

5-2019

# How Blended Learning Impacts Student Engagement in an Early Childhood Classroom

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How Blended Learning Impacts Student Engagement in an Early Childhood Classroom

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An Action Research Project Presented  
in Partial Fulfillment of the Requirements  
For the Degree of Master of Education

May 2019

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### Abstract

The purpose of this action research project was to determine if teaching with a blended learning approach increases student engagement in an early childhood classroom. Participants were three year-olds with individualized education plans and general education four and five year-olds in a half day preschool program. Students came from a wide variety of backgrounds and different socio-economic backgrounds. Quantitative data was collected through observation by recording which students were actively engaged, passively engaged, disengaged, or disruptive during a twenty –minute small group time for nine weeks. Qualitative data was collected through observations by the teacher and para-educator, interviews with students, and journal notes.

*Keywords: blended learning, student engagement, early childhood*

### **How Blended Learning Impacts Student Engagement in an Early Childhood Classroom**

Student engagement is a desired element for teachers in any classroom across the world. Teachers want students to actively participate in their lessons, activities, and projects. They are constantly trying new ways to capture their students' attention and keep their interest. Early childhood teachers, along with other teachers, are trying to make sense of what strategies are research-based and what will make the greatest impact in their classroom. Out of all the fads in education, blended learning has found its way into the classroom and will be staying for a while as more and more school districts push for implementing blended learning in their schools. Teachers are wondering if blended learning will be the answer to the long-lived question of figuring out what increases student engagement.

The focus of this action research was to determine what type of impact-blended learning has on student engagement in an early childhood classroom, specifically an inclusive preschool half-day program. With a push for academics in early grades, such as preschool, early childhood teachers need something to help the students focus on the task. One strategy to help with student engagement, which has been researched extensively in education, is blended learning. This type of learning allows teachers to be flexible in their teaching, to focus more on personalization and differentiation based on student needs, and bring in a technology piece that keeps students wanting more. Using technology can keep the students more engaged and help play catch up in some academic areas the students are having struggles in.

There has been much research done on blended learning and the impact it has in the classroom. Teachers are finding that using blended learning is helping to implement more technology into the classroom and students who normally do not speak up in a large group setting are getting involved in online discussions (Umphrey, 2013). Students are learning to take

responsibility in their learning, learning to cooperate and collaborate with other students in class or across the world, and students are learning they have a voice in their education. Different models of blended learning have been researched to see what grade levels best fit and teachers are then able to blend the models together to further fit their classroom dynamic. Teachers are seeing an increase in student motivation for learning, student engagement, and a rise in student achievement. Blended learning comes with a few downfalls as well. Teachers have to give up some of their authority and need to be flexible, the cost of integrating technology into the school, and technology itself, wondering if it will work or not. Blended learning is not just for middle and high school students, it can reach younger students as well. The blend for an early childhood classroom needs to be developmentally appropriate with the age of the students. Younger students are not expected to use technology for an entire lesson and work off a learning management system (LMS).

What the researcher is seeking to find out is what type of impact does blended learning have on student engagement in an early childhood classroom. Will the impact be positive, neutral, or negative? The research has shown positive links between student engagement and blended learning (Al Mosawi & Wali, 2015; Chai, 2017; Fisher et al., 2018) and research has also shown no links between student engagement and blended learning (Henrie et al., 2015) along with the results from this study. Using this research, the teacher researcher will be able to tell whether or not blended learning is the best fit for her early childhood classroom. The research and results will help determine if blended learning needs to be incorporated into the rest of the school day as well. The impact of the study will help determine how small groups and other learning activities will be facilitated in her classroom in years to come.

## **Review of the Literature**

Teaching has evolved throughout the years to better fit the students of each generation. Different pedagogies have been argued, a variety of teaching strategies have been introduced and implemented, and discussions on the next teaching fad have been mainstreamed. Many strategies have been tested and a consensus for teaching in the 21<sup>st</sup> century has been made; blended learning is on the rise in classrooms not just in America, but across the world (Al Mosawi & Wali, 2015; Blended Learning in Action, 2015; Fleck, 2012; Fisher, Perényi, & Birdthistle, 2018; Griffin, 2014; Henrie, Bodily, Manwaring, & Graham, 2015; Imbriale, 2013; Jachin & Usagawa, 2017; Kazakoff, Macaruso, & Hook, 2018; Nazarenko, 2015; Saritepeci & Çakır, 2015; Schechter, Maracaruso, Kazakoff, & Brooke, 2015). There has been a lot of research done on blended learning and the effects it has in the classroom. Through this research, advantages and disadvantages have been made known. Teachers are trying everything in their toolbox to keep up with ever-changing student needs and interests, wondering if their tactics will keep the students engaged. With students of all ages using more technology, it has become common to find some sort of device in each home. President and CEO of the Virtual High School and Consortium in Massachusetts, Liz Pape (2010), states, “blended teaching helps teachers find an approach that is more engaging for this generation of students” (p. 22).

### **Student Engagement**

Student engagement has been defined as the quality of involvement, enthusiasm towards learning, and the student’s interest level during learning (Fisher et al., 2018; Griffin, 2014; Henrie et al., 2015). Saritepeci and Çakır (2015) believe the varying levels of student engagement in a classroom activity and/or lesson is an important indicator of the quality of the activity and/or lesson and failure to keep students engaged leads to problems for teachers and

students. Keeping students engaged during learning has been a teacher's main objective for years, even decades. In a traditional classroom setting, it would be impossible to capture every students' attention and keep them engaged throughout the entire lesson (Umphrey, 2013). With students' needs constantly changing, student behaviors going up and down, student interests being different, ability levels differing from student to student; teachers need to find a strategy to help corral student engagement and get them motivated to learn. According to the studies of, Al Mosawi and Wali (2015), Fisher et al. (2018), Griffin (2014), Henrie et al. (2015), Kazakoff et al. (2018), and Saritepeci and Çakır (2015), blended learning had a positive effect on student engagement and performance in learning.

### **Blended Learning**

Many teachers have started to move away from the traditional approach to teaching and are trying to find ways to boost student engagement. Traditional teaching is best described as face-to-face learning, where the teacher is standing at the front of the room lecturing their students. However, times are changing and students are changing. A new teaching technique has come into play, blended learning. In recent times, there has been an increased interest for this new format of learning (Fleck, 2012; Güzer & Caner, 2013; Nazarenko, 2015). Blended learning is viewed as a cross between face-to-face learning and online learning, but blended learning has been defined in a variety of ways. In Horn and Stalker's (2011) definition, "blended learning incorporates face-to-face, teacher-led instruction in conjunction with student-led digital activities in order to provide students with a personalized educational path" (as cited in Kazakoff et al., 2018, p. 431). During an interview by Jan Umphrey (2013), Catlin Tucker stated her definition of blended learning as, "a formal education program in which a student is engaged in active learning in part online where they have some control over the time, place, and pace and in part at

a brick-and-mortar location away from home” (p. 37). At the beginning of their study, Verkroost, Meijerink, Lintsen, and Veen (2008) state, “blended learning is defined as the total mix of pedagogical methods, using a combination of different learning strategies, both with and without the use of technology” (p. 501). Putting all the definitions together, blended learning can be easily defined as a teaching format that incorporates a traditional classroom model blended with a technology piece and personalized learning for each student (Fleck, 2012; Nazarenko, 2015; Kazakoff et al., 2018; Umphrey, 2013). Blended learning is not giving students a device to play games on. This new-age learning can be the shift teachers are looking for to bring their class into the 21<sup>st</sup> century. However, with all new learning formats, there are advantages, disadvantages, and limitations to blended learning.

### **Advantages.**

One advantage of blended learning is the aspect of having personalized learning in the classroom during blended learning. Teachers are able to make play-lists and activities based on the student’s needs. The students are able to go down their own path at their own pace in whatever place in the classroom they want (Tucker, Wycoff, & Green, 2017). Another advantage for this type of learning is it can offer students a way to be more engaged in their learning by using technology. Nowadays, students of all ages and teachers have some sort of technology device whether it be a smart phone, a tablet of sorts, a google home, a computer, etc. They all understand how to operate these devices and are engaged with what they are doing on them. Teachers must also realize they take part in making the digital learning space engaging, with providing higher-order thinking questions, interesting topics, allowing for creativity and exciting curiosity (Tucker as cited by Umphrey, 2013). With blended learning, part of the student’s learning can take place on a device. Teachers are able to create a common place for

learning in a digital space where students are free to discuss and answers questions in their own time, reducing the anxiety and shyness of the students needing to answer in front of the entire class (Umphrey, 2013; Vander Ark, Mejia, Woolley-Wilson, & Funk, 2012). To name a few more benefits of a blended learning classroom students will have more instructional time (one-on-one, small groups, online), students will be empowered to take their learning into their own hands, and learn to collaborate with others (even outside the classroom).

### **Disadvantages.**

With all the benefits from using a blended learning environment, there comes some disadvantages. One of those disadvantages is the technology piece itself. Sometimes the device does not work effectively (Fleck, 2012), the device has not been charged, or the Wi-Fi connectivity is not working efficiently. Put all these factors into play and the blended learning lesson cannot be performed to its full potential. One of the biggest disadvantages in implementing blended learning in the classroom is cost. Technology costs money. Teachers would need to find a way to get the funds to have technology in their classrooms. Whether it be writing a grant or seeing if the budget has money saved for some technology. Another disadvantage to blended learning is on the teacher side of things. Teachers in a blended learning classroom would have to change their mindset and let go of control (Fleck, 2012; Imbriale, 2013; Linton, 2018; Tucker, 2013). Letting go of control means shifting the classroom from a teacher-led classroom to a student-centered classroom. This will free up what the teacher wants their students to do and make room for what the students need to do (Linton, 2018). Which leads to students gaining control of their learning and making decisions on what to move onto next, how quickly they are moving, and figuring things out on their own. Going along on the teacher side of disadvantages, blended learning takes time. The classroom dynamic will not completely change

overnight (Tucker, 2013; Tucker et al., 2017). Another disadvantage of blended learning can be low work ethic from the students. They will need to adapt to the switch just like teachers. Not all students will be ready to self-guide their own learning overnight.

### **Limitations.**

Limitations can be derived from disadvantages. Technology in itself is a disadvantage of blended learning with the high cost of devices and Wi-Fi not working. Technology can also be a limitation as well. Some devices will limit what you can and cannot do in blended learning. If a classroom has a set of older devices, certain apps and programs might not be able to run on them. In addition, teachers might rely too heavily on what the technology can do for the students and shy away from what they need to do for their students.

Teacher limitations include time and professional development. Bausmith and Barry (2011), found professional development on blended learning was not useful for teachers (as cited in Zhonggen & Yuexia, 2015). On the other hand, Ryan Imbriale (2013) wished his teachers had more professional development before implementing blended learning in his school. Pape (2010) also mentioned teachers needing time and professional development on blended learning to be prepared. Teachers not knowing how to use the devices or how to instruct the students on using the devices will not make it very far in blended learning. Another limitation is the amount of time teachers have in a school day or school week. Creating playlists and personalizing learning for students will take time, time that teachers do not have built in to their schedule. With many advantages, disadvantages, and limitations for blended learning, why would a teacher want to bring this new learning format into their classroom?

### **Why use blended learning?**

The benefits of blended learning outweigh the disadvantages and limitations. As mentioned earlier, studies have shown a positive relationship between blended learning and student engagement and performance (Al Mosawi & Wali, 2015; Fisher et al., 2018; Griffin, 2014; Henrie et al., 2015; Kazakoff et al., 2018; and Saritepeci & Çakır, 2015). In a blended learning classroom, students will be able to embrace their full potential with personalized learning, teachers will be able to facilitate learning not just lecturing, and teachers will be able to meet with students one-on-one or in small groups for a longer period of time (Al Mosawi & Ahmed Wali, 2015). First-grade teacher, Wendy Funk (2012), said about her own classroom, “blended learning has made it possible to my students’ academic and support needs. They are engaged at a just right-level of instruction... I am to work with smaller groups and allow for differentiated instruction” (p. 23). Students find themselves becoming more engaged with the use of blending technology into the classroom (Pape, 2010) and are becoming more excited about being at school (Blended Learning in Action, 2015). In upper elementary, middle school, and high school, teachers are able to get data from their students in real time from the LMS they are using. Teachers can also find out if students need help with an item on the lesson after a short quiz and review it in the same day. Whereas in a traditional classroom, quizzes (or worksheets) are done with paper and pencil. This could take a teacher longer to grade and figure out who needs help. Ryan Imbriale (2013), principal of Patapsco High School and Center for the Arts, summed up the reason on why to use blended learning; “personalized learning that includes individualized pacing accompanied by excellent classroom teaching is a winning combination” (p. 34).

### **Blended Learning in the Classroom**

Just like with traditional classrooms, blended learning will look different in every classroom (Kazakoff et al., 2017). Teachers will have different classroom environment set-ups in their blended learning classroom. They are also able to use their own personal twist to blended learning to fit their pedagogical goals (Kazakoff et al., 2017). Cooney, Gupton, and O'McLaughlin (2000), started their study of blended learning in a prekindergarten classroom, blurring the line between work and play. Elementary school teachers might be using station rotations, giving their students time to work on a device and have time to meet with the teacher in small groups (Al Mosawi & Ahmed Wali, 2015; Tucker et al., 2017). In a middle school or high school classroom, teachers might be using a LMS to provide blended learning in their classroom, with opportunities to complete items outside the classroom, along with face-to-face instruction with their students (Al Qudah, Rashid, Iffah, & Al Ani, 2018; Fleck, 2012; Güzer & Caner, 2013; Kazakoff et al., 2017; Zhonggen & Yuexiu, 2015). Early childhood, elementary, middle school, and high school teachers will have different blended learning scenarios going on based on their student's needs, abilities, and what is developmentally appropriate for their age group.

Implementing blended learning into any classroom will not happen overnight (Tucker, 2013; Tucker et al., 2017). It will take time and professional development for teachers to understand the LMS they are using, understanding the devices they have been given, finding ways to fully differentiate lessons on the LMS or in the classroom, and to truly understand what blended learning will look like in their classroom (Imbriale, 2013). Teachers need to blend the face-to-face learning with online learning accurately to make this format work efficiently and effectively (Güzer & Caner, 2013). Students will also need time to adjust to their new environment and their new roles of responsibility (Linton, 2018). Switching from one teaching

technique to another takes time, especially if teachers are not quite comfortable yet with the switch. Teachers will also need professional development on how to implement the different models of blended learning and real life examples on how other teachers are using blended learning their classrooms.

### **Models of blended learning.**

There are different models of blended learning, even between levels of education. These models of blended learning refer to how the content knowledge from the teacher is being presented. In their study, Verkroost et al. (2008), talk about the different dimensions (models) of learning they found in higher education. These dimensions (models) consist of structured/unstructured, individual/group, face-to-face/at-a-distance, and self/teacher directed. Linton (2018) describes some other models that can be used to make blended learning work in elementary classroom (as well as middle/high school): rotation model (station rotation, lab rotation, flipped classroom, and individual rotation), flex model, á la carte model, and the enriched virtual model. Tucker et al. (2017) describes different sub models from and strategies for implementing blended learning that can be easily incorporated into elementary classrooms. The last three models explained are mainly for high school and higher education classrooms.

### ***Rotation Models.***

*Station Rotation.* In a station rotation model, students are rotating through a variety of stations, stopping at each station (Linton, 2018; Tucker et al., 2017) with at least one of the stations being an online learning station (Tucker et al., 2017). For this model, all students are supposed to rotate through every station. They can rotate in a specific way (i.e. clockwise or counterclockwise) or at the teachers' discretion (Staker & Horn, 2012). Station rotation is similar to a daily five rotation for literacy or a daily three rotation for math. The main goal of this model

is for the teacher, “to design dynamic learning station activities that employ different learning modalities and allow for more differentiation and individualization to improve comprehension, retention, and the students’ ability to apply information” (Tucker et al., 2017, p. 109). The benefits for using the station rotation model are providing multiple activities for the different stations increase student engagement, students are able to rotate around the room, teachers are able to differentiate small groups, and teachers are able to maximize learning time by having more time to work one-on-one or in small groups (Tucker et al., 2017).

*Whole Group Rotation.* In a whole group rotation (derived from the lab rotation model), the whole class rotates to a device after an instructional period of time. The classroom would need to be one-to-one with devices or have the ability to check out a class set of devices to make this model work efficiently (Linton, 2018; Tucker et al., 2017). During this model, students do not actually move from station to station, they stay put in the place of their choice. Whole group rotation works best with an LMS that already helps differentiate materials for the students. Whole group rotation is not teacher-led instruction; it is student-centered learning. While every student is working online on their assignments, the teacher is able to work individually with students who need help and conference with students about their work (Tucker et al., 2017). The teacher’s role is to help students with questions about their work, not trouble-shoot technology problems.

*Flipped Classroom.* In a flipped classroom, the delivery of learning is ‘flipped.’ Instead of lecturing at school and working on problems or discussion questions at home, the classroom flips. Students are able to immerse themselves in learning via pre-recorded lectures, assigned readings, videos, etc. at home (Fisher et al., 2018; Tucker et al., 2017), whereas the classroom is saved for applying the knowledge for homework or projects they learned outside of class. During

this time the teacher is able to rotate around the room answering questions, helping clear up confusions, and giving some face-to-face instruction if needed (Fisher et al., 2018; Linton, 2018; Staker & Horn, 2012; Tucker et al., 2017). Completing classwork at home might not be the ideal situation for some students. With working parents, students can feel isolated and alone when they are working through their learning (Tucker et al., 2017).

*Individualized Rotation.* “The individual rotation model provides the greatest flexibility for personalized learning and student control over time, place, path, and pace” (Linton, 2018, p. 6). With this rotation model, students are given more responsibility for their learning and are expected to complete their work off their playlists. Instruction is fluid between online and offline activities (Tucker et al., 2017). Teachers are able to develop personalized playlists to help differentiate learning between students and meet with students one-on-one or in small group. Playlists consist of activities students need to cycle through; many have must-do activities and can-do activities. Since playlists are differentiated to the student’s needs, the playlists are different between students.

*Flex Model.* With a flex model of blended learning, normally used in high school settings, the students are receiving a bulk of the learning through online instruction at school (Linton, 2018; Staker & Horn, 2012). In this model, students travel along an individualized path of learning. Students have the opportunity to work collaboratively with each other during the day or they can choose to study on their own (Staker & Horn, 2012). Some of the online learning dictates students to complete work offline (Linton, 2018). Teachers can be stationed in the classroom to provide activities, small group instruction, projects, or help with the content students are learning (Linton, 2018; Staker & Horn, 2011). In some situations teachers in a flex model classroom offer minimal support to students (Staker & Horn, 2012; Horn & Staker, 2011).

*Á La Carte Model.* The á la carte model is also commonly used in a high school setting to help provide some flexibility and choice in how the students want to do their learning (Linton, 2018). This model allows students to participate in a course entirely online (Linton, 2018; Tucker et al., 2017). Students are provided with a common area in the school to work on their assignments and schoolwork, but are not expected to do the course completely at school. They are able to do some of the coursework at home if they wish (Linton, 2018). The teacher mainly communicates with students online, but there may be an adult to help with technical issues in the common area in the school (Linton, 2018). This model also allows students to take courses not offered at their school (Linton, 2018).

*Enriched-Virtual Model.* The enriched-virtual model is not a course-by-course model, but a whole school initiative (Staker & Horn, 2012). Students complete all their learning in an online environment. With all of their classes online, this model is geared more towards high school students and higher education students. Students have all of their coursework, projects, and activities delivered to them through their online courses. In the enriched-virtual model, students normally interact with their instructor online, but in some instances, the instructor has their students join them face-to-face once a week providing them with brick-and-mortar experiences (Linton, 2018; Staker & Horn, 2012).

Having different models, provides teachers with a variety of options on how they want blending learning to operate their classroom. Teachers are free to test the different models of blended learning in their classroom to find the right fit. Every teacher will try to find the perfect blend for their classroom (Verkroost et al., 2008). Each classroom will operate differently based on their student's needs and interests. Teachers are able to blend their blended learning between the different models to achieve the greatest level of student engagement (Linton, 2018).

**Student engagement in the classroom.**

In a blended learning environment, students are given more freedom to dictate their own learning. They are given the opportunity to have a choice and a voice in their learning. With personalized learning paths (playlists), students have the responsibility to choose their path of learning, the pace at which they learn at, and the place where they want to learn. Fisher et al. (2018) found in their study, students were more engaged with a flipped classroom model rather than the traditional classroom model because the students were able to actively participate in enjoyable learning experiences. Not all students will enjoy the new learning environment created with blended learning (Pape, 2010). These students might go through the process passively, not really caring for their newfound responsibilities.

In Al Mosawi and Wali's (2015) and Fisher et al.'s (2018) study, students reported having more fun using a device during their learning time. Being on a certain app or online assessment tool can give students immediate feedback to what they are doing. Students from Al Mosawi and Wali's (2015) study reported liking getting immediate feedback to see whether their answers were correct or incorrect. With this ability, teachers are able to see more individualized groups during that subject period. Al Mosawi and Wali (2015) revealed in their results that using a mobile approach (blended learning) in public and private schools resulted in higher student performance during their quizzes. Interviews with the students showed students really enjoyed using the mobile approach and were not bored in class (Al Mosawi & Wali, 2015).

Henrie et al. (2015) found high levels of student engagement during a blended learning course throughout the whole class, but struggled to find a solid relationship between the two on some individual levels. This could have been due to bland learning experiences, not understanding how to use the LMS, or not being motivated by an online learning opportunity.

Whereas, Wendy Funk (2012) finds her students enjoying the blended rotation model in their classroom and they find it easy to use. Henrie et al. (2015) did find out from student satisfaction surveys that the quality of the activity matters to them. When presented with an exciting activity online, students found it more enjoyable than boring activities.

Even at a young age, teachers are able to blend their student's learning with personalized playlists, choice in work, and technology. Blended learning is not just for middle school or high school students, elementary and early childhood classrooms can benefit from blending their classrooms. In an early childhood study done by Zhen Chai (2017), many preschoolers expressed how much they enjoyed using the iPad app for learning, whereas one boy expressed his boredom. Chai's (2017) results of the study, along with Pablo Mejia's (2012) analysis of his school, concluded these preschoolers academic performance after utilizing the iPad was higher. Due to developmentally appropriate practices, the use of technology in a preschool classroom will look differently than in an elementary classroom. Preschoolers might be using iPad apps or games instead of doing their work on a LMS.

As mentioned earlier studies done by Al Mosawi and Wali (2015), Chai (2017), Fisher et al. (2018), and Henrie et al. (2015), the relationship between blended learning and student engagement is positive. Students in these studies reported they like and have more fun when they are able to use devices (Al Mosawi & Wali, 2015; Chai, 2017; Fisher et al., 2018; Henrie et al., 2015). In a blended learning environment, students are able to use devices to help facilitate their learning and they have the responsibility to choose their own path of learning for the day. These simple modifications to the classroom help students become more engaged in their learning and it makes them want to come back to school every day (Imbriale, 2013). Studies done by Fisher et al. (2018), Griffin (2014), and Schechter et al. (2015) found a positive correlation between

blended learning and student achievement. In a blended learning environment, students are able to get a more personalized learning than a traditional classroom. This aspect of blended learning will be able to benefit all students in the classroom and outside of the classroom.

**Benefitting all students.**

Blended learning is not only about integrating technology into the classroom, it is also about personalizing learning for all students in the classroom and giving them more responsibility. Students come school with a variety of abilities. Some students may need extra help with certain academic areas or social skills. Some students may need to be pushed further than what is being taught at their grade level. In addition, some students will learn at the pace the teacher is teaching. With all the differing abilities, teachers need to be able to differentiate their teaching to tailor to the needs and abilities of their students. As mentioned earlier, blended learning can help with the differentiation process. Many LMS systems, apps, and assessments take where the students are and go from there. Tom Vander Ark (2012), the executive editor of [gettingsmart.com](http://gettingsmart.com), quotes, “games (on DreamBox) are calibrated at the right level so they are not too hard or easy for the learner” (p. 22). An entire class could be working on the same math lesson, but their personal lessons may differ from the student next to them. Teachers are able to create playlists for students to do. These playlists tell the students what they are supposed for the class period and they can be personalized for each student (Tucker et al., 2017).

The research from literature has found positive relationships with blended learning and student engagement (Al Mosawi & Wali, 2015; Chai, 2017; Fisher et al., 2018; and Henrie et al., 2015). Students are more engaged with their learning and reporting having fun at school (Ibmriale, 2013; Pape, 2010). These students are given a chance to learn to how to take responsibility in their learning. They are given a choice in their path, pace, and place. With

blended learning, teachers have a tool helping with student engagement, student responsibility, and personalization for students. Teachers can use and blend the different models together to find the perfect fit for their classroom.

### **Methods**

The purpose of this study was to determine the relationship between blended learning and student engagement in an early childhood classroom. Data was collected and students were observed during a pivotal time during the day, small groups. The teacher researcher found small groups was a time during the day where students were not participating as much. Behaviors were escalating in students who did not want to go to the three specific small groups, making it difficult for the teacher researcher and para-educator to teach their lessons. The station rotation model in blended learning was modified to be developmentally appropriate for students in an early childhood classroom. The independent variable in this action research project was having small groups in a blended learning format. The dependent variable was student engagement. Data collection was through observation and recorded by the para-educator or other staff.

### **Participants**

This action research project was implemented in an all-inclusive half-day preschool program. Data collection took place in both the morning and afternoon classes resulting in a total of 35 participants in the study, ranging in age from three to five year-olds. The morning class consisted of seven boys and eight girls, with two of whom are three year-olds with individualized plans. The afternoon class consisted of eleven boys and eight girls, with two whom are three year-olds with individualized plans, one four year-old with an individualized plan, and one dual-language learner. All students receive developmentally appropriate and differentiated lessons to fit students' needs. In both classes, students' demographics and socioeconomic status' varied, but

students' in the class were predominately Caucasian. Blended learning was implemented in both classes during small group instruction time. During the day, a para-educator was present to help with providing assistance to students who need more help.

### **Data Collection**

The focus of this action research project was to determine what impact blended learning has on student engagement. The teacher research pondered the question: Would the impact of blended learning have a positive correlation or have a negative correlation with student engagement? Both classes received blended learning instruction during small group time. Data was determined through observation done by the para-educator and other staff members during a twenty-minute small group, checking in two times to see what level of engagement students were at each week. Data collection was recorded on a table and later put into an Excel document. Student engagement, disengagement, disruptions, and absences were recorded. As well as other interruptions, like fire drills, tornado drills, guest speakers, field trips, etc.

Quantitative data was collected through observation by recording which students were actively engaged, passively engaged, disengaged, or disruptive during a twenty –minute small group time for seven weeks, including the data week from before implementation. Actively engaged students have their full attention and are participating in the activity they chose. Passively engaged students are just going through the motions, quietly watching other students participate first, and then trying it for themselves. Disengaged students look bored with the activity or they are walking around the room, not participating in anything. Disruptive students are often running around the room, yelling, or throwing items on the ground. The teacher and para-educator, interviews with students, and journal notes, collected the qualitative data.

The data collection process lasted for seven weeks beginning February 8 and ending March 29. With the first week data reflecting student engagement before blended learning was implementing and the next six weeks reflecting what student engagement was after implementing blended learning in the classroom. After researching the different models of blended learning, the teacher researcher felt a station rotation model was the most appropriate model for an early childhood classroom. In a station rotation model, students are rotating through a variety of stations with at least one of the stations being technology based (Linton, 2018; Staker & Horn, 2012; Tucker et al., 2017). A blend of station model, individualized rotation, and the idea of playlists was implemented after the first data collection. Students went from receiving three mandatory small groups (teacher group, para-educator group, and individual group) to freely going through six different small group activities based on where they want to go and one mandatory small group with the teacher. Every two weeks, small group activities were altered based on student engagement.

Beginning the week of February 4, the para-educator started collecting data by observation to see what the student engagement level was at before implementing blended learning at small group time. The teacher researcher started noting behaviors and ideas in a journal. The teacher researcher and para-educator noticed escalating behaviors in the morning class preventing the teacher researcher to complete their small group in a timely fashion. Some days the teacher researcher was not able to complete small groups due to disruptive behaviors. The afternoon class did not show as many disruptive behaviors, but they were having troubles staying on task and engaged with the activities in each small group. The teacher researcher observed the students on individualized education plans were less engaged than the rest of the class during the three mandatory small groups. At the end of the week, February 8, the para-

educator took data based on the students' engagement during small groups and recorded it on the log (see Appendix A). The para-educator looked to see what the engagement level was for each student, actively engaged, passively engaged, disengaged, or disruptive, and marked it accordingly to what they were observing. This happened twice, one day a week, during a twenty-minute small group time. Student names were used to help distinguish between general education four and five year-olds, three year-olds with individualized education plans, and four year-olds with individualized education plans. The log in Appendix A listed the students by letter for confidentiality reasons.

After an eye-opening week of observations, the teacher researcher had to decide what blended learning would look like to work best for the students in each class. Rotating between different small groups activities was a concept the students already understood how to do, so the station rotation model was deemed the most appropriate for both classes. Leaving the station rotation model as is was not an option because disruptive behaviors were on the rise and students seemed to be off task and disengaged. With blended learning teachers have the ability to be flexible and blend different models and ideas together to fit what is best for their classrooms. The teacher researcher decided to blend the ideas of station rotation, individualized rotation, and playlists for both classrooms.

Starting February 11, the teacher researcher presented the new model of small groups to the students. The teacher small group stayed mandatory, each student needed to come up to the carpet or table to practice rhyming, letter recognition, print awareness, etc. with the teacher researcher. The teacher researcher planned six different small group activities excluding the teacher-led group. These small group activities consisted of fine motor skills such as cutting, writing, and coloring, literacy skills such rhyming activities, letter recognition, and beginning

sounds, and math skills such as patterns, counting, number recognition, data analysis, and measurement, and iPads. Some days 'fun' activities were placed in small groups like puzzles, play-doh, or kinetic sand. These small groups had a limited time since they were popular. Small group activities were changed daily. Students had the freedom to pick what small groups they wanted to go to and for how long they wanted to be at the small group. For the students with individualized education plans, the teacher researcher found hands-on activities in the teacher-led small group and for the other groups, the teacher researcher had them go to one other small group activity before taking a break. Data was collected twice through observation for each student based on their engagement during the twenty minute small group time towards the end of each week.

After two weeks of data collection, the small group activities were evaluated by the teacher researcher. Beginning on February 25, activities the students were not participating in were dismissed to make room for new activities and small group activities were not changed daily. Changing small group activities daily, found to be a distraction from small group time. Students got impatient with going over the new activities each day. The teacher researcher decided to do literacy based activities three times a week and math based activities twice a week. The teacher-led group was not dismissed during the six weeks of data collection, but the lesson/activity changed daily.

Student engagement was found to be higher in building activities such as blocks, unifix cubes, and magnetiles in the morning class. The teacher researcher added small group activities that would use blocks or unifix cubes for literacy and math skills, like building the ABCs and making patterns with unifix cubes. Student engagement in the afternoon class was higher in craft like activities such as coloring, decorating items, water-coloring, and making cards. More

crafting activities were added as well, like water coloring secret letters and numbers and creating cards for friends and family. Both classes were presented with these small group activity changes. Student engagement data was collected for the next two weeks towards the end of each week. Changes were recorded on the table to see if student engagement was higher in any particular area.

Finally for the last two weeks, beginning March 11 and ending March 29 with the last data collection (the week of spring break was omitted because students were not in session), the teacher researcher decided to change the way they chose small group activities. The teacher researcher brought out all the activities with the highest engagement for small groups from the last four weeks for small group time. Between those activities, the ones with the highest student engagement were out for small groups twice during the week. To determine these activities, the teacher researcher and para-educator observed small group activities at the beginning of the week. This change was recorded on the excel spreadsheet. This concluded the six weeks of data collection for both morning and afternoon classes.

## **Findings**

### **Data Analysis**

For the action research, the teacher researcher focused on a mixed methods approach to data collection, using both quantitative and qualitative data to drive the changes in instruction. Quantitative data focused on tallying up which students are actively engaged, passively engaged, disengaged, or disruptive. This data represented whether or not blended learning was causing an effect on the student's engagement during small group time. Qualitative data focused on how the students were responding to the blended learning atmosphere. This data was collected through

observation, journals, teacher and paraprofessional conversations, and teacher conversations with the students. As mentioned earlier the independent variable was having small groups in a blended learning format and the dependent variable was the student’s engagement during small group time. The data was collected through observations from the teacher, paraprofessional, and other staff members. Data from both morning and afternoon classes, were recorded on a log, put into an Excel spreadsheet, and plotted on a graph to be analyzed more efficiently.

Table 1 shows the number of students who were actively engaged, passively engaged, disengaged, or disruptive during small groups, starting with a data collection before blended learning was implemented into the classroom (Feb 8). After every two weeks an instructional change was implemented. After the first two weeks of blended learning implementation, activities that were not visited often were dismissed and activities with the highest engagement were multiplied. The next two weeks were watched carefully to see if what activities held the highest student engagement again. The teacher researcher made another instructional change, keeping the activities with the highest student engagement twice a week. Student numbers fluctuate based on who was at school.

Table 1

*Number of Student Engagement*

		Active Engagement	Passive Engagement	Disengaged	Disruptive
8-Feb	Morning Class	5	5	3	2
	Afternoon Class	5	10	2	2
15-Feb	Morning Class	10	3	2	0
	Afternoon Class	10	6	1	0

22-Feb	Morning Class	10	4	0	1
	Afternoon Class	8	4	3	0
1-Mar	Morning Class	10	3	1	0
	Afternoon Class	12	4	2	0
8-Mar	Morning Class	11	4	0	0
	Afternoon Class	13	2	1	0
15-Mar	Morning Class	11	4	0	0
	Afternoon Class	12	6	1	0
28-Mar	Morning Class	11	2	0	0
	Afternoon Class	14	1	1	1

During the first week of data collection, more students were either passive engaged and disengaged than students who were actively engaged. The first week of data was collected before blended learning was brought into the classroom. Students were supposed to rotate through three different small groups during small group time. The data reflected a three small group rotation was not appropriate for the students in either classroom. Through observations from the teacher researcher, paraprofessional, other staff, and the data collected, students in each class were not being given the opportunity to actually have small group do to multiple disruptions. There were only five students from the morning and the afternoon class who were actively engaged in small groups.

After blended learning was implemented into small groups, students were given the freedom to rotate through five or six different activities with the teacher-led small group being the only mandatory group they needed to go to. Looking at the numbers from the first two weeks

after blended learning was implemented, students who were actively engaged doubled in number for each classroom. During the next two weeks of data collection, when more highly engaged activities were set out, there was another increase in students were actively engaged during small group time. Scores went from ten students actively engaged to eleven or twelve students engaged. In the last two weeks of data, where highly engaged activities were repeated, almost all the students were actively engaged during small group time. The data shows as active engagement increased, students who were being disruptive or disengaged decreased.

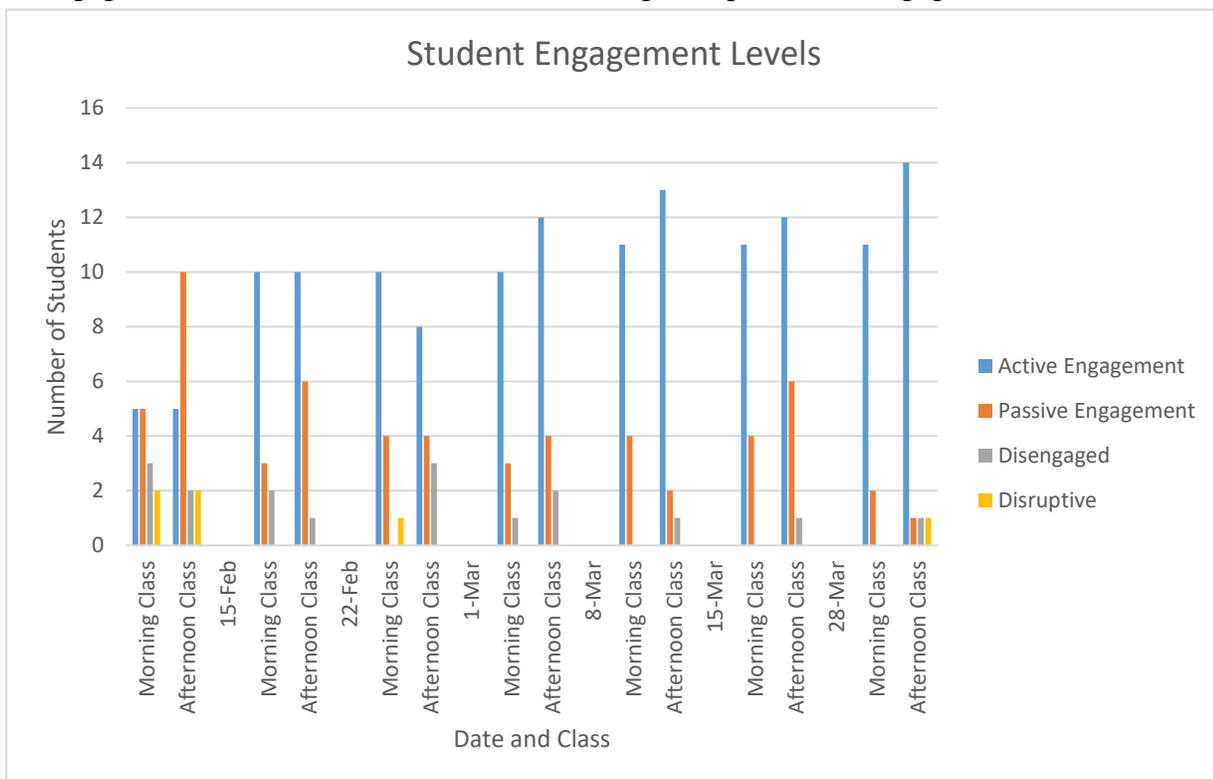


Figure 1. Total number of student engagement levels during small group time.

Figure 1 displays the data collected from Table 1 on a bar graph. The blue column represents how many students were actively engaged in the small group of their choosing, the red-orange column represents how many students were passively engaged in what they were doing, the gray column represents how many students were disengaged during small group time, and the yellow column represents how many students were disruptive during small groups. The

first set of morning class and afternoon class data shows how student were engaged before implementing blended learning. This graph shows blended learning has a positive effect on student engagement in both morning and afternoon classes. This also answers the research question by showing how blended learning boosts student engagement.

## **Discussion**

### **Summary of Major Findings**

The findings of this study present blended learning has a positive effect on student engagement in an inclusive preschool classroom. This correlates with studies done by Al Mosawi and Wali (2015), Chai (2017), Fisher et al. (2018), and Henrie et al. (2015), who also found the positive relationship between blended learning and student engagement in the classroom. The data shows when students were given a choice of what small group they wanted to go to and for how long, the number of students who were actively engaged increased as the study went on. The data also shows student were more engaged when the activities during small group showed up twice during the week rather than having new activities every day. Students still had to participate in small group time, but after blended learning was implemented, they had the freedom of choice. Even though the data depicts blended learning having a positive effect on student engagement in this classroom, the study does not represent all early childhood classrooms.

The results of the data collection from both classes were similar in fashion. Both classes had a rise in active engagement and a decline in disengagement and being disruptive. Even though the data shows the classes had a similar positive effect of blended learning on student engagement, the areas of engagement differed. The morning class had higher engagement in building activities such as wooden blocks, bristle blocks, magna-tiles, and Legos. They also

enjoyed using their problem solving skills with doing puzzles. The students from the afternoon class had higher engagement in art activities such as decorating different animals, playing with play-doh, creating planets, and making their own farm scene. Student make-up for each classroom gave a unique perspective to what activities were put out during small group time.

### **Limitations of the Study**

One of the limitations of the study was the size of the study. The teacher researcher only used her classroom in the study, reaching 35 students in all. This sample of data does not reflect all early childhood classrooms and the data cannot show a tool that will be able to fix all problems with student engagement. Had the study included the other four preschool classrooms, as well as kindergarten through second grade classrooms, the data might be able to tell a more reliable answer to the question on if blended learning effects student engagement in an early childhood classroom.

Another limitation of the study was the inclusive classroom the study was conducted in. Both classes were made up of general education students, special education students, and students who were in the process of evaluation. Students with severe behaviors and attention difficulties affected the data. Students with severe behaviors had a hard time coming to small groups. The students with attention difficulties had a hard time staying engaged when they were given the choice of where they wanted to go. Visuals were put in place to help support these students.

### **Further Study**

An area of future study and research would be to collect data from two different classrooms, with one classroom being a control group and the other classroom taking part in the

new instruction. By collecting data from two classrooms, this would give the opportunity to compare and contrast a blended small group learning time with a more traditional three-group small group learning time. With data from a control group and an experimental group, teachers can really see if blended learning has a positive effect on student engagement. With the activities changing constantly to better fit the students' interests; it is hard to distinguish if blended learning was the thing that increased student engagement or if it was the activities. Another future area of study and research is seeing what the data would be after collecting it for more than six weeks or starting the collection at the beginning of the year. Students came back from multiple weeks of snow days, which effected how they acted during the school day.

### **Conclusion**

Student engagement is a key component to a classroom. Without it, the classroom cannot run effectively or efficiently. Teachers are finding their classroom dynamics are changing. They have more diversity amongst their students academically, socially, behaviorally. With all these changes, teachers have been searching for a tool to help them. As they have been searching for a solution to help increase their students' engagement during lessons and activities, blended learning has begun to show its' positive effect on student engagement.

Blended learning provides an avenue for teachers to individualize their students' learning. With it, they can provide more lessons that are tailored to their students' needs and offers teachers a way to help capture every student's attention. It also gives students the ability to choose what they want to work on first, for how long and where they want to complete their work. Blended learning is teaching responsibility to students and giving them a voice in their education. Incorporating the technology piece opens up an opportunity for students to participate without the anxiety of speaking in front of the class.

Teachers are able to use a variety of models within blended learning, like station rotation, lab rotation, flex model, á la carte model, etc. With the perfect combination of blended learning models, blended learning can even work for early childhood classrooms. Teachers have the flexibility to choose the design that would best work for their classroom. In the case of this teacher researcher, a modified version of the station rotation model worked best for her young students. They were able to rotate freely among the small group activities presented and if they did not want to go to one of them, they were not forced to.

Based on the findings of this action research project, implementing blended learning into small group learning time helped increase student engagement. Other research conducted by Al Mosawi and Wali (2015), Chai (2017), Fisher et al. (2018), and Henrie et al. (2015) have shown the same results, blended learning is helping increase student engagement as well as student achievement and overall student happiness. With knowledge from research and professional developments, blended learning can be effectively implemented in all classrooms. Teachers will need to take a step back and give some control over to their students. Blended learning will not be the fix for student engagement, but it is somewhere to start when all other options have been exhausted.

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**Appendix A**

Chart used to collect data for blended learning (Morning Class):

AM Date:	Actively Engaged	Passively Engaged	Disengaged	Disruptive
1				
2				
3				
4				
5				
6				
7				
8				
9				
10				
11				
12				
13				
14				
15				

Chart used to collect data for blended learning (Afternoon Class):

PM Date:	Actively Engaged	Passively Engaged	Disengaged	Disruptive
1				
2				
3				

4				
5				
6				
7				
8				
9				
10				
11				
12				
13				
14				
15				
16				
17				
18				
19				