Master Capstone Project

# Student Engagement in the Elementary Classroom

Callie Martin

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I give permission to City University to store and use this MIT Project for teaching purposes.

Submitted by Callie Martin — 2/22/22 Date

Approved by Charlotte Cochran, Ph.D. — 2/22/22 Date

Approved by Vicki Butler, Ed.D. — 2-16-2022 Date

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**Abstract**

This study examined the issue of student engagement in the primary classroom. Student disengagement begins as early as 1st Grade. Research specified that student engagement was multi-layered, and depended on student's sense of inclusivity, authenticity, and relationship to self and others within the classroom. These factors fused to support academic achievement. To address student engagement, interventions may include student-centered teaching and learning, dynamic use of technology in the classroom, and frequent opportunities for physical movement throughout the school day. A classroom yoga practice can improve student engagement by cultivating focus, concentration, retention, perseverance, decision making, positive relationships, and better use of class time; skills which can then be applied to academic lessons. Through an analysis of the dilemma and a review of the literature the researcher proposes a daily classroom yoga practice as an intervention strategy to increase student engagement and on-task behaviors in the elementary classroom.

## Rationale

Balfanz et al. (2007) presented disengagement as students' separating from school or diminishing efforts and investments towards learning activities. Disengagement also included behavioral and emotional factors exhibited by students that were obvious or passive, such as frustration, boredom, apathy, and anxiety (Burkett, 2002; Murray et al., 2004; Pope, 2002; Skinner et al., 2008;).

At the primary level, indicators of disengagement included not paying attention, not completing schoolwork, disruptive behavior, withdrawal, underachievement, truancy, and school refusal (Murray et al., 2004). In a study of middle level students conducted by Veldman et al. (1983) students classified as disengaged were characterized by poor peer relationships, introversion, unhappiness, lessened classroom participation, and low confidence in athletic ability. Finn et al. (1995) observed inattentive students as distracted or preoccupied, appearing to daydream or sleep, and if required to participate in classroom interactions, giving responses that were off topic.

As early as 5th grade, chronic disengagement reportedly afflicted 24% of fifth graders (Busteed, 2013). That number increased to 39% in middle school and to 56% percent once students reached high school (Busteed, 2013). No comparable estimate of disengagement existed for students in the primary grade levels (Marks, 2004).

Finn (1989) found that the process of disengagement could begin in the early school years if students did not fit in, participate, and succeed. In another study, researchers found as early as 1st Grade, lack of engagement adversely affected student achievement and began a downward spiral that led to dysfunctional school behaviors and eventually concluded in some students leaving school entirely (Marks, 2000; Alexander et al., 1997). In Indigenous

## Analysis of the Problem

The problem addressed in this issue-focused investigation is that some students were disengaging when called upon to add to class discussions, specifically during the return to full-day, whole-class, in person schooling during the COVID-19 pandemic. This struggle to engage was evidenced by student behaviors observed such as crying, lowering heads to desks, withdrawing eye contact, bending back in chairs, formulating off-task responses to questions, and remaining silent.

At the time this investigation was developed, teachers at an elementary school in Washington had recently returned to full-day, in-person learning from previously receiving instruction via hybrid and online learning. Observations of a second-grade class newly returned to full-day schooling revealed students unaccustomed to engaging within the physical barriers of COVID-19 health restrictions. Primary students traditionally familiar with small group work, pairing up, or tabled seating were required to sit six feet apart, wear a face mask at all times, and engage as close as three feet for no longer than ten minutes at a time. In addition, traditional 15-minute recesses were removed from the daily schedule and replaced with two, ten-minute, outdoor, supervised 'brain-breaks'. Within these parameters, engagement methods were frequently reduced to whole class discussions with each student remaining seated at a desk to do independent work for the majority of the lesson.

While whole class discussions are a successful tool for lesson facilitation and student engagement, at the primary level this engagement style showed limitations in students' ability to interact as a community, move about physically within the classroom, talk amongst themselves for deepened understanding, and find opportunities to recharge throughout their school day.

found meaningful and enjoyable. Through the process of socialization, they learned to concentrate on tasks (Marks, 2000).

Equally important were the implications on academic achievement of students who lacked engagement or were disengaged.

**Teacher-Student Relationship**

There was extensive research related to the impact of teacher-student relationships, and perceived support on a student's overall engagement in school (Brewster & Bowen, 2004; Quin et al., 2008; Roorda et al., 2011; Skinner et al., 2008).

Wentzel's (1997) longitudinal study of 248 middle school students' perspectives on caring teachers. Specifically, the researchers asked students to identify the characteristics of a caring teacher, and the degree in which their views of a caring teacher foretold positive social and academic outcomes (Wentzel, 1997). Researchers found that there was a correlation between both student's academic effort and prosocial behavior, and their perception that teachers were caring (Wentzel, 1997). Regarding characterizations of a caring teacher, students' descriptions were similar to what Wentzel (1997) described as, "dimensions of effective parenting" (p. 415), which included, acting in a democratic way, clear expectations for behavior, regardless of individual differences, modeling appropriate behavior, and providing feedback to students.

Alder's (2002) work on the development of caring relationships between middle school students and their teachers also focused on the importance of knowing the student, as well as their family, as a method to improve student engagement. This study examined African American middle school students' perspectives on caring relationships with teachers. In addition to personal knowledge, students cited academic support and high behavioral expectations as key characteristics toward the desire to engage in academic work (Alder, 2002).

**Project-Based Learning**

In light of Fredrick's (2011) findings, Parsons et al. (2011) showed project-based learning to be an authentic and challenging learning experience that involved self-directed learning and resulted in a culminating project or product by students. As an instructional intervention, project-based learning worked to engage students by fostering the space to become a community of learners and participate in meaningful cultural activities (Mitchell et al., 2008). Throughout the literature, researchers observed that learning that occurred in the context of problem solving was more likely to be retained and applied (Thomas, 2000).

The original concept of project-based learning traced back to the early 1900's when scholars like William Kilpatrick and John Dewey challenged traditional ideas about instruction that relied on rote learning and advocated for more constructivist approaches to teaching and learning (Revelle et al., 2019). The basic belief of constructivism or constructivist theory was that it supported student-centered learning and created an environment where students were active knowledge constructors rather than passive information receivers (Wang et al., 2007).

Though it was not a single, unified theory, researchers described constructivism as a method where students were engaged in knowledge construction by completing tasks that directly related to the world around them (Crawford, 2020). Lew (2010) suggested that at the heart of constructivism was the thought that learning was neither passive nor a copying process, rather a process of discovery that required active participation and that what students learn is ultimately based on their own experiences.

Within this context, Kilpatrick's pioneering of constructivist theory emphasized project-based learning that circulated around child-chosen projects that would stimulate purposeful activities and promote intrinsic motivation in students (Wolk, 1994). Students were to be

Carrabba and Farmer's findings strengthened previous research lead by Ateh and Charpentier (2014) and Ferlazzo (2015), concluding that project-based learning increased student autonomy and gave students the opportunity to think deeper about concepts, all of which enhanced student learning and increased student engagement and motivation.

Lastly, in a study that implemented project-based learning pedagogy in a laboratory course at Indiana University, Robinson (2013) found students who made their own choices about their learning worked collaboratively and had an easier time relating their lessons to real world situations. These research findings added to the works of Ateh and Charpentier (2014), and Ferlazzo (2015), by showing that students worked harder to produce higher-quality results when offered lessons designed with project-based learning in mind (Robinson, 2013).

**Blended Learning**

Similar to project-based learning, blended learning was an instructional strategy in the literature holding merit at improving student engagement in ways similar to constructivism and active learning (Crawford, 2020). Also referred to as a flipped classroom, blended learning was a style of education in which students learned through both online environments and traditional face to face teaching, a combination that sought to give learners more control over the path, pace, and methods of instructional content (Horn & Staker, 2015). Crawford (2020) showed most of the understanding in a blended learning scenario took place outside of the classroom, where the student learned at a pace ideal for them. The majority of content engagement then occurred in the classroom where students could ask for guidance from their instructor and peers on more difficult topics through interactive exchanges (Crawford, 2020). In contrast, Hillard (2015) defined blended learning as an educational modality that combined traditional instruction with digital technology to improve knowledge and skills students could transfer to the workplace.

**Active Learning**

Crawford (2020) showed active learning to be an additional student-centered approach capable of improving student engagement via roots in constructivist theory. Demirci (2017) described active learning students taking responsibility for their learning and becoming active in each step of their learning process. Thomson and Ayers (2015) described active learning as any instructional approach that fostered student engagement through teaching materials and promoted critical thinking skills. Throughout the literature practical examples of active learning in the classroom manifested as in-class written exercises, debates, class or small group discussion, games, audience response systems, problem-solving exercises, simulations, case studies, and role playing (Demirci, 2017; Weigel & Bonica, 2014).

Goldberg and Ingham (2011) found that by incorporating active learning strategies into a lower-level biology class, student engagement and higher-order cognitive skills improved. In this case study, mini-lectures in combination with active-learning activities were evaluated as strategies to promote a culture of learning and participation (Goldberg & Ingham, 2011). Student attitudes toward learning, participation, and class activities were assessed with feedback surveys following each activity, at the beginning with a pre-survey and at the end a post-survey (Goldberg & Ingham, 2011). Students identified concept maps, problem-solving exercises, and a categorizing grid as helpful to their learning (Goldberg & Ingham, 2011). Based on instructor observations, students were especially engaged in activities that allowed them to demonstrate creativity and resourcefulness (Goldberg & Ingham, 2011).

In addition to the results Goldberg and Ingham (2011) observed that by encouraging engagement, the instructional strategies utilizing active-learning techniques contributed to academic performance. The researchers observed improvements in exam scores over the course

These findings suggested that virtual worlds provided a space for a broad range of students in the United States and other countries to increase confidence and comfort and to overcome barriers around engaged learning (Zheng et al., 2009).

**Use of Technology in the Classroom**

The rise of technology combined with increased student access gave teachers an opportunity to integrate technology into classrooms in a variety of ways depending on instructional need (Balius, 2018). National technology plans made technology hardware and software widely available to schools (Schrum & Levin, 2012). With the expansion of Web 2.0 technologies such as mobile applications, called apps, and social networking, options for educators to include technology in instruction expanded dramatically (Schrum & Levin, 2012).

Employed authentically in the classroom, technology involved students in decision-making processes, helped them take part in the creation of tasks, and gave them chances to participate in cooperative learning experiences, all characteristics that improved student engagement (Prensky, 2006; Revere & Kovach, 2011; Marzano & Brown, 2009). Rabah (2015) studied English schools in Quebec and noticed that an increased use of technology during class instruction correspondingly increased student engagement.

Students have become more dependent on technology as a method of communication (Balius, 2018). Prensky (2008) stated that students today were more connected to the world than ever before. Prensky's (2008) findings found teachers no longer functioning as main access points to knowledge for students, giving further reasoning as to why some students struggled to engage when the instruction followed a traditional teacher-centered format. Ottenbreit-Leftwich et al. (2010) found that teachers reported increased engagement in classrooms where technology was used for instructional purposes. Therefore, more researchers supported technology as an

interactive white boards as engaging, despite being used as projectors by teachers most of the time (Dietrich & Balli, 2014). Students also expressed a strong interest in learning activities where they could be in control of the technology used for example, mobile devices to guide their own learning (Dietrich & Balli, 2014). Overall, Dietrich and Balli (2014) observed that student engagement increased when students were given more autonomy over what they did with the technology they were given, supporting the idea that student engagement was deepened when learning was both authentic and self-governed (Dietrich & Balli, 2014).

**Physical Activity in the Classroom**

Extensive amounts of time sitting and focusing on core academics was shown to lead to off-task behaviors and student restlessness that interrupted learning experiences (Goh, 2017; Stevens-Smith, 2016). Evidence of increased on-task behavior using kinesthetic learning, and other types of physical activity interventions motivated teachers to introduce physical activities into their classrooms as a way of increasing and sustaining student engagement (Mahr, 2011).

Goh (2017) observed decreased on-task behavior during a baseline period of observation where students were seated for an extended period of time. In contrast, the same study also showed a 5% improvement of on-task behavior when physical activity was routinely introduced. Goh argued that considering students do not have many opportunities for frequent physical activity throughout the day, the introduction of a physical activity program into a classroom was an excellent resource for teachers to increase students' chances of being physically active. Goh (2017) further suggested that adding as little as one physical activity daily to the classroom setting may significantly improve student engagement, therefore academic achievement.

Another study crafted by Beets et al. (2014), introduced exercise breaks into classrooms of fourth and fifth grade students. Results showed an increase in on-task behavior for 20 minutes

taught, resulting in increased student interest, motivation, and engagement (Beaudoin & Johnston, 2011; Dixon, 2012).

In a study to see how kinesthetic learning impacted the effectiveness of teaching algebra, Beaudoin and Johnston (2011) found that intentional movement had a positive effect on student outcomes. One way they introduced kinesthetic learning into the algebra lesson was by having students physically hold a paper parabola. Students who held and moved the parabola to demonstrate the transformation of the graph had a better understanding of quadratic function shifts than those students who only practiced the problems on a worksheet (Beaudoin & Johnston, 2011).

*Yoga*

Yoga is an ancient practice of the mind, body, and spirit which originated in India and has become popular in the United States (Finnan, 2015). Traditional yogic texts state that the body is made up of five elements, earth, water, fire, air, and space. In order to maintain health, one must constantly adjust to bring all of these into harmony (Sivananda Yoga Center, 2010). Each of these concepts is engaged throughout the yoga process. Typically, Western Yoga is based on the relationship between pranayama (mindful breathing) and asanas (postures) (White, 2009). The asanas for children can be identified as standing, seated, balance, twists, supine, forward bends, backbends, and inversions (White, 2009). This combination of physical movement has been shown to improve overall circulation, release tension, and benefit the nervous system because of increased blood flow and oxygen levels (Peck et al., 2005).

Peck et al. (2005) found that using yoga as a mind-body intervention with children who have attention problems improved their on-task behavior. In support, Koeing et al. (2012) found that more schools were using yoga as an intervention, because of the positive impact it had on

Peck et al. (2005) found similar results to Finnan (2015). Peck et al. (2005) researched the effectiveness of yoga practice on the on-task behavior of children viewed by teachers and school psychologists to have attention difficulties, which were determined by being off task 80% of the time during classroom lessons. In the study, there were 10 students ranging in age from 6-10 years old. Yoga was practiced for thirty minutes, twice a week, for three weeks, each time followed by researcher observations of on-task behavior. The video program used, *Yoga Fitness for Kids* included deep breathing, postures, and relaxation exercises. Results again revealed positive increases in on-task behaviors for student participants (Peck et al., 2005).

Yoga emphasizes individual abilities, rather than a focus on competition, which is ideal for children (White, 2009). It is a gentle and non-threatening way to participate in physical activity. A focus in yoga for children is compassion and non-judgement with a connection to postures and breath (White, 2009). Anecdotal reports have shown that yoga has a calming effect on children (White, 2009). Davis (2009) proposed that the deep relaxation period at the end of a yoga practice may provide an ideal setting to facilitate academic learning and engagement.

Marraffa (2015) investigated the effect yoga had on stress relief in school for sixth grade students. Students were included in yoga or a regular physical education class and assessed for stress levels. Although no major differences in stress levels were identified, students who participated in the yoga program were noted to have more positive coping skills for stress than students participating in the physical education class (Marraffa, 2015). Maraffa's (2015) findings verify the discoveries of Finnan (2015) and Peck et al. (2005), who showed that the skills learned in yoga can be applied to other areas of academics.

Metz and Seifert (2017) supported findings made by Henry et al. (2008) in their study on the use of wiggle cushions on engagement in students during preschool circle time. Within the daily routines of pre-K, there are periods of structured instruction, aimed at preparing children for their future classroom education (Metz and Seifert, 2017). Circle time is one of these structured times, and most preschool curricula reserve time in the day for this.

Metz and Seifert (2017) tested the effect of wiggle cushions on attention using alternating periods of usual seating and wiggle cushions. Four preschool classrooms were observed, with two randomly assigned to the intervention and two utilized as control groups. Results showed significant improvement in attention and persistence in students, presenting that the use of wiggle cushions enhanced engagement during circle time.

Both research groups observed that students demonstrated increased attention to tasks when permitted to actively move (Henry et al., 2008; Metz and Seifert, 2017)

**Conclusion**

Throughout the literature, student engagement in schools and doing the academic work of learning were important goals of education (Finn et al., 1995; Marks, 2000; Murray et al., 2004). There was substantial research supporting student-centered teaching and learning, savvy use of technology in the classroom, and the practice of intentional physical activity to improve and sustain student engagement. Though student disengagement tends to peak in the secondary years, establishing a solid foundation for students to feel engaged in classroom tasks during the elementary years has the potential to set students up for success in lifelong learning (Marzano & Brown, 2009).

concentration (Martinez, 2017). In addition, the mental aspect of yoga, most commonly referenced as mindfulness, promotes focused attention (White, 2009). Researchers have shown that in addition to offering students a break, yoga builds on other forms of learning, including soothing frustration and anger in the classroom and strengthening strategies to focus attention on work (Sternberg, 2017). In this way, yoga can support other engagement interventions. For example, students who are less frustrated and more focused may be better prepared to participate in lessons that use active learning strategies or work as members of a project-based learning team. Since yoga can be taught through video, it also integrates use of technology into the classroom, bridging seamlessly into virtual or online settings. Wherein yoga has a calming effect for some students, the practice may also improve relationships within the classroom community.

Creating a time and space in the classroom (either virtually or in-person) for students to energize and find center in their body through yoga is important. The implementation of yoga in the classroom gives teachers an easy method to engage students in physical activity as well as give them a chance to mentally recharge in preparation for learning (Serwacki & Cook-Cottone, 2012).

**Implications, relevance, and/or reflections**

Identifying an engagement strategy that addresses the need to give students more physical and mental breaks during a time when traditional classroom engagement methods are limited could affectively increase student's ability to participate in classroom lessons. This study supports yoga as a possible positive engagement tool to decrease student inattention and withdrawal, and positively influence on-task behaviors, sequentially increasing academic performance and the enjoyment of daily classroom lessons. If research continues to establish the

## Proposed Design

The implementation of a daily, fifteen-minute yoga practice will give students an opportunity to physically and mentally recharge, motivating them to fully engage in their academic lessons.

### Purpose

The proposed investigation is to use a daily yoga practice as an effective intervention strategy to (1) energize students through regular physical activity, (2) offer students a mental break from content-based information, (3) increase on-task student behavior during academic lessons, (4) improve student focus during periods where independent work is a required part of the lesson, (5) utilize yoga to foster a sense of calm, relaxation, and connection within the classroom community, (6) provide strategies to help students self-regulate and manage emotions, (7) investigate the range yoga has as a successful engagement intervention in an elementary classroom.

### Theory of Change

By implementing a daily, fifteen-minute yoga practice into an elementary classroom, I anticipate that student engagement during academic lessons will improve.

following the yoga intervention using the classroom engagement observation form (Appendix B) during the lesson, combined with anecdotal notes. On the final day of the fifth week, the teacher would administer the student survey (Appendix A) (Communities in Schools, 2022) again as a post-assessment.

On the sixth week, in succession to the yoga intervention, the teacher would observe full-class engagement behaviors using the classroom engagement observation form (Appendix B) and anecdotal notes, which would be considered the withdrawal phase of the study. The teacher would make these observations during similar academic lessons following the intervention weeks.

The classroom engagement observation forms (Appendix B) utilize momentary time sampling to collect data. Momentary time sampling in this study would involve full-class observations every 30 seconds for a total of ten minutes. During each interval the teacher would scan the classroom and count the number of students who were engaged or disengaged based on markers provided (Appendix B). Since targeted students would not be used in this study, the anecdotal notes would add important framework to the time sampled data, providing unique insights about specific students engaged or disengaged behaviors.

The researcher would then create a Microsoft Excel graph for each week of the investigation, baseline (week 1), intervention (weeks 2-5), and withdrawal (week 6), weaving together the triangulated data collected. The researcher would visually analyze the class change in engaged behavior based on the three different graphs.

classroom engagement observation form (Appendix B) notes six observational indicators of student engagement: on-task, listens attentively, asks and answers questions, focuses on learning with minimum distractions, persists with a task even when difficult or long, expresses interest and enthusiasm. In addition, the form notes four observational indicators of student disengagement as inattention, inappropriate movement, non-responsiveness/withdrawal, and crying.

This observational data would be collected using a time-sampling procedure at the classroom level, where intervals of observation are 30 seconds long, broken into two pre and post observation periods, for a total of ten minutes of observation per day. During each thirty second interval the teacher would scan the room to count the number of students who are engaged or disengaged based on the listed observational indicators for engagement and disengagement. This information would then be used to create a percentage of students who were observed to be engaged during each interval, as well as an average percentage of students who looked disengaged. This assessment would take place at least once per day, along with a recording of the time, academic subject, and setting for the teacher to keep track of contexts or times of day when students tended to be more or less engaged. For the purpose of this study, this assessment would only be completed during academic lessons. Classroom behavior observation forms would be kept side by side with daily anecdotal notes. A separate observation sheet would be used for each five-minute observation period of 30 second interval sets.

**Assessment #3: Anecdotal notes**

Anecdotal notes would be kept through a daily journal format to note in-class observations of student participation and engagement during academic lessons. The anecdotal notes were designed to add context to the classroom behavior observation forms (Appendix B) as

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**Appendix A Con't**

4. There is an adult at my school I can talk to when I am upset.

   - o Strongly disagree
   - o Disagree
   - o Agree
   - o Strongly agree

5. I am comfortable asking my teachers or other adults at school for help with my schoolwork.

   - o Strongly disagree
   - o Disagree
   - o Agree
   - o Strongly agree

6. I have friends at school that support and care about me.

   - o Strongly disagree
   - o Disagree
   - o Agree
   - o Strongly agree

7. I regularly talk to/connect with friends from school.

   - o Strongly disagree
   - o Disagree
   - o Agree
   - o Strongly agree

8. When I can I join in/take part in class activities.

   - o Strongly disagree
   - o Disagree
   - o Agree
   - o Strongly agree

9. I set goals related to my schoolwork and try to reach them.

   - o Strongly disagree
   - o Disagree
   - o Agree
   - o Strongly agree

**Appendix A Con't**

16. School is important to me.

- o Strongly disagree
- o Disagree
- o Agree
- o Strongly agree

## Appendix B Con't

| *Observational Indicators for Engaged and Disengaged Student Behaviors* | |
|---|---|
| Engaged Behaviors | On task<br>Listens attentively<br>Asks and answers questions<br>Focuses on learning with minimum distractions<br>Persists with a task even when difficult or long<br>Expresses interest and enthusiasm |
| Disengaged Behaviors | Inattention<br>Inappropriate movement<br>Non responsiveness/withdrawal<br>Crying |

*Observational Notes:*

## Appendix C Con't

| | | |
|---|---|---|
| Child's Pose | 2 minutes | The student comes out of the downward upward dog flow and moves onto their knees, reaching out with their arms far in front of their body with their hands on the floor. Their faces should be faced down toward the ground, possibly allowing the forehead to touch. Students can choose to close their eyes for this pose. |
| New Pose Introduced | 3 minutes | Before the close of the yoga sequence, the teacher offers students a new yoga poses to engage deeper learning of the technique. Fun poses to try could be those that resemble animals, or the teacher could add in a visualization exercise here. |
| Savasana | 5 minutes | Also called Corpse pose, in Savasana students lay down on their back with their palms facing up toward the ceiling. Their eyes should be closed, and they should observe their breath. The environment and classroom should be completely silent during this time period. The teacher may choose to dim lights, turn on a small lamp, or turn out lights fully during this stage of the sequence. |