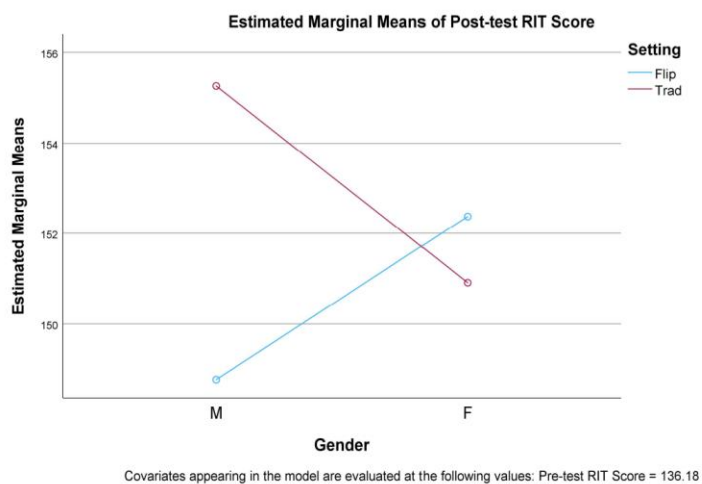*. The mean difference is significant at the .05 level.

b. Adjustment for multiple comparisons: Least Significant Difference (equivalent to no adjustments).

Figure 10

Interaction Between the Independent Variables Setting and Gender Graph 1
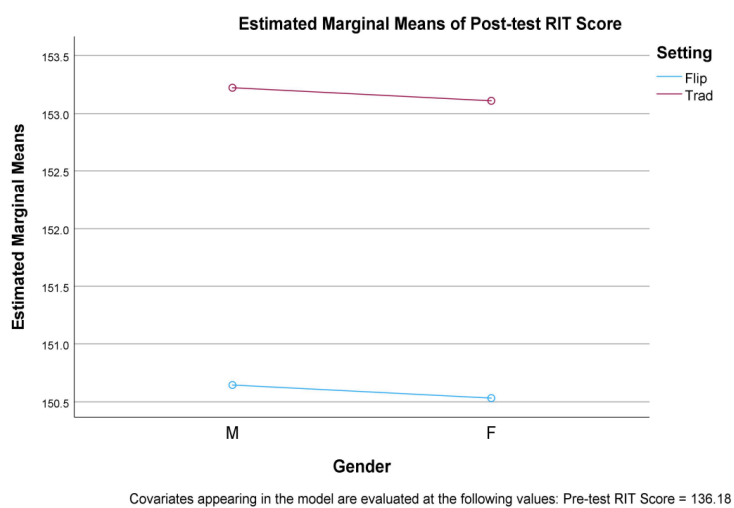
Figure 11

Interaction Between the Independent Variables Setting and Gender Graph 2

Summary

This chapter provided a description of the data collected in this study and the procedures for statistically analyzing the data. Data consisted of results from the participants' pre-test RIT scores and post-test RIT scores on the Measure of Academic Progress (MAP) Test in reading. The resultant analyses compared differences in post-test responses based upon setting and gender. Descriptive and inferential statistics were reported, and a Two-Way ANCOVA was used for understanding differences between groups with the pre-test serving as the covariate.

The study's main findings were that participants who did not receive the treatment had statistically significantly higher post-test RIT scores on the MAP when compared to RIT scores of participants who received the treatment. Gender did not appear to influence post-test RIT scores as no statistically significant difference was found between genders. When considered together, setting and gender did produce a statistically significant interaction for post-test RIT scores with females in the traditional group having statistically significantly higher post-test RIT scores than males in the treatment group. Table 13 summarizes the significance of the findings for each analysis of the research questions and Null Hypotheses.

Table 13

Summary of Findings for the Research Question and Null Hypotheses

Question	Null	p-value	Reject Null	Effect Size
RQ1	$1H_0$	0.041	Yes	.026
	$2H_0$	0.754	No	.001
	$3H_0$	0.001	Yes	.063

CHAPTER FIVE: CONCLUSIONS

Overview

This study sought to investigate the flipped model of instruction and examine its impact on reading scores of kindergarten English language learners (ELLs) and male and female kindergarten students. This chapter begins with a discussion of the results and implications of this investigation in consideration of Vygotsky's Sociocultural Theory (1986) and other research outlined in the literature review. The chapter also presents the limitations of the study and concludes with recommendations for future research.

Discussion

The purpose of this quantitative study was to determine whether the flipped classroom model of instruction, a blended learning approach, can help English language learners in primary grades increase their phonemic awareness. A causal-comparative, nonequivalent control group, pre-test/post-test factorial design was implemented to examine differences between students who were taught using the flipped classroom model of instruction and those experiencing traditional expository instruction. The study also examined differences in phonemic awareness scores between genders.

Phonemic awareness is the ability to identify and manipulate individual sounds and is a critical foundational skill necessary for reading as well as language development (Schunk, 2016). Research indicates that the method of instruction educators use may influence their students' ability to attain this essential competence needed for reading proficiency (Bhagat et al., 2016; Gundlach et al., 2015; Lo & Hew, 2017). Studies using flipped instruction at secondary and university levels consistently showed student improvement in academic subjects, suggesting that

this method of instruction may influence student success (Bergmann & Sams, 2016; Hung, 2014; Lo & Hew, 2017; Turan & Akdag-Cimen, 2019). Research conducted across various academic subjects and across nearly all grade levels, from fourth grade through higher education, indicates that the flipped model may play an influential role in students' academic achievement (Aidinopoulou & Sampson, 2017; D'addato & Miller, 2016; Hodges & Weber, 2015; Kostaris et al., 2017; Lo & Hew, 2017). The findings consistently demonstrate that students exposed to the flipped model of instruction tend to outperform peers who received traditional expository instruction, making this mode of instruction significant in terms of academic outcomes (Bhagat et al., 2016; Gundlach et al., 2015; Lo & Hew, 2017).

The role of student gender has also been linked to student academic success in reading (The Nation's Report Card, 2019; Nalipay et al., 2019; Reilly et al., 2019). Research offers various explanations for the gender disparity observed in reading achievement between females and males pointing towards societal norms, biological factors, or a combination thereof (Nalipay et al., 2019; Reilly et al., 2019). These factors may include faster maturation of female brains, distinctions in brain regions responsible for language processing, differences in reading performance among males across diverse cultural contexts, a higher prevalence of attention-related disorders in males, and the pervasive influence of gender stereotyping, which associates reading with femininity (The Nation's Report Card, 2019; Nalipay et al., 2019; Reilly et al., 2019). The research clearly establishes the existence of gender-based reading disparities; however, the development of a comprehensive model aimed at effectively mitigating and ultimately closing this achievement gap has not been discovered.

The flipped model requires a change in instructional approach in the classroom and emphasizes a need for differentiated instruction (Bergmann & Sams, 2016; Cassady et al., 2018; Tomlinson, 2016; Unal & Unal, 2017). Throughout the country, numerous schools have experimented with the flipped methodology of instruction; however, prior research has mainly focused on how this mode of instruction impacts learning at the primary level of education (Erbil, 2020; Gough et al., 2017; Lo & Hew, 2017; Monika & Devi V., 2022). The prior research demonstrates the positive effects upon student learning and engagement, teacher collaboration and satisfaction, and academic performance in high school and institutions of higher education (McWhirter et al., 2019; Santikarn & Wichadee, 2018). The flipped approach has also garnered praise for promoting cooperative learning and differentiated learning and has been encouraged in the constructivist philosophies of educators such as Piaget, Dewey, and Vygotsky (Schunk, 2016; Vygotsky, 1986). The central principles of these constructivist theories emphasize active engagement, social interaction, and personalized learning (Schunk, 2016; Vygotsky, 1986). Flipped instruction encourages active engagement by shifting away from the traditional lecture-based lesson. In the flipped classroom, students interact with instructional materials away from the classroom setting (Bergmann & Sams, 2016). This independent interaction allows students to construct an understanding of the content at their own pace. This aligns with Piaget's theory of cognitive development, which emphasizes individual knowledge construction. During class time, cooperative learning activities encourage students to collaborate with peers to explore and apply the knowledge they acquire independently. Thus, the flipped environment promotes social interaction among peers, discussion, and the sharing of ideas, all of which are key components of Vygotsky's Sociocultural Theory (1986). Flipped instruction also supports differentiated learning

which means the diverse needs and learning styles of the students are addressed individually

(Bergmann & Sams, 2016; Tomlinson, 2016). Since students engage in lessons outside the

classroom at their own pace, in-class tasks can be tailored to fit their specific needs (Bergmann

& Sams, 2016; Tomlinson, 2016). The differentiated learning component of flipped instruction

allows students to receive targeted support and enrichment activities based on their individual

readiness and specific needs (Birnie, 2015; Schunk, 2016; Van Brummelen, 2009; Washburne,

1953). Dewey referred to this approach where active participation and individualized experiences

are emphasized as experiential learning (Schunk, 2016).

Research suggests the advent of technology has increased the possibility of instructional

reform offered by the flipped method and called for more research on the flipped model to

improve academic experiences of ELLs and other students who struggle with learning

(Bergmann & Sams, 2016; Kazakoff et al., 2017). Technology may also allow greater access of

materials from the teacher to the students, and for students to review lessons as often as needed

(Bergmann & Sams, 2016; Kazakoff et al., 2017). This may be particularly beneficial for ELLs

as well as students who need more time to process new information (Kazakoff et al., 2017).

Null Hypothesis One. The first research question focused on discovering if the flipped

model of instruction had an impact on kindergarten students who received the treatment versus

those who did not. The first null hypothesis asks, "Is there a significant difference

among phonemic awareness scores, as measured by the Measure of Academic Progress (MAP),

of kindergarten English language learners who receive flipped classroom instruction and those

who do not while controlling for pre-test scores?" The study showed there was a significant

difference based on setting, $F(1,162) = 4.24$, $MSE = 250.99$, $p = .041$, partial $\eta^2 = .026$, therefore,

the first null hypothesis was rejected. The analysis indicated that a statistically significant

differences existed between RIT post-test scores of students who received the flipped mode of

instruction versus those who did not. Post-test RIT scores for students receiving the *traditional*

mode of instruction were significantly higher than the post-test RIT scores of students in the

treatment group.

These results contrast with studies conducted in high schools and higher learning

institutions where students receiving the treatment scored significantly higher. In Bhagat et al.,

(2016), the impact of the flipped classroom model of instruction was compared to traditional

expository instruction. However, the target population in Bhagat et al., (2016) was high school

Trigonometry students and, the study focused on students' achievement scores in math instead of

reading. The study also measured student motivation to complete math-related tasks. It did not,

however, consider the role of gender with regard to achievement. The study further examined the

effect of flipped classroom instruction on the performance of students with varying ability levels.

The findings indicate a significant difference in the math achievement scores between the

treatment group and the control group. However, in Bhagat et al., (2016) study, the students in

the flipped setting outperformed the students in the traditional setting, which contrasts with the

current study where the students in the traditional setting performed better than the students in

the flipped setting.

Another study compared two versions of the flipped model, one structured and one semi-

structured, to non-flipped lessons (Hung, 2014). Like the current research, Hung (2014)

investigated the impact flipped instruction might have on the academic performance of English

language learners. The research also explored the potential effects of implementing the flipped

classroom model on learning attitudes and levels of participation among students (Hung, 2014).

Differing from the current investigation, Hung used three different settings and the participants

were university level students. The first setting, the "structured flip," used an active learning

strategy called WebQuest. WebQuest is an inquiry-based learning tool that can be used to engage

students in flipped instruction (Hung, 2014). The structured flip used WebQuest materials to

support and guide students through the lesson. The next setting, "semi-structured flip," used a

tool called TED-Ed. TED-Ed is a video-sharing platform that allows users to tailor and enhance

lessons by incorporating a diverse selection of videos, quiz questions, and other supplementary

materials, all of which can be used for self-study or instructional objectives (Hung, 2014). In this

setting, the students engaged with the learning materials without the planned lesson guide from

the structured setting. In the third setting, the non-flipped classroom, students received

instruction from the teacher during in-class sessions and were assigned homework to be

completed in the traditional manner (Hung, 2014). The findings, pertaining to student academic

performance, indicated that the non-flipped classroom was less effective, while to varying

degrees, both the structured and semi-structured flipped lessons helped students achieve stronger

learning outcomes (Hung, 2014). In contrast, the findings from the current study suggest that

students perform better with instruction occurring in the traditional classroom setting, where

students receive in-person instruction from their teacher while surrounded by their peers. In

summary, there is ample research that suggests in-person instruction contributes to student

learning to a greater extent than virtual instruction.

Paul and Jefferson (2019) discuss the advantages of presenting information via the

traditional in-person format versus the use of video presentation. There is value in authentic,

human interaction during real-time, face-to-face engagement between teachers and students, as well as peer-to-peer exchanges, which have the potential to stimulate innovative inquiries and discussions (Paul & Jefferson, 2019). Students can promptly seek clarifications or other responses when they have questions within the classroom environment, while teachers can observe nonverbal cues and also respond in the moment. Some individuals thrive from the synergy that exists in the traditional, in-person setting. Face-to-face class dialogues and the spontaneous rapport that occurs between teachers and students may be lost when lessons are delivered via an online format or through video instruction (Paul & Jefferson, 2019). The research suggests that in-person learning contributes to motivation, fosters the cultivation of a sense of community among students, and offers students essential encouragement provided by the teacher (Paul & Jefferson, 2019).

Null Hypothesis Two. The second null hypothesis examined whether the flipped model of instruction impacted reading scores based on the gender of the participants. The second null hypothesis asks, "Is there a significant difference between phonemic awareness scores, as measured by the Measure of Academic Progress (MAP), of male and female kindergarten English language learners while controlling for pre-test scores?" When comparing post-test scores from the Measure of Academic Progress (MAP), no significant difference was found between male participants (*M* = 152.02, *SD* = .83) and female participants (*M* = 151.64, *SD* = .86), $F(1,162) = .098$, *MSE* = 5.82, *p* = .754, partial η^2 = .001. Therefore, the second null hypothesis was accepted.

These results are in contradiction to Reilly et al., (2019) who examined three decades of student achievement data and consistently found that females outperformed males in tasks

involving reading and writing. The study indicates there are gender-specific factors that facilitate female reading scores surpassing those of their male counterparts (Reilly et al., 2019). The research suggests that female students can remain focused on tasks involving reading while male learners display difficulty in maintaining attention (Reilly et al., 2019). The inability to sustain attentiveness and active engagement during the learning process can impact a child's ability to attain the critical foundational skills needed to learn to read (Reilly et al., 2019). Although the current study did not indicate a significant difference in achievement between male and female participants, there was a striking difference in the post-test RIT scores between males who received the treatment (M = 145.39, SD =10.23) and males who did not (M = 157.51, SD = 8.80). In fact, it is this difference that may be contributing to a significant interaction found in the third null hypothesis, which examined scores affected by setting versus gender. This more than 12-point difference was not found when comparing females who received the treatment (M = 152.56, SD = 10.22) and those who did not (M= 156.11, SD = 14.39). These results may indicate that the flipped setting, where there is an expectation of independent activity when completing tasks, is not as productive for male students as the traditional setting, where there is more teacher supervision and influence with on-task behavior. Noting that female learners did equally well in either setting reinforces the possibility that male reading achievement may be influenced by diminished task-oriented behavior when compared to their female peers (Reilly et al., 2019).

The Center on Education Policy (2010) also reported disparities between males and females, with females outperforming males in reading in every U.S. state. Further studies refer to females outperforming males in the attainment of skills needed for reading as a well-documented phenomenon (Doyle, 2023; Nalipay et al., 2019; Reilly et al., 2019). These investigations also

suggest that the differences between the genders pertaining to brain development, maturity, and maintaining attention can impact a child's ability to attain the prerequisite skills necessary to learn to read. The studies indicate that for reading instruction to yield its intended benefits, children must exhibit continued focus and an active participation in the learning process (Doyle, 2023; Nalipay et al., 2019; Reilly et al., 2019). Attentiveness plays a pivotal role in reading comprehension in both early and advanced reading proficiency. Further, the studies indicate that educators frequently report that boys tend to exhibit more challenging conduct in the classroom and display diminished task-oriented behavior compared to girls (Reilly et al., 2019). Consequently, it is reasonable to suggest that gender disparities in reading achievement may be intricately linked to variations in attentiveness during reading instruction and literacy lessons, thereby exerting a lasting impact on subsequent reading development (Doyle, 2023; Nalipay et al., 2019; Reilly et al., 2019).

Null Hypothesis Three. The third null hypothesis focused on the interaction of the independent variables: setting and gender. The hypothesis asks, "Is there a significant interaction among the phonemic awareness scores, as measured by the Measure of Academic Progress (MAP), of male and female kindergarten English language learners who receive flipped classroom instruction and those who do not while controlling for pre-test scores?" Upon comparing post-test scores on the MAP, using the pre-test as the covariate, the results revealed a significant interaction between the independent variables of setting and gender on the post-test $F(1,162)$, $MSE = 642.92$, $p = .001$, partial $\eta^2 = .063$. Traditional females ($M = 150.91$, $SD = 1.27$) scored higher than treatment males ($M = 148.77$, $SD = 1.19$). Thus, the third null hypothesis was rejected.

As the current study relates to Vygotsky's Sociocultural Theory, which has roots in constructivist theory, the findings of this research confirmed Vygotsky's theory (Gin & Hearn, 2019; Schunk, 2016; Vygotsky, 1986). The study revealed that students in both settings showed increases in their RIT scores from pre-test to post-test. This suggests that whether the instruction is transferred to students in a passive approach or whether the students take an active role during the lesson, the content of the lesson is successfully being delivered to students (Bergmann & Sams, 2016; Schmidt & Ralph, 2016). Although students in the traditional setting outperformed students receiving the treatment, which was not anticipated by the current study's researcher, there may still be value in examining the critical first step of the flipped model, which delineates how knowledge is transmitted from teacher to pupil (Gin & Hearn, 2019). It is possible that younger learners might benefit more with a modified version of the flipped model that incorporates increased supervision, particularly during their initial engagement with video materials. The implementation of an in-class flip strategy would enable teachers to closely observe the extent to which students effectively interact with the instructional videos, and allow them to curb any undesirable behaviors that inhibit learning (Kazakoff et al., 2017; Li & Wang, 2022; Santikarn & Wichadee, 2018).

The current in-class flip model uses centers or learning stations within the classroom to present the video lesson (Bergmann & Sams, 2016; Gonzalez, 2014). This modification allows the teacher's presence to continue to be a factor, which is consistent with Vygotsky's principle that human connection is key to human development (Vygotsky, 1986). If the social interaction that occurs in the teaching and learning dynamic is, as Vygotsky believed, essential to building knowledge, then the physical presence of the teacher, who provides motivation, guidance, and

encouragement, may be more impactful, particularly for younger students (Paul & Jefferson, 2019; Schunk, 2016; Woolfolk & Perry, 2012). Further, it is not enough to take the initial lesson away from the traditional classroom setting. The class time must be enhanced by group activities, peer collaborations that support the lesson, or individual instructional time with the teacher. In sum, Vygotsky believed that the use of active learning methods and activities leads to improved critical cognitive development (Schunk, 2016; Vygotsky, 1986; Woolfolk & Perry, 2012).

The findings for the current research are two-fold. First, the study indicated that the RIT scores of students using the traditional classroom model are significantly higher than students using the flipped classroom model of instruction. This is in contrast with previous studies conducted at the high school and higher education levels which found that students receiving flipped instruction experience higher levels of academic success than those in the traditional setting (Bhagat et al., 2016; Hung, 2014). Second, the study is in contrast with prior studies demonstrating that females achieved reading scores surpassing those of their male classmates (Doyle, 2023; Nalipay et al., 2019; Reilly et al., 2019). There was no indication in this study that females scored significantly higher than males, or vice versa, indicating that gender alone was not a significant factor.

Implications

This research study added to the body of knowledge regarding the effectiveness of flipped classroom instruction. The research also added to the literature on blended learning models and their impact on academic achievement. Through the analysis of data, this study indicated that the traditional mode of instruction may be the most effective instructional

approach for kindergarten aged students who may struggle with phonemic awareness. The study added valuable research regarding the use of the flipped instructional design in primary settings. Most studies that focus on the flipped method are either stem-related or encompassing multiple subjects at the higher education setting (Kazakoff et al., 2017; Lo & Hew, 2017). Targeting a younger population provided insight into the ability of younger children to display the level of independence needed to participate in the flipped design. The lack of studies focusing on using the flipped method with students in the lower primary grades may be due to the assumption that young students lack the maturity needed to participate in a learning design that calls for autonomy and self-regulation. This study may support that notion, as the students receiving the flipped model of instruction did not outperform students in the traditional setting. However, more studies targeting younger children similar to the current study may lead to further modifications of the flipped model to support young learners in a manner that allows them to benefit fully from the strategy. While this study did not address the challenges that may have existed with younger participants, it did add to the literature by showing that primary learners have the capacity to benefit from the flipped model, as the students receiving the treatment showed some gains. In the post-Covid environment, schools may continue to adopt more blended-learning designs like the flipped method. Further research as to the impact of this model on children in the primary setting will add to a better understanding of its overall effect on reading achievement in the classroom. The results of this study support a call for more research involving this specific grade level and age group with a view to formulating an adapted approach for using the flipped model with younger learners.

Limitations

There were several limitations to the study. First, the external validity was threatened by two weaknesses inherent to causal-comparative research: lack of randomization and the inability to manipulate an independent variable. Random assignment of subjects to groups is simply not possible as the groups are already established (Gall et al., 2007). This is especially significant for this study, which used kindergarten classes. Since the children were new to the school, attempts to create balanced classrooms were challenging because the academic ability of the new students was unknown, and therefore could not be controlled between classes. Therefore, in this study, the independent variables of gender and non-randomized settings threatened the external validity.

Second, the internal validity of the study may have been threatened by the lack of competency of technology and knowledge of the flipped model among the teachers. In the treatment school, there was only one teacher who was tech savvy as well as familiar with the flipped model. Although, during the training period leading up to the study, there was discussion about the experienced teacher supporting the team members less familiar with the flipped model, the internal validity may have been weakened by the inability to carry out the flip with parity. The lead teacher may have ensured the videos were prepared and loaded onto their platform successfully but may not have been able to influence the active learning methods used during class time.

Third, external validity may have been threatened by the calendar timing of the study. The post-test portion of the study took place in November around Veterans' Day and was interrupted by Thanksgiving. There was also a significant lag between the intervention and the post-test due to the school's Christmas break, creating a testing window that stretched into mid-January. The duration of the study was also an external threat to validity. The study was only a

total of eight weeks with the first four weeks devoted to teacher training and preparation. This left only four weeks to conduct the study.

Another internal threat involved the competency of the young participants. There was nothing in place to determine if the students remained on task when they viewed the videos during the flip portion of the lesson. There are some platforms, such as Google classroom, that allow teachers to watch how long the students interact with the program. To this researcher's knowledge, no such platforms were used. Knowing whether a student watched the video once or multiple times would provide more data. In addition, during the teacher preparation period, the group discussed using the in-class flip modification, but some of the teachers mentioned the home flip might be easier to facilitate because all the children had their own, school-issued Chromebooks. Although it was recommended to conduct the in-class flip to better monitor student behavior, this researcher is not certain if all the treatment classes conducted the flip in the same location.

A practical limitation stems from realizing the study does not explore how well the flip works for individual learners in their unique situations. Most classrooms have students who need more help as well as students that are positioned to learn well, regardless of the environment. The inability to control for preexisting student competency was an external threat as well.

Recommendations for Future Research

There are several areas related to this research study where additional research might provide more insight. A mixed study that includes pre and post interviews of the participating teachers may help future researchers address abnormalities or questions after the study is complete. Reviewing the results with the teachers may also be beneficial for them.

Taking more time to train the learners and everyone supporting the learners as well as having a more uniform approach when using the videos may also positively impact future results. Moving the study from the mid-year to the end-of-year testing window may give the young participants more time to learn how to manage the flip. With the preparation and training for the study taking place for such a brief period, there is the potential that the intervention did not have enough time to influence student performance. Shifting the study to coincide with the final MAP test at the end of the school year may mitigate the disruptions associated with the holiday season. Also, this study should have focused more on training the teachers using the flip instead of relying on one resident expert. Training teachers who are new to the flipped method as well as training novice learners on how to use the flipped approach may also have a positive impact on results. Implementing training designed to support the parents of participants to ensure the videos are viewed attentively may also be helpful. Further, parents could be enlisted to help track how often students watch the videos. In short, it is recommended that future studies provide greater internal controls for both settings and procedures.

Finally, consideration should be given to creating a modified flip that is designed specifically for younger learners. Using a model that involves students with similar reading abilities that requires them to watch and interact with videos may encourage cooperative learning and differentiation. Increasing these factors may also aid students in improving their reading skills. During Covid-19, there was a global need that created a reliance on online and hybrid instruction. Further research should be conducted in areas outside of the stem field to assess the flipped design's potential across the curriculum. There are only a few studies that explore the impact flipped instruction may have on subjects involving reading and language acquisition.

Online instruction could be a viable option if a design for younger students could be created. Further research should be conducted for grades K-6 to assess the effects and challenges of using the design with younger learners and will also need to consider the different demographics that exist.

A concluding recommendation for future researchers is to investigate the extent of gain from pre-test to post-test to assess whether one instructional setting bridged the comprehension gap between the pre-test and post-test more efficiently.

REFERENCES

Adedoyin, O. B., & Soykan, E. (2020). COVID-19 pandemic and online learning: The

challenges and opportunities. *Interactive Learning Environments*, 1-

13. https://doi.org/10.1080/10494820.2020.1813180

Aidinopoulou, V., & Sampson, D. G. (2017). An action research study from implementing the

flipped classroom model in primary school history teaching and learning. *Educational*

Technology & Society, *20*(1), 237-247.

http://www.ifets.info.ezproxy.liberty.edu/journals/20_1/21.pdf

Akayoğlu, S. (2019). Teaching CALL to pre-service teachers of English in a flipped

classroom. *Technology, Knowledge and Learning*, *26*(1), 155-

171. https://doi.org/10.1007/s10758-019-09428-3

Alajlan, H. A. (2022). Performance, participation and perception of computer education students

toward flipped learning. *Technology, Knowledge and Learning*, *28*(3), 1175-

1197. https://doi.org/10.1007/s10758-022-09590-1

Attard, C., & Holmes, K. (2020). An exploration of teacher and student perceptions of blended

learning in four secondary mathematics classrooms. *Mathematics Education Research*

Journal, *34*(4), 719-740. https://doi.org/10.1007/s13394-020-00359-2

Baker, D. L., Burns, D., Kame'enui, E. J., Smolkowski, K., & Baker, S. K. (2016). Does

supplemental instruction support the transition from Spanish to English reading

instruction for first-grade English learners at risk of reading difficulties? ***Learning Disability Quarterly***, *39*(4), 226-239. https://doi.org/10.1177/0731948715616757

Batalova, J., Bolter, J., & Blizzard, B. (2020, February). ***Frequently requested statistics on immigrants and immigration in the United States***. https://www.migrationpolicy.org/article/frequently-requested-statistics-immigrants-and-immigration-united-states

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

Bergmann, J., & Sams, A. (2016). ***Flipped learning for elementary instruction***. International Society for Technology in Education.

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

Bicen, H., & Beheshti, M. (2019). Assessing perceptions and evaluating achievements of ESL students with the usage of infographics in a flipped classroom learning environment. *Interactive Learning Environments*, *30*(3), 498-526. https://doi.org/10.1080/10494820.2019.1666285

Birnie, B. F. (2015). Making the case for differentiation. ***The Clearing House: A Journal of Educational Strategies, Issues and Ideas, 88***(2), 62-65. https://doi.org/10.1080/00098655.2014.998601

Brighton, C. M., Moon, T. R., & Huang, F. H. (2015). Advanced readers in reading first classrooms. *Journal for the Education of the Gifted*, *38*(3), 257-293. https://doi.org/10.1177/0162353215592501

Budiman, A., Tamir, C., Mora, L., & Noe-Bustamante, L. (2022). *Key findings about U.S. immigrants*. Pew Research Center. https://www.pewresearch.org/short-reads/2020/08/20/key-findings-about-u-s-immigrants/

Cassady, J. C., Smith, L. L., & Thomas, C. L. (2018). Supporting emergent literacy for English language learners with computer-assisted instruction. *Journal of Research in Reading*, *41*(2), 350-369. https://doi.org/10.1111/1467-9817.12110

Chai, Z., Ayres, K. M., & Vail, C. O. (2016). Using an iPad app to improve phonological awareness skills in young English-language learners with disabilities. *Journal of Special Education Technology*, *31*(1), 14-25. https://doi.org/10.1177/0162643416633332

Chen, V., Sandford, A., LaGrone, M., Charbonneau, K., Kong, J., & Ragavaloo, S. (2022). An exploration of instructors' and students' perspectives on remote delivery of courses during the COVID-19 pandemic. *British Journal of Educational Technology*, *53*(3), 512-533. https://doi.org/10.1111/bjet.13205

Chen-Hsieh, J. S., Wu, W. V., & Marek, M. W. (2016). Using the flipped classroom to enhance EFL learning. *Computer Assisted Language Learning*, *30*(1-2), 1-21. https://doi.org/10.1080/09588221.2015.1111910

Cheung, A., & Slavin, R. E. (2005). Effective reading programs for English language learners and other language-minority students. *Bilingual Research Journal*, *29*(2), 241-267. https://doi.org/10.1080/15235882.2005.10162835

Clark, R. M., Kaw, A. K., Lou, Y., & Scott, A. R. (2022). The flipped classroom during the remote period of COVID: Student perceptions compared to pre-COVID times. *International Journal of Mathematical Education in Science and Technology*, 1-22. https://doi.org/10.1080/0020739x.2022.2052198

Dadabhai, M. (2007). The Effects of Age on the Ability to Learn English as a Second Language. *Language in India*, *7*(6), 1-53.

D'addato, T., & Miller, L. R. (2016). An inquiry into flipped learning in fourth grade math instruction. *Canadian Journal of Action Research*, *17*(2), 33-55. https://search-ebscohost-com.ezproxy.liberty.edu/login.aspx?direct=true&db=eric&AN=EJ1113472&site=ehost-live&scope=site

Daly, M., & Corcoran, R. P. (2019). Kindergarten self-control mediates the gender reading achievement gap: A population-based cohort study. *Journal of Research in Personality*, *83*, 103881. https://doi.org/10.1016/j.jrp.2019.103881

Davis, D. A. (2012). Examining the effects of READ 180 with sixth grade students in a southwest united states school district based on a formative assessment—Measures of academic Progress—and its impact on leadership decisions

DeKeyser, R. M. (2013). Age effects in second language learning: Stepping stones toward better understanding. *Language Learning*, *63*, 52-67. https://doi.org/10.1111/j.1467-9922.2012.00737.x

Dixon, F., Yssel, N., McConnell, J. M., & Hardin, T. (2014). Differentiated Instruction, Professional Development, and Teacher Efficacy. *Journal for the Education of the Gifted*, *37*(2), 111-127. https://doi-org.ezproxy.liberty.edu/10.1177/0162353214529042

Dove, A., & Dove, E. (2015). Examining the influence of a flipped mathematics course on preservice elementary teachers' mathematics anxiety and achievement. *Electronic Journal of Mathematics & Technology*, *9*(2), 166-179. https://search-ebscohost-com.ezproxy.liberty.edu/login.aspx?direct=true&db=asn&AN=111362987&site=ehost-live&scope=site

Doyle, J. (2023). An Investigation into gender in the classroom: Does gender have an impact on pupils' educational achievement? *Education Journal Review*, *28*(3), 2-31. https://web.s.ebscohost.com/ehost/pdfviewer/pdfviewer?vid=17&sid=2f44ffbd-bb41-4032-b2c5-2df603ecd838%40redis

Erbil, D. G. (2020). A review of flipped classroom and cooperative learning method within the context of Vygotsky theory. *Frontiers in Psychology*, *11*, 1-9. https://doi.org/10.3389/fpsyg.2020.01157

Fazal, M., Panzano, B., & Luk, K. (2019). Evaluating the impact of blended learning: A mixed-methods study with difference-in-difference analysis. TechTrends, 64(1), 70-78. https://doi.org/10.1007/s11528-019-00429-8

Gall, M. D., Gall, J. P., & Borg, W. R. (2007). *Educational research: An introduction* (8th ed.). Allyn & Bacon.

Garcia-Perez, M., & Johnson, R. (2017). Understanding the effect of an intervention program on high school graduation rates: The access and opportunity program in St. Cloud, Minnesota. *Educational Planning*, *24*(2), 41-54. https://eric.ed.gov/?id=EJ1208097

Gin, D. H., & Hearn, M. C. (2019). Why you do what you do: The power in knowing and naming pedagogies. *Teaching Theology & Religion*, *22*(1), 30-51. https://doi.org/10.1111/teth.12467

Gonzalez, J. (2014, March). Modifying the flipped classroom: The "in-class" version. *Edutopia*. https://www.edutopia.org/blog/flipped-classroom-in-class-version-jennifer-gonzalez

Gough, E., DeJong, D., Grundmeyer, T., & Baron, M. (2017). K-12 teacher perceptions regarding the flipped classroom model for teaching and learning. *Journal of Educational Technology Systems*, *45*(3), 390-423. https://doi.org/10.1177/0047239516658444

Green, S. B., & Salkind, N. J. (2017). *Using SPSS for Windows and Macintosh: Analyzing and understanding the data* (8th ed.). Pearson Education.

Gundlach, E., Andrew, K., Richards, R., Nelson, D., & Levesque-Bristol, C. (2015). A comparison of student attitudes, statistical reasoning, performance, and perceptions for web-augmented traditional, fully online, and flipped sections of a statistical literacy class. *Journal of Statistics Education*, *23*(1), 1-34. doi=10.1080/10691898.2015.11889723

Gutek, G. L. (2012). *Historical and philosophical foundations of education: A biographical introduction*. Pearson Educacion.

Harper, S. N., & Pelletier, J. P. (2007). Gender and language issues in assessing early

   literacy. *Journal of Psychoeducational Assessment*, *26*(2), 185-

   194. https://doi.org/10.1177/0734282908314105

He, Y., Journell, W., & Faircloth, J. (2018). Preparing teachers for English learners: Integrating

   academic language and community service projects. *The Social Studies*, *109*(1), 13-26.

   https://doi.org/10.1080/00377996.2017.1403874

Hodges, T. S., & Weber, N. D. (2015). Making heads or tails of classroom flipping. *Kappa

   Delta Pi Record*, *51*(2), 57-63. https://doi.org/10.1080/00228958.2015.1023135

Hover, A., & Wise, T. (2020). Exploring ways to create 21st century digital learning

   experiences. *Education 3-13*, *50*(1), 40-

   53. https://doi.org/10.1080/03004279.2020.1826993

Howard County Public School System. (2020). *Measures of Academic Progress (MAP)

   Information*. https://www.hcpss.org/academics/testing/map-information/

Huang, Y., & Hong, Z. (2015). The effects of a flipped English classroom intervention on

   students' information and communication technology and English reading

   comprehension. *Educational Technology Research and Development*, *64*(2), 175-

   193. https://doi.org/10.1007/s11423-015-9412-7

Hung, H. (2014). Flipping the classroom for English language learners to foster active

   learning. *Computer Assisted Language Learning*, *28*(1), 81-96.

   https://doi.org/10.1080/09588221.2014.967701

Illinois State Board of Education. (2020). Kindergarten. Retrieved November 2020,

   from https://www.isbe.net/Pages/Kindergarten-Corner.aspx

Illinois State Board of Education. (n.d.). Data & accountability: Annual statistical report. Retrieved November 7, 2019, from https://www.isbe.net/Pages/Annual-Statistical-Report.aspx

Jeong, J. S., González-Gómez, D., & Cañada-Cañada, F. (2019). How does a flipped classroom course affect the affective domain toward science course? *Interactive Learning Environments*, *29*(5), 707-719. https://doi.org/10.1080/10494820.2019.1636079

John-Steiner, V., & Mahn, H. (1996). Sociocultural approaches to learning and development: A Vygotskian framework. **Educational Psychologist**, **31**(3), 191-206. https://doi.org/10.1207/s15326985ep3103&4_4

Joyner, R. L., Rouse, W. A., & Glatthorn, A. A. (2013). ***Writing the winning thesis or dissertation: A step-by-step guide*** (3rd ed.). Corwin Press.

Kazakoff, E. R., Macaruso, P., & Hook, P. (2017). Efficacy of a blended learning approach to elementary school reading instruction for students who are English learners. **Educational Technology Research and Development**, **66**(2), 429- 449. https://doi.org/10.1007/s11423-017-9565-7

Kostaris, C., Sergis, S., Giannakos, M., Pelliccione, L., & Sampson, D. (2017). Investigating the potential of the flipped classroom model in K-12 ICT teaching and learning: An action research study. **Journal of Educational Technology & Society**, **20**(1), 261-273. https://search-ebscohost-com.ezproxy.liberty.edu/login.aspx?direct=true&db=asn&AN=120706119&site=ehost-live&scope=site

Lane-Kelso, M. (2015). The pedagogy of flipped instruction in Oman. *The Turkish Online Journal of Educational Technology*, *14*(1), 1-8. https://files.eric.ed.gov/fulltext/EJ1057339.pdf

Latorre-Cosculluela, C., Suárez, C., Quiroga, S., Sobradiel-Sierra, N., Lozano-Blasco, R., & Rodríguez-Martínez, A. (2021). Flipped classroom model before and during COVID-19: Using technology to develop 21st century skills. *Interactive Technology and Smart Education*, *18*(2), 189-204. https://doi.org/10.1108/itse-08-2020-0137

Li, S., & Wang, W. (2022). Effect of blended learning on student performance in K-12 settings: A meta-analysis. *Journal of Computer Assisted Learning*, *38*(5), 1254-1272. https://doi.org/10.1111/jcal.12696

Lo, C. K., & Hew, K. F. (2017). A critical review of flipped classroom challenges in K-12 education: Possible solutions and recommendations for future research. *Research and Practice in Technology Enhanced Learning*, *12*(1), 1-22. https://doi.org/10.1186/s41039-016-0044-2

Logan, B. (2015). Deep exploration of the flipped classroom before implementing. *Journal of Instructional Pedagogies*, *16*, 1-12. files.eric.ed.gov/fulltext/EJ1106741.pdf

Lund, A., & Lund, M. (2018). *Two-way ANCOVA (one covariate)*. SPSS Statistics Tutorials and Statistical Guides | Laerd Statistics. https://statistics.laerd.com/premium/spss/twanc/two-way-ancova-in-spss.php

McWhirter, E. H., Rojas-Araúz, B. O., Ortega, R., Combs, D., Cendejas, C., & McWhirter, B. T. (2019). ALAS: An intervention to promote career development among

Latina/o immigrant high school students. *Journal of Career Development*, *46*(6), 608-

622. https://doi.org/10.1177/0894845319828543

Miller, R. D., Mackiewicz, S. M., & Correa, V. I. (2017). A multi-modal intervention for

English language learners: Preliminary results. *Education and Treatment of

Children*, *40*(2), 209-232. https://doi.org/10.1353/etc.2017.0010

Monika, M., & Devi V., A. (2022). A systematic review on the effectiveness of Metacognitive

strategies and multimodal tools in blended learning English language classroom. *Theory

and Practice in Language Studies*, *12*(11), 2239-

2252. https://doi.org/10.17507/tpls.1211.03

Nalipay, M. J., Cai, Y., & King, R. B. (2019). Why do girls do better in reading than boys? How

parental emotional contagion explains gender differences in reading

achievement. *Psychology in the Schools*, *57*(2), 310-319.

 https://doi.org/10.1002/pits.22330

National Center for Education Statistics. (2023). *English Learners in Public Schools. Condition

of Education*. U.S. Department of Education, Institute of Education

Sciences. https://nces.ed.gov/programs/coe/indicator/cgf

Nations Report Card. (2019). Reading achievement in the nation: Grade 4.

https://www.nationsreportcard.gov/reading/nation/achievement/?grade=4

Ng, H., & Lam, P. (2022). Advancing the understanding of the flipped classroom approach with

students' perceptions of the learning environment: Variation between academic

disciplines. *Journal of Learning Development in Higher Education*, (24). https://doi.org/10.47408/jldhe.vi24.852

NWEA. (2016). *About NWEA*. Retrieved October 2016, from https://www.nwea.org/about/

NWEA. (2023). *RIT to concept link, kindergarten to grade 2*. Map Growth. Retrieved March 2023, from https://teach.mapnwea.org/impl/RIT2ConceptK2.pdf

Okolo, C. M., & Diedrich, J. (2014). Twenty-five years later: How is technology used in the education of students with disabilities? Results of a statewide study. ***Journal of Special Education Technology***, ***29***(1), 1-20. https://doi.org/10.1177/016264341402900101

Ormrod, J. E. (2011). *Educational psychology: Developing learners* (7th ed.). Pearson Education.

Oxley, E., & De Cat, C. (2019). A systematic review of language and literacy interventions in children and adolescents with English as an additional language (EAL). ***The Language Learning Journal***, 1-23. https://doi.org/10.31219/osf.io/92s6v

Padron, Y. N., & Waxman, H. C. (1996). Improving the teaching and learning of English language learners through instructional technology. ***International Journal of Instructional Media***, ***23***(4), 341-354.

Parkay, F. W., Anctil, E. J., & Hass, G. (2014). *Curriculum leadership: Readings for developing quality educational programs* (10th ed.). Pearson College Division.

Paul, J., & Jefferson, F. (2019). A comparative analysis of student performance in an online vs. face-to-face environmental science course from 2009 to 2016. ***Frontiers in Computer Science***, ***1***. https://doi.org/10.3389/fcomp.2019.00007

Radford, J. (2019). *Key findings about U.S. immigrants*. Pew Research Center. https://www.pewresearch.org/fact-tank/2019/06/17/key-findings-about-u-s-immigrants/

Radford, J., & Noe-Bustamante, L. (2019). *Immigrants in America: Key charts and facts*. Pew Research Center's Hispanic Trends Project. https://www.pewresearch.org/hispanic/2019/06/03/facts-on-u-s-immigrants/#fb-key-charts-english-proficiency

Reilly, D., Neumann, D. L., & Andrews, G. (2019). Gender differences in reading and writing achievement: Evidence from the national assessment of educational progress (NAEP). *American Psychologist*, *74*(4), 445-458. https://doi.org/10.1037/amp0000356

Rensaa, R. J., & Fredriksen, H. (2022). Gender perspectives on a flipped classroom environment. *Cogent Education*, *9*(1). https://doi.org/10.1080/2331186x.2022.2115832

Richards-Tutor, C., Baker, D. L., Gersten, R., Baker, S. K., & Smith, J. M. (2016). The effectiveness of reading interventions for English learners: A research synthesis. *Exceptional Children*, *82*(2), 144-169. https://search-ebscohost-com.ezproxy.liberty.edu/login.aspx?direct=true&db=eric&AN=EJ1085543&site=ehost-live&scope=site

Rovai, A. P., Baker, J. D., & Ponton, M. K. (2013). Social science research design and statistics: A practitioner's guide to research methods and *IBM SPSS*. Watertree Press LLC.

Ryoo, K. (2014). Teaching science through the language of students in technology-enhanced instruction. *Journal of Science Education and Technology*, *24*(1), 29-42. https://doi.org/10.1007/s10956-014-9518-4

Santikarn, B., & Wichadee, S. (2018). Flipping the classroom for English language learners: A study of learning performance and perceptions. *International Journal of Emerging Technologies in Learning (iJET)*, *13*(09), 123. https://doi.org/10.3991/ijet.v13i09.7792

Schmidt, S. M., & Ralph, D. L. (2016). The flipped classroom: A twist on teaching. *Contemporary Issues in Education Research (CIER)*, *9*(1), 1-6. https://doi.org/10.19030/cier.v9i1.9544

Schunk, D. H. (2016). *Learning theories: An educational perspective* (7th ed.). Pearson.

Schwichow, M., Anna Hellmann, K., & Mikelskis-Seifert, S. (2021). Pre-service teachers' perception of competence, social relatedness, and autonomy in a flipped classroom: Effects on learning to notice student preconceptions. *Journal of Science Teacher Education*, *33*(3), 282-302. https://doi.org/10.1080/1046560x.2021.1913332

Smith, G. E., & Throne, S. (2007). *Differentiating instruction with technology in K-5 classrooms*. International Society for Technology in educ.

Snyder, E., Witmer, S. E., & Schmitt, H. (2017). English language learners and reading instruction: A review of the literature. *Preventing School Failure*, *61*(2), 136-145. https://doi-org.ezproxy.liberty.edu/10.1080/1045988X.2016.1219301

TestPrep-Online. (n.d.). MAP Reading preparation. Retrieved 2020, from https://www.testprep-online.com/map-reading

Thum, Y. M., & Hauser, C. H. (2015). NWEA 2015 MAP Norms for student and school achievement status and growth. NWEA Research Report. Portland, OR: NWEA.

Tomlinson, C. A. (2016). *The differentiated classroom: Responding to the needs of all learners*. ASCD.

Turan, Z., & Akdag-Cimen, B. (2019). Flipped classroom in English language teaching: A

    systematic review. ***Computer Assisted Language Learning***, 1-17.

    https://doi.org/10.1080/09588221.2019.1584117

Unal, Z., & Unal, A. (2017). Comparison of student performance, student perception, and

    teacher satisfaction with traditional versus flipped classroom models. ***International***

    Journal of Instruction, ***10***(4), 145-164. https://doi.org/10.12973/iji.2017.1049a

Unruh, T., Peters, M. L., & Willis, J. (2016). Flip this classroom: A comparative

    study. ***Computers in the Schools***, ***33***(1), 38-58.

    https://doi.org/10.1080/07380569.2016.1139988

U.S. Department of Education. (2017, September). Educational resources for immigrants,

    refugees, asylees, and other new Americans.

    https://www2.ed.gov/about/overview/focus/immigration-resources.html

Van Brummelen, H. W. (2009). *Walking with God in the classroom: Christian approaches to*

    learning and teaching. Purposeful Design Publications.

Vaughn, S., Martinez, L. R., Wanzek, J., Roberts, G., Swanson, E., & Fall, A. (2017). Improving

    content knowledge and comprehension for English language learners: Findings from a

    randomized control trial. ***Journal of Educational Psychology***, 109(1), 22- 34.

    https://doi.org/10.1037/edu0000069

Vygotsky, L. (1986). *Thought and language*. Cambridge, MA: The MIT Press

Warner, R. M. (2013). ***Applied statistics: From bivariate through multivariate techniques***.

    SAGE Publications.

Washburne, C. W. (1953). Adjusting the program to the child. *Educational Leadership*, *11*,

    138-147. http://www.ascd.org/ASCD/pdf/journals/ed_lead/el_195312_washburne.pdf

Woolfolk, A., & Perry, N. E. (2012). *Child and adolescent development*. Pearson Higher Ed.

Yıldız, E., Doğan, U., Özbay, Ö., & Seferoğlu, S. S. (2022). Flipped classroom in higher

    education: An investigation of instructor perceptions through the lens of

    TPACK. *Education and Information Technologies*, *27*(8), 10757-

    10783. https://doi.org/10.1007/s10639-022-11059-8

Yochai, K. G. (2019). Identifying the consequences of actions and options and dimension of

    teachers' ethical sensitivity at various school levels: Implications on English learner

    student achievements. *Journal for Leadership and Instruction*, 18(1), 25-31.

    https://eric.ed.gov/?id=EJ1222249

Zou, D. (2020). Gamified flipped EFL classroom for primary education: Student and teacher

    perceptions. *Journal of Computers in Education*, *7*(2), 213-

    228. https://doi.org/10.1007/s40692-020-00153-w

Çevikbaş, M., & Argün, Z. (2017). An innovative learning model in digital age: Flipped

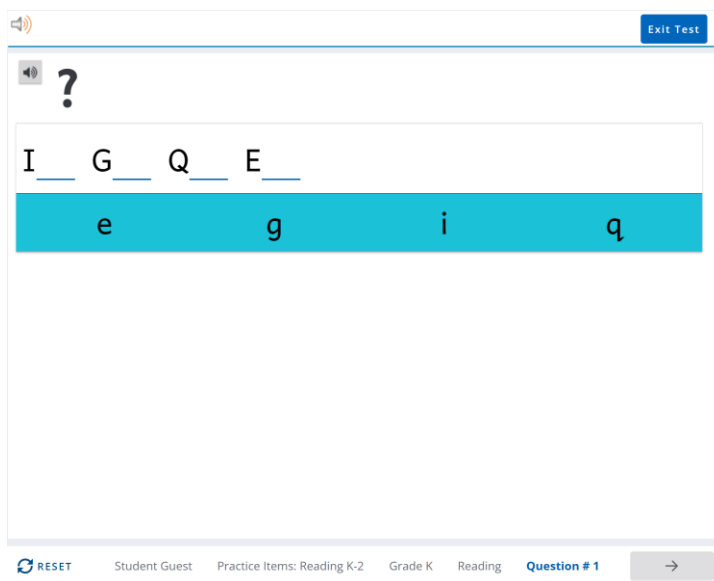   classroom. *Journal of Education and Training Studies*, *5*(11), 189.

    https://doi.org/10.11114/jets.v5i11.2322
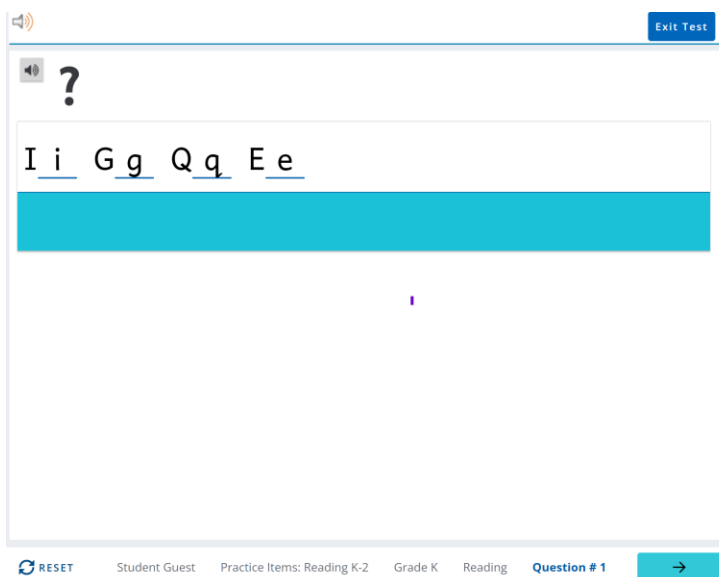
APPENDICES

Appendix A

INSTRUMENT: SAMPLE STUDENT PRE-TEST TEST ITEM (MAP Assessment)

practice.mapnwea.org **Username** = grow **Password** = grow

Sample question: "*Match the uppercase letters with the lowercase letters.*"

INSTRUMENT: SAMPLE STUDENT POST-TEST TEST ITEM

(MAP Assessment)

Sample question: "*Sh-ell Choose the picture that shows this word Sh-ell.*"

Appendix B: Permission to Conduct Study

District Superintendent

SCHOOL DISTRICT

SCHOOL PERMISSION TO CONDUCT RESEARCH

January 10, 2022

Dear Institutional Review Board:

The purpose of this letter is to inform you that I give Karen Twitty, a doctoral student at Liberty University, permission to conduct the research titled "The Flipped Classroom: A Blended Learning Approach to Improving Reading Readiness for Kindergarten English Language Learners" at ▮▮▮▮▮▮▮▮ School District ▮▮▮▮. She also has permission to access testing instrumentation and student achievement data to be used in her study. This permission is granted on the basis that procedures are established that ensure the privacy of the students and staff. We reserve the right to withdraw from the study at any time if our circumstances change. We understand that the data collected will remain entirely confidential

and may not be provided to anyone outside the research team without permission from the

Liberty University Institutional Review Board (IRB).

Sincerely,

████████████████████

████████████

Assistant Superintendent for Elementary Teaching and Learning

████████████████ School District ██████

████████████████████

████████████

Appendix C: IRB Approval

Liberty University Institutional Review Board

LIBERTY UNIVERSITY.
INSTITUTIONAL REVIEW BOARD

October 14, 2022

Karen Twitty
Philip Alsup

Re: IRB Exemption - IRB-FY21-22-786 THE FLIPPED CLASSROOM: A BLENDED LEARNING APPROACH TO IMPROVING READING READINESS FOR KINDERGARTEN ENGLISH LANGUAGE LEARNERS

Dear Karen Twitty, Philip Alsup,

The Liberty University Institutional Review Board (IRB) has reviewed your application in accordance with the Office for Human Research Protections (OHRP) and Food and Drug Administration (FDA) regulations and finds your study to be exempt from further IRB review. This means you may begin your research with the data safeguarding methods mentioned in your approved application, and no further IRB oversight is required.

Your study falls under the following exemption category, which identifies specific situations in which human participants research is exempt from the policy set forth in 45 CFR 46:104(d):

Category 1. Research, conducted in established or commonly accepted educational settings, that specifically involves normal educational practices that are not likely to adversely impact students' opportunity to learn required educational content or the assessment of educators who provide instruction. This includes most research on regular and special education instructional strategies, and research on the effectiveness of or the comparison among instructional techniques, curricula, or classroom management methods.

Final versions of your study documents can be found under the Attachments tab within the Submission Details section of your study on Cayuse IRB.

Please note that this exemption only applies to your current research application, and any modifications to your protocol must be reported to the Liberty University IRB for verification of continued exemption status. You may report these changes by completing a modification submission through your Cayuse IRB account.

If you have any questions about this exemption or need assistance in determining whether possible modifications to your protocol would change your exemption status, please email us at irb@liberty.edu.

Sincerely,
G. Michele Baker, MA, CIP
Administrative Chair of Institutional Research
Research Ethics Office

Appendix D: Purpose of Study Letter

11/5/2021

███████████ School District ████

Dear ████████,

As a graduate student in the School of Education at Liberty University, I am conducting research as part of the requirements for a Doctoral Degree in Education (Ed. D). The title of my research project is The Flipped Classroom: A Blended Learning Approach to Improving Reading Readiness for Kindergarten English Language Learners. The purpose of my research is to investigate the effectiveness flipped classroom instruction has on promoting reading achievement for English language learners.

I am writing to request your permission to conduct my research in ████████████ School District ████ in a minimum of eight kindergarten classrooms. The study will be a non-equivalent pre-test–post-test control group design that will take approximately four to eight weeks. Data will be collected at the beginning and the end of the study and will involve a student pre-test and a student post-test. I am also requesting permission to use the pre- and post-tests from the district approved curriculum.

Participants will be assigned to one of two groups. The control group will receive traditional teaching instruction. Participants will receive instruction during class time and complete homework outside of class time (e.g.: at home or in school setting). The treatment group will receive flipped classroom instruction. Participants in this group will receive instruction outside of class time via video instruction. Homework will be completed during instructional time with support from the teacher and peers.

The data collected will be used to assess the viability of the flipped classroom approach to improve reading achievement for English language learners. Parents will be notified of the study, but because the study is considered minimal risk, would be impractical were parental consent and student assent required, and a waiver will not negatively impact "the rights or welfare" of the students, the study qualifies for a waiver of consent (45 CFR 46.116(f)(3)).

Thank you for considering my request. If you choose to grant permission for the study and use of the curriculum approved MAP Fall, Winter, and Spring tests, please provide a signed statement on official letterhead indicating your approval.

Sincerely,

Karen W. Twitty
Doctoral Candidate

10/23/2022

█████ Elementary School

Dear █████,

As a graduate student in the School of Education at Liberty University, I am conducting research as part of the requirements for a Doctoral Degree in Education (Ed. D). The title of my research project is The Flipped Classroom: A Blended Learning Approach to Improving Reading Readiness for Kindergarten English Language Learners. The purpose of my research is to investigate the effectiveness flipped classroom instruction has on promoting reading achievement for English language learners.

I am writing to request your permission to conduct my research in █████ Elementary School in eight Kindergarten classrooms. The study will be a non-equivalent pre-test/post-test control group design that will take approximately eight weeks; four weeks to prepare the study and four weeks to conduct the study. Data will be collected at the beginning and the end of the study and will involve a student pre-test and a student post-test. I am also requesting permission to use the pre- and post-tests from the district-approved curriculum.

Participants will be assigned to one of two groups. The control group will receive traditional teaching instruction. Participants will receive instruction during class time and complete homework outside of class time (e.g.: at home or after school setting). The treatment group will receive flipped classroom instruction. Participants in this group will receive instruction outside of class time via video instruction. Homework will be completed during instructional time with support from the teacher and peers.

The data collected will be used to assess the viability of the flipped classroom approach to improve reading achievement for English language learners. Parents will be notified of the study, but because the study is considered minimal risk, would be impractical were parental consent and student assent required, and a waiver will not negatively impact "the rights or welfare" of the students, the study qualifies for a waiver of consent (45 CFR 46.116(f)(3)).

Thank you for considering my request.

Sincerely,

Karen W. Twitty
Doctoral Candidate

10/23/2022

████ █ Elementary School

████ ████

Dear ████████

As a graduate student in the School of Education at Liberty University, I am conducting research as part of the requirements for a Doctoral Degree in Education (Ed. D). The title of my research project is The Flipped Classroom: A Blended Learning Approach to Improving Reading Readiness for Kindergarten English Language Learners. The purpose of my research is to investigate the effectiveness flipped classroom instruction has on promoting reading achievement for English language learners.

I am writing to request your permission to conduct my research in ████████ Elementary School in eight Kindergarten classrooms. The study will be a non-equivalent pre-test–post-test control group design that will take approximately eight weeks; four weeks to prepare the study and four weeks to conduct the study. Data will be collected at the beginning and the end of the study and will involve a student pre-test and a student post-test. I am also requesting permission to use the pre- and post-tests from the district-approved curriculum.

Participants will be assigned to one of two groups. The control group will receive traditional teaching instruction. Participants will receive instruction during class time and complete homework outside of class time (e.g.: at home or after school setting). The treatment group will receive flipped classroom instruction. Participants in this group will receive instruction outside of class time via video instruction. Homework will be completed during instructional time with support from the teacher and peers.

The data collected will be used to assess the viability of the flipped classroom approach to improve reading achievement for English language learners. Parents will be notified of the study, but because the study is considered minimal risk, would be impractical were parental consent and student assent required, and a waiver will not negatively impact "the rights or welfare" of the students, the study qualifies for a waiver of consent (45 CFR 46.116(f)(3)).

Thank you for considering my request.

Sincerely,

Karen W. Twitty
Doctoral Candidate

Appendix E: Permission to use Instruments:

(Initial, Mid-year and End-of-year assessments from MAP)

District Superintendent

SCHOOL DISTRICT

SCHOOL PERMISSION TO CONDUCT RESEARCH

January 10, 2022

Dear Institutional Review Board:

The purpose of this letter is to inform you that I give Karen Twitty, a doctoral student at Liberty University, permission to conduct the research titled "The Flipped Classroom: A Blended Learning Approach to Improving Reading Readiness for Kindergarten English Language Learners" at ███████████ School District No. ██. She also has permission to access testing instrumentation and student achievement data to be used in her study. This permission is granted on the basis that procedures are established that ensure the privacy of the

students and staff. We reserve the right to withdraw from the study at any time if our

circumstances change. We understand that the data collected will remain entirely confidential

and may not be provided to anyone outside the research team without permission from the

Liberty University Institutional Review Board (IRB).

Sincerely,

██████████████

Assistant Superintendent for Elementary Teaching and Learning

████████████████ School District No. ██

┌─────────────────────────────┐
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└─────────────────────────────┘

████████████

Appendix F: Recruitment Letter

Recruitment Form - Teacher

Date: 10/23/2022
Kindergarten Teachers

████   Elementary School
███████

Dear Kindergarten Teachers,

As a graduate student in the School of Education at Liberty University, I am conducting research as part of the requirements for a Doctoral Degree in Education. I am writing to invite you to facilitate participation in my study. The title of my research project is THE FLIPPED CLASSROOM: A BLENDED LEARNING APPROACH TO IMPROVING READING READINESS FOR KINDERGARTEN ENGLISH LANGUAGE LEARNERS. The purpose of my research is to explore the effectiveness of using the flipped classroom model of instruction to enable English language learners (ELLs) obtain the pattern of the English language. My desired outcome is to help ELLs increase their English language proficiency so that they are better prepared to participate in a global society.

Participants in my research must be in kindergarten and around 5 years old. If you choose to facilitate my study, you will be asked to implement a flipped or traditional curriculum for reading instruction in your classroom and administer a pre-test and post-test to your students. The pre-test and post-test that will be administered to your students is the MAP testing system that the school district currently uses to conduct student assessments. If you are chosen to implement a flipped classroom, all resources (video lessons) to "flip" your classroom will be provided by the curriculum, found online, or created by you and the researcher. It should take approximately eight weeks for you to complete the procedure[s] listed. Student participation will be completely anonymous as I am asking teachers to remove student names before forwarding the results to me.

Participating classes will receive a $50 Visa® gift card as a thank you for taking part in the study after the research has concluded.

Thank you for considering my request. Attached is approval documentation by the district administration giving permission to conduct my research. If you agree to participate, please contact me by email at ███████████████   so that I can note your willingness and approval to participate in this study.

Karen W. Twitty
Doctoral Student

Appendix F: Recruitment Letter

Recruitment Form - Teacher

Date: 10/23/2022
Kindergarten Teachers

███████ Elementary School
██████████

Dear Kindergarten Teachers,

As a graduate student in the School of Education at Liberty University, I am conducting research as part of the requirements for a Doctoral Degree in Education. I am writing to invite you to facilitate participation in my study. The title of my research project is THE FLIPPED CLASSROOM: A BLENDED LEARNING APPROACH TO IMPROVING READING READINESS FOR KINDERGARTEN ENGLISH LANGUAGE LEARNERS. The purpose of my research is to explore the effectiveness of using the flipped classroom model of instruction to enable English language learners (ELLs) obtain the pattern of the English language. My desired outcome is to help ELLs increase their English language proficiency so that they are better prepared to participate in a global society.

Participants in my research must be in kindergarten and around 5 years old. If you choose to facilitate my study, you will be asked to implement a flipped or traditional curriculum for reading instruction in your classroom and administer a pre-test and post-test to your students. The pre-test and post-test that will be administered to your students is the MAP testing system that the school district currently uses to conduct student assessments. If you are chosen to implement a flipped classroom, all resources (video lessons) to "flip" your classroom will be provided by the curriculum, found online, or created by you and the researcher. It should take approximately eight weeks for you to complete the procedure[s] listed. Student participation will be completely anonymous as I am asking teachers to remove student names before forwarding the results to me.

Participating classes will receive a $50 Visa® gift card as a thank you for taking part in the study after the research has concluded.

Thank you for considering my request. Attached is approval documentation by the district administration giving permission to conduct my research. If you agree to participate, please contact me by email at ████████████████ so that I can note your willingness and approval to participate in this study.

Karen W. Twitty
Doctoral Student

Appendix F: Recruitment Letter

Recruitment Form – Parent

Date: 10/23/2022

Kindergarten Parents

██████████ Elementary School

██████████

Dear Kindergarten Parents,

As a graduate student in the School of Education at Liberty University, I am conducting research as part of the requirements for a Doctoral Degree in Education. The purpose of my research is to explore the effectiveness of using the flipped classroom model of instruction to enable English language learners (ELLs) obtain the pattern of the English language. My desired outcome is to help ELLs increase their English language proficiency so that they are better prepared to participate in a global society. I am writing to inform you of my study procedures.

Beginning October 2022, your kindergarten child will receive instruction using a flipped or a traditional curriculum for reading instruction in their classroom. The flipped instruction model uses technology to move instruction away from classroom instructional time. Classroom instructional time is then used to provide guided practice and enrichment. A pre-test and a post-test will be administered to your student. The testing will be the MAP testing system that the school district currently uses to conduct student assessments. The tests are less than twenty minutes in duration. Children in the class chosen to receive flipped classroom instruction, will use resources (video lessons) designed to "flip" the classroom. The resources will be provided by the curriculum, found online, or created by the classroom teacher and me. It should take approximately eight weeks for your student to complete the study. Participation will be completely anonymous as teachers will remove student names before forwarding the results to me.

Participating classes will receive a $50 Visa® gift card as a thank you for taking part in the study after the research has concluded.

If you have any questions about the study, please contact me at ██████████████

Kind Regards,

Karen W. Twitty

Doctoral Student

Annexe F: Lettre de recrutement

Formulaire de recrutement – Parent French

Date: 23/10/2022

Parents de maternelle
École primaire ████████
████████████████

Chers parents de maternelle,

En tant qu'étudiant diplômé de la School of Education de la Liberty University, je mène des recherches dans le cadre des exigences d'un doctorat en éducation. Le but de ma recherche est d'explorer l'efficacité de l'utilisation du modèle d'enseignement en classe inversée pour permettre aux apprenants de langue anglaise (ELL) d'obtenir le modèle de la langue anglaise. Mon résultat souhaité est d'aider les ELL à améliorer leur maîtrise de l'anglais afin qu'ils soient mieux préparés à participer à une société mondiale. Je vous écris pour vous informer de mes modalités d'études.

À partir d'octobre 2022, votre enfant de la maternelle recevra un enseignement utilisant un programme inversé ou traditionnel pour l'enseignement de la lecture dans sa classe. Le modèle d'enseignement inversé utilise la technologie pour éloigner l'enseignement du temps d'enseignement en classe. Le temps d'enseignement en classe est ensuite utilisé pour fournir une pratique guidée et un enrichissement. Un pré-test et un post-test seront administrés à votre élève. Le test sera le système de test MAP que le district scolaire utilise actuellement pour effectuer les évaluations des élèves. Les tests durent moins de vingt minutes. Les enfants de la classe choisie pour recevoir l'enseignement en classe inversée utiliseront des ressources (leçons vidéo) conçues pour « inverser » la classe. Les ressources seront fournies par le programme, trouvées en ligne ou créées par l'enseignant de la classe et moi-même. Cela devrait prendre environ huit semaines à votre étudiant pour terminer l'étude. La participation sera totalement anonyme car les enseignants supprimeront les noms des élèves avant de me transmettre les résultats.

Les classes participantes recevront une carte-cadeau Visa® de 50 $ en guise de remerciement pour leur participation à l'étude une fois la recherche terminée.

Si vous avez des questions sur l'étude, veuillez me contacter à ████████████ .

Sincères amitiés,

Karen W.Twitty

Étudiant en médecine

Shafi F: Wasikar daukar Ma'aikata

Fom din daukar ma'aikata – Iyaye Hausa

Ranar: 10/23/2022

Iyayen Kindergarten
██████████ Elementary School
████████████

Ya ku Iyayen Kindergarten,

A matsayina na dalibin digiri na biyu a Makarantar Ilimi a Jami'ar Liberty, Ina gudanar da bincike a matsayin wani ɓangare na buƙatun Digiri na Digiri a Ilimi. Manufar bincikena shine don bincika tasirin amfani da tsarin koyarwa na jujjuya don baiwa masu koyon harshen Ingilishi (ELLs) damar samun tsarin harshen Ingilishi. Sakamakon da nake so shi ne in taimaka wa ELLs su ƙara ƙwarewar Ingilishi don su kasance da shiri sosai don shiga cikin al'ummar duniya. Na rubuto ne don sanar da ku hanyoyin karatuna.

Tun daga Oktoba 2022, yaran ku na kindergarten za su karɓi koyarwa ta amfani da jujjuyawar ko tsarin koyarwa na gargajiya don karantawa a cikin ajinsu. Samfurin koyarwa da aka jujjuya yana amfani da fasaha don kawar da koyarwa daga lokacin koyarwa a aji. Sannan ana amfani da lokacin koyarwa a aji don ba da jagoranci da haɓakawa. Za a yi wa ɗalibinku pre-test da post-test. Jarabawar za ta kasance tsarin gwajin MAP da gundumar makaranta ke amfani da su a halin yanzu don gudanar da tantancewar ɗalibai. Gwaje-gwajen ba su wuce mintuna ashirin ba. Yara a cikin ajin da aka zaɓa don karɓar koyarwar azuzuwa, za su yi amfani da albarkatu (darussan bidiyo) waɗanda aka ƙera don "juya" aji. Za a samar da albarkatun ta manhajar karatu, samu akan layi, ko kuma malamin aji da ni da ni. Zai ɗauki kimanin makonni takwas don ɗalibin ku ya kammala nazarin. Kasancewar ba za ta kasance ba a ɓoye gaba ɗaya saboda malamai za su cire sunayen ɗalibai kafin su tura min sakamakon.

Azuzuwan shiga za su sami katin kyautar $50 Visa® a matsayin godiya don shiga cikin binciken bayan an kammala binciken.

Idan kuna da wasu tambayoyi game da binciken, da fatan za a tuntuɓe ni a ████████████ .

Gaisuwan alheri,

Karen W. Twitty

Dalibin Doctoral

ضمیمه F : د استخدام لیک

Pashto د استخدام فورمه – پلار

نېټه: 10/23/2022

د ورکتون والدین

د ███████

،د ورکتون گرانو والدینو

د لیبرټي پوهنتون د ښوونې او روزنې په ښوونځي کي د فراغت زده کونکي په توگه، زه په تعلیم کي د دوکتورا درجي د (ELLs) ارتباو د یوي برخي په توگه څېرنه ترسره کوم. زما د څېرنې موخه دا ده چي د انگلیسي ژبي زده کونکي انگلیسي ژبي نمونه ترلاسه کولو لپاره د لارښوونو فلپ شوي ټولگي ماډل کارولو اغیزي وپلټئ. زما مطلوب پایله دا ده چي د انگلیسي ژبي مهارت لورولو کي مرسته وکړي ترڅو دوی په نړیواله ټولنه کي د گډون لپاره ښه چمتو شي ELLs د .زه تاسو ته زما د مطالعي پروسیجرونو خبرولو لپاره لیکم

د 2022 د اکتوبر په پیل کي، ستاسو د ورکتون ماشوم به په خپل ټولگي کي د لوستلو لارښوونی لپاره د فلپ شوي یا دودیز نصاب په کارولو سره لارښوونی ترلاسه کړي. د فلپ شوي لارښوونی ماډل ټیکنالوژي کاروي ترڅو لارښوونی د ټولگي د تدریسي وخت څخه لري کړي. د ټولگي درسي وخت بیا د لارښود تمرین او بدایه کولو لپاره کارول کیږي. یو مخکینی ازموینی سیستم وي چي اوس مهال د MAP ازموینه او وروسته ازموینه به ستاسو زده کونکي ته اداره کیږي. ازموینه به د ښوونځي ولسوالی د زده کونکو ارزونو ترسره کولو لپاره کاروي. د ازموینو موده له شلو دقیقو څخه کمه ده. په ټولگي کي هغه ماشومان چي د ټولگي د فلپ شوي لارښوونی ترلاسه کولو لپاره غوره شوي، د ټولگي د "پلټلو" لپاره ډیزاین شوي سرچینی (ویډیو درسونه) کاروي. سرچینی به د نصاب لخوا چمتو کیږي، آنلاین موندل کیږي، یا د ټولگي ښوونکي او زما لخوا رامینځته شوي. دا باید ستاسو د زده کونکي لپاره د مطالعي بشپړولو لپاره نږدي اته اونی وخت ونیسي. گډون به په .بشپر ډول نامعلوم وي څکه چي ښوونکي به ما ته د پایلو لیرلو دمخه د زده کونکو نومونه لري کړي

برخه اخیستونکي ټولگي به د $ 50 ویزا ® ډالی کارت ترلاسه کړي د څېرني له پای ته رسیدو وروسته په

.مطالعي کي د برخه اخیستو لپاره مننه

███████ که تاسو د مطالعي په اړه کومه پوښتنه لرئ، مهرباني وکړئ ما سره اړیکه ونیسئ

،احترامات

کیرن ډبلیو ټویټي

دوکتورا محصل

Apéndice F: Carta de contratación

Formulario de reclutamiento – Padre Spanish

Fecha: 23/10/2022

Padres de Kindergarten
Escuela Primaria ███████

███████████

Estimados padres de familia de kínder,

Como estudiante de posgrado en la Escuela de Educación de Liberty University, estoy realizando investigaciones como parte de los requisitos para obtener un Doctorado en Educación. El propósito de mi investigación es explorar la efectividad del uso del modelo de instrucción de aula invertida para permitir que los estudiantes del idioma inglés (ELL, por sus siglas en inglés) obtengan el patrón del idioma inglés. Mi resultado deseado es ayudar a los ELL a aumentar su dominio del idioma inglés para que estén mejor preparados para participar en una sociedad global. Le escribo para informarle sobre mis procedimientos de estudio.

A partir de octubre de 2022, su hijo de jardín de infantes recibirá instrucción utilizando un plan de estudios invertido o tradicional para la instrucción de lectura en su salón de clases. El modelo de instrucción invertida utiliza la tecnología para alejar la instrucción del tiempo de instrucción del salón de clases. El tiempo de instrucción en el salón de clases se usa luego para proporcionar práctica guiada y enriquecimiento. Se administrará una prueba previa y una prueba posterior a su estudiante. La prueba será el sistema de prueba MAP que el distrito escolar usa actualmente para realizar las evaluaciones de los estudiantes. Las pruebas tienen menos de veinte minutos de duración. Los niños de la clase elegida para recibir instrucción en el aula invertida utilizarán recursos (lecciones en video) diseñados para "invertir" el aula. Los recursos serán proporcionados por el plan de estudios, se encontrarán en línea o serán creados por el maestro de la clase y por mí. Debe tomar aproximadamente ocho semanas para que su estudiante complete el estudio. La participación será completamente anónima ya que los maestros eliminarán los nombres de los estudiantes antes de enviarme los resultados.

Las clases participantes recibirán una tarjeta de regalo Visa® de $50 como agradecimiento por participar en el estudio una vez que la investigación haya concluido.

Si tiene alguna pregunta sobre el estudio, comuníquese conmigo a ███████████████ .

Atentamente,

Karen W. Twitty

Doctorando

Kiambatisho F : Barua ya Kuajiri

Fomu ya Kuajiri – Mzazi Swahili

Tarehe: 10/23/2022

Wazazi wa Chekechea
Shule ya Msingi ya ██████

████████████

Ndugu Wazazi wa Chekechea,

Kama mwanafunzi aliyehitimu katika Shule ya Elimu katika Chuo Kikuu cha Uhuru, ninafanya utafiti kama sehemu ya mahitaji ya Shahada ya Uzamivu katika Elimu. Madhumuni ya utafiti wangu ni kuchunguza ufanisi wa kutumia modeli ya kufundishia ya darasani ili kuwawezesha wanafunzi wa lugha ya Kiingereza (ELLs) kupata muundo wa lugha ya Kiingereza. Matokeo ninayotamani ni kuwasaidia ELLs kuongeza ustadi wao wa lugha ya Kiingereza ili wajitayarishe vyema kushiriki katika jamii ya kimataifa. Ninakuandikia kukujulisha taratibu zangu za masomo.

Kuanzia Oktoba 2022, mtoto wako wa shule ya chekechea atapokea maagizo kwa kutumia mtaala uliogeuzwa au wa kitamaduni wa mafundisho ya kusoma darasani mwao. Muundo wa maelekezo yaliyogeuzwa hutumia teknolojia ili kuhamisha maagizo kutoka kwa wakati wa kufundishia darasani. Wakati wa kufundishia darasani basi hutumika kutoa mazoezi ya mwongozo na uboreshaji. Jaribio la awali na la baada ya mtihani litasimamiwa kwa mwanafunzi wako. Upimaji utakuwa mfumo wa upimaji wa RAMANI ambao wilaya ya shule hutumia kwa sasa kufanya tathmini za wanafunzi. Muda wa majaribio ni chini ya dakika ishirini. Watoto darasani waliochaguliwa kupokea maelekezo ya darasani, watatumia nyenzo (masomo ya video) iliyoundwa "kugeuza" darasa. Nyenzo zitatolewa na mtaala, unaopatikana mtandaoni, au iliyoundwa na mimi na mwalimu wa darasa. Inapaswa kuchukua takriban wiki nane kwa mwanafunzi wako kukamilisha somo. Kushiriki hakutakuwa na majina kabisa kwani walimu wataondoa majina ya wanafunzi kabla ya kupeleka matokeo kwangu.

Madarasa yatakayoshiriki yatapokea kadi ya zawadi ya Visa® ya $50 kama shukrani kwa kushiriki katika utafiti baada ya utafiti kukamilika.

Ikiwa una maswali yoyote kuhusu utafiti, tafadhali wasiliana nami kwa ██████████████ .

Salamu za dhati,

Appendix G: Teacher Consent Form
CONSENT FORM

"The Flipped Classroom: A Blended Learning Approach to Improving Reading

Comprehension for Kindergarten English Language Learners"

Karen W. Twitty, Principal Researcher

Liberty University

College of Education

You are invited to participate in a research study concerning the implementation of the flipped classroom. The following information is provided for you to decide whether you wish to participate in the present study. You were selected as a possible participant because you currently teach kindergarten at Hamilton Elementary School.

Background Information:

The purpose of this study is to determine the effectiveness flipped classroom instruction has on promoting reading achievement for English language learners. The results of this study will help educators find ways to improve reading instruction for English language learners. It is important because better reading readiness skills help students reach higher levels of academic achievement.

The study will be a non-equivalent control group design that will take approximately eight weeks to prepare and conduct. Data will be collected at the beginning and the end of the study and will involve a student pre-test and a student post-test.

Procedures:
If you agree to participate in this study, the following activities will take place:
1. You will meet with the researcher to organize and collect resources, share lesson plans and select/make videos for the study.
2. You will administer a pre-test (approximate time: 25 minutes).
3. There will be two study groups. Control group students will take a pre-test, participate in class as usual, and take a post-test. Treatment group students will take a pre-test, complete classwork at home (via teacher created or from curriculum/online) and complete activities and/or homework in class the next day.
4. You will administer a post-test (approximate time: 25 minutes).

5. It will take eight weeks to prepare and complete the study. Your participation will be completely confidential, and no personal, identifying information will be required.
During the implementation period, the researcher will make frequent visits to the classroom to ensure the study is progressing appropriately. The researcher will be the sole individual involved in data collection.

Risks and Benefits of being in the Study:

There are minimal risks associated with this study. The risks are no more than the participants would encounter in everyday life. There are no direct benefits to participation.

Compensation:

Researcher will award a $50 Visa Gift Card to participating classes.

Confidentiality:

The records of this study will be kept private. In any sort of report that I might publish, I will not include any information that will make it possible to identify a subject. Research records will be stored securely and only the researcher will have access to the records.

Voluntary Nature of the Study:

Please be aware that this is a voluntary study, and you are free to decide not to participate or to withdraw at any time without affecting your relationship with Liberty University, the researcher, the school, or the local board of education.

Contacts and Questions:

The researcher conducting this study is Karen W. Twitty. You may ask any questions you have now. ███████████████████████████. You may also contact the researcher's faculty advisor, Dr. Phillip Alsup, at ██████████████

If you have any questions or concerns regarding this study and would like to talk to someone other than the researcher, you are encouraged to contact the Institutional Review Board, 1971 University Blvd, Green Hall 1887, Lynchburg, VA 24515 or email at irb@liberty.edu.

Please sign your consent with full knowledge of the nature and purpose of the procedures. A copy of this consent form will be given for you to keep.

Statement of Consent: I have read and understood the above information. I have asked questions and have received answers. I consent to participate in the study.

Signature of Participant: _____ Date: _____

Signature of Researcher: _____ Date: _____
Karen W. Twitty, School of Education at Liberty University, Researcher

Researcher Contact Information: Karen W. Twitty

████████████████████
████████████

Liberty University Contact Information: Institutional Review Board
1971 University Blvd, Suite 1837
Lynchburg, VA 2450215
Email at irb@liberty.edu.

IRB Code Numbers: IRB-FY21-22-786   IRB Expiration Date: N/A