Book it, 1st Grade!

Keeping the “Physical” in Physical Education while Integrating Children's Literature

by

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ABSTRACT

Physical activity (PA) has been shown to increase cognitive function, with higher test scores being reported for students engaged in higher levels PA. Additionally, the integration of the Common Core content into physical education allows for more Common Core content practice while students meet physical education objectives. Integration can be defined as the teaching of two or more subject areas simultaneously to enhance students' learning and understanding. This novel shift to integration is underpinned by Fullan's Change Theory where students may learn content in new and meaningful ways that meet the goals of multiple realms in education. The purpose of this crossover, replication design study was to investigate first-grade students' enjoyment levels (enjoyment exit slips), attitudes (pre- & post-surveys), step counts (accelerometers), reading and listening comprehension (Accelerated Reader testing), as well as students' and teachers' perceptions (interviews & field notes) when integrating children's literature into the fitness segment of physical education. Twenty-one first-grade students, two first-grade classroom teachers, and two physical education teachers from two different schools (Private and Public) in Southwestern, US participated in this study for six weeks each (12 weeks across the two schools). At each school, one first grade class participated as both the control and intervention groups. Overall, the results from integrating children's literature into the physical education fitness segment were positive. Students' enjoyment levels were high, their attitudes remained positive, they maintained similar step counts throughout the intervention periods, and the students scored similarly on the Accelerated Reader assessments from content taught in the classroom versus content presented in physical education. Additionally, students' and

teachers' perceptions were positive, underpinned by Fullan's Change Theory and resulted in the following three themes for students: (a) Motivation and engagement, (b) learning as perceived by students, and (c) home environment, as well as the following two themes for teachers: (a) Motivation and resources, and (b) stay the course. To my knowledge, this is the first experimental investigation of the integration of children's literature into physical education which provides necessary evidence and an invaluable start to this important line of inquiry.

DEDICATIONS

While you feel very far, I know you are near. I see you in the eclectic clouds, in the whispering leaves of the trees, and I see you in the swaying of the grass and all your world's majesty. I know you are with me, and I know that you love me. I will continue to seek you… meet you. Thank you for giving me this once-in-a-lifetime opportunity with your sovereignty and provisions throughout. "For I know the plans I have for you," declares the LORD, "plans to prosper you and not to harm you, plans to give you hope and a future" (Jeremiah 29:11, NIV).

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CHAPTER 1: INTRODUCTION

Physical activity (PA) has been linked to numerous health benefits, including reductions in certain cancers, preventing and managing diabetes, prevention of premature death, decreasing the risk of heart disease, and benefitting the musculoskeletal system (Bonaiuti et al., 2002; Gregg et al., 2003; Holmes et al., 2005; Katzmarzyk et al., 2004; Kemmler et al., 2004; Laaksonen, D. E., 2005; Warburton et al., 2006). It has also been found to enhance academic achievement in certain content areas (e.g., math) (Singh et al., 2019). Physical education is one subject in the school setting that offers PA for children. Moreover, strong physical education programs offer many positive outcomes, beyond PA, such as positive skill development and knowledge, and behaviors to lead healthy lives (Haywood, 2013). Physical education can also benefit other areas in schooling, such as, literacy. Literacy is another essential area in schools since it not only fosters students' cognitive and linguistic developments in the classroom but also transfers to real-world experiences (Snow & Matthews, 2016). Literacy instruction involves speaking and listening, reading, and writing, and these skills are integrated, meaning, each literacy skill is used to help the other. Students will need both physical education and literacy skills to engage in their personal lives, perform well in their future jobs, and much more in life.

Unfortunately, physical education has been marginalized due to high stakes academic testing which can negatively impact the significance of PA and health for children (Wright, 2009). One method to keep physical education a priority while supporting the mission of academic content areas (e.g., high-stakes testing) is to integrate across school subject silos for shared successes (Buell & Whittaker, 2001). For instance, physical education teachers can collaborate with the English language arts (ELA) teacher

and seamlessly integrate reading concepts into the physical education lesson. This idea of integration has the potential to be a positive educational change but will require flexibility and collaboration among school stakeholders (Marttinen et al., 2016).

Fullan's Change Theory

For educational change to occur, numerous disciplines must be willing to think in new and captivating ways (Fullan, 2006). Educational reform aims to "… help schools accomplish their goals more effectively by replacing some programs or practices with better ones" (Fullan, 1982, p. 2). Fullan's Change Theory (1982, 1991) provided the foundation for this research study regarding integration in physical education. Fullan (2007) pinpointed four main change stages including, (a) initiation, (b) implementation, (c) continuation, and (d) outcome. Moreover, if previous change stages have not been satisfied, successful outcomes will not take place. Change requires the presence of four essential factors: (a) clarity, (b) need, (c) quality and practicality, and (d) complexity. However, these four factors must strike a balance. If clarity is absent and complexity abundant, then failure is expected; complexity (e.g., a person's past experiences impact the complexity of a task) and clarity both need balance for practicality and quality to flourish. Changemakers must first discover a "need" to act and change must be comprehendible for teachers to profoundly implement the change in actual practice.

Professional Development

Teachers who are producing advanced outcomes of implementation and are supported and trained by fellow teachers instead of the single/sporadic training sessions from outside instructors with minimal accountability are more successful in implementing programs (Lortie, 1975; Louis & Rosenblum, 1981). Professional

development is the provided educational learning opportunities specific to one's area that is intended to improve teacher practices and outcomes (Patton et al., 2015). Various components go into professional development sessions to maximize the effectiveness of these teacher change efforts. According to Darling-Hammond et al. (2017), the following seven elements create effective professional trainings for teachers: (a) a focus on content, (b) opportunities for collaboration in teaching contexts, (c) effective practice models, (d) using adult learning theory while incorporating active learning, (e) coaching support, (f) sustained duration, and (g) feedback/reflection opportunities.

Teachers are already equipped and knowledgeable. However, with effective professional development, teachers can collaborate and receive support for their teaching. For instance, in a Texan program, Lara-Alecio et al. (2012) studied middle school English language learners' (ELL) English reading and science achievement. The researchers implemented professional development/instructional intervention with the teachers and a comparison group of teachers. In the treatment group, both paraprofessionals and teachers (n=12) collaboratively participated in workshops every other week. At these collaborative sessions, the teachers and paraprofessionals reviewed content concepts, reviewed back-to-back lesson plans, participated in some of the science activities their students would be participating in, and reflected on their students' knowledge and learning. The teachers were also offered strategies for teaching ELL students. The study resulted with those teachers and paraprofessionals who participated in professional development having students with significantly higher reading and science achievement than the students who had teachers who did not participate in the professional trainings. Research shows that by having teachers lead by their own inquiry,

reflexive practices, and collaboration with others, students can perform better academically (Johnston et al., 2021; Lara-Alecio et al., 2012).

When change is meaningfully administered and tailored by individual teachers, implementation in the classroom occurs since the teachers have deeper understandings and meaning making of the change. It is critical to note, however, that while effective professional development to promote change may fruitfully support teacher's work, it is of upmost importance to not only pay attention to the teacher's acquisition of knowledge and skill, but highly consider their emotional state as well. In other words, teachers, should be able to use what they have learned in professional development, led by their own inquiries with a positive state of mind. If a teacher does not positively associate to a professional development, they are not as likely to meet their full potential of knowledge and skill, and therefore, school reform is also unlikely (Fullan, 2006). If teachers have a better understanding of the change, it may be a more positive experience for them, thus, also better serving their students. For example, if mandated change were established for the integration of other content areas in physical education, the change would need to be both technically well developed and positively implemented in practice for the chance of successful educational reform (Fullan, 1982, 1991, 2006).

Integration

Integration is defined as "a combination of two or more content areas that develop students' learning and understandings through multiple methods" (Griffo et al., 2020, p. 4, in review). Integration has been used interchangeably with the word "interdisciplinary." However, these two terms are not synonymous. Integration is the unity of two or more subject areas by one instructor (e.g., what students are learning in

math is integrated into physical education by the physical education teacher) while interdisciplinary involves the collaboration of multiple teachers who integrate each other's content into their lessons (e.g., not only are students learning math in physical education, but the math teacher is integrating what the students are learning in physical education into their math lesson; collaborative teaching).

This study focused on content integration since the physical education teacher integrated ELA into their lessons without the ELA instructor integrating physical education concepts into their lessons. Furthermore, the tailoring of integrative changes to individual schools (not a general-purpose approach), classrooms, and students are essential for positive integration in all classroom settings. The practice of integration in physical education can potentially create positive change for physical education (Marttinen et al., 2016). However, change is multifaceted and includes elements, such as, professional development, new preparation and planning, support, tailoring differently to individual needs, and meaning making for lasting impact and flourishing reform (Fullan, 1982). In Fullan's words (1993),

> Change is ubiquitous and relentless, forcing itself on us at every turn. At the same time, the secret of growth and development is learning how to contend with the forces of change turning positive forces to our advantage, while blunting negative ones. The future of the world is a learning future. (p. 8)

However, as Fullan implicitly posited: For whom and what change should take place? For this research project, one change is studied and includes the integration of ELA, specifically, children's literature into classes of physical education. Although one

cannot deem integration in physical education superior to all other curricular applications, the potential to ignite flourishing change exists (Fullan, 1982, 1991, 1993).

Children's Literature

Children's literature is not just colorful pages of text that students may get excited about. Children's literature has an impact on primary grade students' learning (K-2) (Serafini & Moses, 2014). Moreover, students not only learn to decipher written language with children's literature, but they can learn from the text visuals. Visuals (e.g., video, images) ignite meaning making, teach students various ideas and concepts, and develop their vocabularies (Johnston, 2020). Additionally, children's literature can ignite children's imaginations and show them how to interact and relate to the real world (Fingon, 2011). Moreover, children can obtain new knowledge with a wide range of children's books topics. Thus, children's literature can be helpful and even essential for basic functioning, such as, (a) hypothesizing, (b) comparing, (c), classifying, (d), observing, (e) thinking, (f) summarizing, (g) organizing, (h) criticizing, and (i) applying (Norton, 2007).

According to Serafini and Moses (2014), there are 10 ways children's literature can be used in the primary grades reading workshops: (a) A thoughtful discussion space, (b) language play, (c) reader's community, (d) imagination and curiosity, (e) vicarious experiences, (f) narrative competency development, (g) reader identity, (h) learning about the world, (i) mentor texts, (j) and reading abilities. These ways children's literature can be integrated into reading workshops are discussed in more detail here.

A thoughtful discussion space. Reading aloud children's literature can foster learning for young students to think about and digest the themes of books (Campbell,

2001). Furthermore, the texts that students read are less complex than the texts the teachers can read aloud to them which can foster deep thinking, discussion, and the learning of new concepts. Additionally, students can connect their own understandings as well as their classmates' understandings to newly learned understandings. These collaborations and connections create deeper knowledge of the text.

Language play. When young children are read to in creative and playful ways, it invites an open space where students can also develop language play (Serafini & Moses, 2014). Moreover, students can test written and oral language for themselves which has the potential to increase engagement and help with students' literacy skills. Some examples of language play include rhyming texts and jump rope chants. By embracing language play, students can understand language more deeply and fall in love with reading!

Reader's Community. Teachers can create a sense of community in reading by creating interactive discussions within read-aloud activities and independent reading (Bridges, 1995). Teachers can also read about important topics to facilitate student learning and discussions; on areas, such as, bullying or sharing (Serafini & Moses, 2014). However, Serafini and Moses (2014) make an essential point in that high-quality literature and meaningful discussions, no matter the topic, are positive. Moreover, students can acquire critical thinking skills and learn how to interact with their peers. To increase the amount of time that students engage in reading communities, students can participate in book clubs and literature groups to ignite deeper conversations and interactions among their peers and with the text.

Imagination and Curiosity. Contemporary schooling with strict standards and standardized testing has squandered students' creativity and curiosity in learning (Serafini & Moses, 2014). Children should be encouraged to be curious to spark passion and desire for learning. Children's books can ignite curiosity in young readers, which in turn, will enhance student's imagination and understanding of the world.

Vicarious Experiences. Through the reading of children's literature, children can experience the lives of the book characters (e.g., outcomes, places) that they may never experience in real life (Serafini & Moses, 2014). By vicariously living through the characters of the books, students can learn more about their own lives and situations in deeper and more thoughtful ways. Additionally, students can develop empathy and compassion for others. Many children's books encourage positivity, like accepting yourself and others for who you/they are, as well as teaching of race and culture which promotes acceptance. Lastly, books can teach other positive messages like sharing, teamwork, and helping others. These positive book messages can encourage students to act out in similar ways to similar situations.

Narrative Competency Development. Children can learn of plot structures and narrative sequencing with just the use of children's picture books (Serafini & Moses, 2014). To ease stress of decoding text, children can develop their understanding of stories and various narrative works.

Reader Identity. When young children read books about others who read and how those characters are portrayed, children can develop meaning regarding seeing themselves as a successful reader. Children's books that encourage reading allow children to share their feelings about success and worries in a low-risk classroom.

Learning about the World. Children's literature, specifically, informational texts, can encourage students to read more, and investigate things they are curious about. Additionally, students can read informational texts like historical fiction to learn about the world by reading about human experiences. Not only do historical texts provide information about various events that have occurred, but also the emotion intertwined with these historical events and stories.

Mentor Texts. Students are also encouraged to "read like a writer" (Serafini & Moses, 2014). Reading like a writer encourages students to use others' writing to improve and enhance their own. Teachers can select books for students that have colorful illustrations with repetitive words or information-filled text. These book elements can provide wonderful models for students' writing and pleasure reading.

Reading Abilities. Teachers are instrumental to young children's reading abilities since teachers can model proficient reading through read-alouds and facilitating group discussions and think-alouds (Serafini & Moses, 2014). By bringing the group together to share about their thoughts, students can ask relevant questions and make meaning of what is read.

Children's literature has much to offer students and teachers (Campbell, 2001; Smith, 1988; Trelease, 1989). As Serafini and Moses (2014) stated, children's literature offers teachers more ways to instruct students than just rote skills, and as Bishop (1990) shared, children's literature is "a window on the world and as a mirror into our own existence" (p. 468). Moreover, students learn about the world and themselves through children's literature and the meaning-making process involved. Additionally, teachers

can learn more methods to integrate children's literature into their classroom by deeply connecting with these children's texts.

Intersecting Disciplinary Silos

So, where does physical education fit in? Physical educators can also integrate children's literature into their lessons when teaching physical education content while supplementing reading content. School stakeholder partnerships and the improved physical and academic status of students can occur when professionals within and beyond school communities cut through disciplinary boundaries and collaborate with one another (Scrabis-Fletcher, 2016; Vassiliki et al. 2010). Furthermore, students can potentially benefit from integration by producing multiple conclusions and understanding academic content in new and more meaningful ways. By integrating outside content into physical education lessons, the status of physical education may improve and enhance stakeholders' views of the subject, and therefore, healthy choices. Additionally, students can learn about outside content (e.g., ELA) while being physically active which supports multiple realms in education.

A previous systematic literature review by Griffo et al. (2020) included multiple phases to identify the literature encompassing integrated physical education for the years 2009-2018, including (a) extensive search, (b) coding classifications/ researcher negotiations, and (c) analyzing results. The researchers searched the following content areas integrated into physical education classes: (a) math, (b) science, (c) English language arts, (d) history, (e) music, (f) art, (g) technology, and (h) foreign language.

Forty-six articles were identified in the integrative physical education literature for the 10-year period. Technology was deemed the most popular area of integration into physical education while history, foreign language, art, and ELA were least often integrated into physical education. Additionally, student attitudes and perceptions and student learning in outside content areas (e.g., ELA, science) upon integration into physical education were explored the least. Based on Griffo et al.'s (2020) review, the goal of this project was to study ELA, one of the underrepresented areas (Table 1), integrated into physical education class settings to advance the field of integrative physical education.

Table 1

Integrated Content Areas into Physical Education (2009-2019)

External Content Area	Frequency	Percent
Technology	29	64.4
Music	5	11.1
Multiple areas	3	6.70
Math	3	6.70
Science	2	4.40
Language arts	1	2.20
History	1	2.20
Foreign language	1	2.20
Total	45	100.00

Note: Table taken from Griffo et al. (2020).

Purpose

The purpose of this research study was five-fold and includes examining how the integration of children's literature into the fitness portion of physical education impacts: (a) first-grade students' physical activity levels, (b) first-grade students' reading and listening comprehension, (c) first-grade students' pre- and post-attitudes, (d) first-grade students' perceptions, and (e) physical education and classroom teachers' perceptions of the integration of ELA integrated into physical education. In this dissertation, when "listening and reading comprehension" is mentioned, it refers to the students' performance on the Accelerated Reader assessments post-intervention and control instruction which includes physical activity and reading integration, reading the stories aloud to the students, and partner reading.

It is important to note that the reason for both attitudes and perceptions of first-grade students, classroom teachers, and physical education teachers being examined was because although attitudes and perceptions are similar, they are not the same. An attitude is a tendency or mentality to act a certain way due to individual characteristics and experiences (Allport, 1935). Attitude is intricately linked to one's behavior and include personal beliefs, personality, values, motivations, emotions, and behaviors (Pickens, 2005). Although perception is closely tied to attitude, an individual's perception includes their interpretation and organization to produce their meaningful world experiences (Lindsay et al., 1977). In other terms, persons faced with a situation will interpret the situation in their own meaningful way based on their past experiences. However, regarding perception, the individual's interpretation might be significantly different from reality. In summary, an attitude can be revealed through behavior, actions, or words and

then perceived (perception) by others to develop their own unique interpretations of the situation. Considering these differences between attitudes and perceptions, the current study included the different goals of gaining not only first-grade students' and teachers' perceptions but also their attitudes of the study elements. Attitudes of students were measured via pre- and post- surveys while the attitudes and perceptions of teachers were measured with interviews. Students' perceptions were gathered through interviews.

Research Hypotheses

The current study included six research hypotheses:

1. First-grade students will have higher Accelerated Reader Scores when participating in the children's literature integration during physical education setting for two weeks compared to their participation in the control setting (i.e., regular reading instruction in the classroom setting only) for two weeks across both schools A and B.
2. First-grade students will have similar step counts between the physical education fitness portion that includes children's literature integration and the fitness portion of lessons without children's literature integration.
3. First-grade students will have positive enjoyment levels (average score between a three and a four) when participating in physical education with integrated children's literature.
4. First-grade students will have increased positive attitudes toward reading in physical education from pre-intervention to post-intervention.
5. First-grade students will have positive perceptions when participating in physical education lessons that include integrated children's literature instruction.

6. Participating classroom teachers and physical education teachers will have positive perceptions towards children's literature integration in physical education.

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CHAPTER 2: LITERATURE REVIEW

Physical activity (PA) has been shown to increase cognitive function, with research revealing higher test scores for those students engaged in PA (Castelli et al., 2007; Centers for Disease Control and Prevention, 2010; Fedewa & Ahn, 2011; Sallis et al., 1999). Additionally, teachers who integrate PA into their Common Core lessons and Common Core content into physical education have physically active students who are more engaged in Common Core subject areas and physical education content with the added benefit of increased PA and time spent practicing Common Core content (Hollett et al., 2016; Howard-Shaughnessy & Sluder, 2015; James & Bullock, 2015; Sluder & Howard-Shaughnessy, 2015). These research findings can provide an impetus for Common Core integration in physical education since it simultaneously fosters student development in physical education and enhances students' Common Core achievement, thus, decreasing the marginalization of physical education in schools (i.e., builds credibility of the physical education program). Furthermore, the collaboration of the physical education teacher with classroom teachers can create a cohesive school community that values each subject and all learning. Some students may even learn Common Core concepts better in a PA setting since they are actively interacting with the content in more meaningful ways (Scrabis-Fletcher, 2016). These concrete knowledge connections can produce better retention, deeper understanding, and more engagement for the students (Chen et al., 2011).

Not only does integration meet physical education standards, but the Common Core State Standards as well. Although integrating the Common Core standards in physical education may be challenging since teachers and students are needing to think

more creatively, physical education and classroom teachers can work collaboratively to create meaningful integrated lessons (Scrabis-Fletcher, 2016). Additionally, keeping physical educational content and goals a priority while integrating Common Core content can be difficult. However, if physical education teachers keep clear goals and outcomes, Common Core content should not overpower the physical education lesson. Physical education holds potential to meet various goals and objectives for students in multiple content areas.

This current project studies stakeholders' PA levels, reading and listening comprehension, perceptions, and pre- and post-attitudes of children's literature integrated into the fitness segment of physical education. Physical education and English language arts (ELA) have different standards originating from different sources (i.e., The Society of Health and Physical Educators [SHAPE America] & Common Core State Standards Initiative). Although physical education and ELA can be welded together to create an engaging integrated curriculum, both have different outcomes and goals to consider. The literature on physical education and ELA are discussed separately here for deeper understandings before the process of intertwining both content areas for integration is discussed.

Fullan's Change Theory

Various disciplinary silos must accept new and creative methods of thinking for educational change to take place (Fullan, 2006). Educational change "is to help schools accomplish their goals more effectively by replacing some programs or practices with better ones" (Fullan, 1982, p. 2). Fullan's Change Theory (1982, 1991) lays the foundation for the current study since this study focuses on new methods of change with

integration in physical education. According to Fullan (2007), successful change includes the following broad stages: (a) initiation, (b) implementation, (c) continuation, and (d) outcome (or institutionalization). The first broad stage that Fullan addresses is initiation. Successful initiation of change or reform depends on certain factors, including the access and means to create change (e.g., budget), and the support of stakeholders (e.g., teachers, administrators). Furthermore, the beginning success of reform is closely watched since the launch often reveals how the change will end (successful or unsuccessful). If initiation of reform is supported, it can then be implemented. Implementation of change depends on unique characteristics of the reform, the context of where the change will occur, and outside influencing factors (government agencies). It is important to note that the focus would not be on implementing something (e.g., integration), but rather, the success of the students (e.g., reading and listening comprehension scores) to prepare them for the future (e.g., college-ready, careers). If successful preparedness of students is achieved, for example, then continuing this reform would be wise. Continuation refers to the decision of whether change continues based on positive or negative responses. Many of these positive and negative factors can include budget or the lack thereof, committed/noncommitted stakeholders, and consistent/inconsistent support along the way to continue long-term, successful change that produces desirable outcomes. Outcomes occur when the reform becomes common practice and yields positive and consistent results. Outcomes can result in a changed action or thinking but is never permanent since every context and interaction produces different outcomes. This is especially true in the school setting where individual classrooms are unique from one another and the students within them. At the heart of change are the teachers' understandings and attitudes of the

reform. If a teacher understands and has a positive attitude due to change yielding positive results, then change has the potential to be ongoing.

The current study will complete these four steps to initiate and implement the integration of ELA into physical education to continue this innovative approach throughout the study and analyze the outcomes from first-grade students' physical activity levels, Accelerated Reader scores, pre- and post- attitude data, and perceptions as well as teachers' attitudes and perceptions. The outcomes will shed light on integration methods in physical education and address implications for researchers, scholars, and teachers.

Collecting Young Students' Accelerometer Data

Research has shown that accelerometers have been used successfully with a wide range of ages, from toddlers to the elderly, showing that even youngsters can wear this objective technology device and provide accurate results (Gao et al., 2015; Kovalskys et al., 2017; Weaver et al., 2016). For example, Gao et al. (2015) examined 140 first and second grade children's physical activity intensity levels (sedentary, light, and moderate-to-vigorous PA [MVPA]) during recess, physical education, and exergaming programs using accelerometry. The study successfully concluded with reliable results for youngsters, showing that, with accelerometers, the children had higher levels of PA in exergaming and recess than in physical education, providing implications for implementing comprehensive school physical activity programming. Gao et al. successfully used accelerometers with the first and second grade students by using an elastic belt to affix the accelerometer to the children. Kovalskys et al. (2017) and Weaver

et al. (2016) also used elastic belts to place accelerometers on youngsters and measure activity levels.

For instance, Weaver et al. (2016) examined 323 first through third grade students' sedentary, light, and MVPA using accelerometers to assess whether children were accumulating 30 minutes of MVPA per school day. The authors also examined which segments during the school day contributed to the students' MVPA (i.e., lunch, class time, recess, and physical education). It was found, with accelerometer usage, that boys and girls received most of their MVPA on PE days (11.8 and 13 minutes per day, respectively). The class time segment was next, resulting in 11.4 and 12.5 minutes of MVPA per day for boys and girls, respectively, followed by recess (boys receiving 5.2 and girls 6.5 minutes of MVPA per day), and lastly, lunch with boys receiving 2.0 minutes and girls 2.4 minutes of MVPA per day. The accelerometers were able to show that most students were not meeting the 30 minutes of MVPA per day. In conclusion, throughout the literature accelerometers have been shown to be a reliable tool to objectively measure youth's MVPA and are considered a standard tool for measuring children's PA (Pate et al., 20016; Sirard & Pate, 2001). Therefore, the current study (Chapter 3) will use accelerometry to measure first grade students' PA levels (sedentary, light, or MVPA) during the intervention period.

Measuring Young Students' Attitudes

Reliable measuring of first-grade students' attitudes has been successfully studied and demonstrated throughout the literature (Cloer & Dalton, 2001; Diamond & Onwuegbuzie, 2001; Kush et al., 1995; McKenna & Kear, 1990; McKenna et al., 1995; Worrell et al. 2006). Using the Elementary Reading Attitude Survey (ERAS), also

modified and used in the current study, McKenna et al. (1995) successfully reported that first through sixth grade girls had more positive attitudes toward reading than boys in the same grade levels regarding both recreational and academic reading activities. The ERAS is an instrument developed and validated by McKenna and Kear (1990) that reliably measures elementary students (grades first through fifth) reading attitudes.

Kush et al., also studied young children (grades first to fifth) using ERAS, to examine the attitudes of 289 students in first through fifth grade. Significant differences were also found in attitudes between genders in all grade levels (except for second grade). Similarly, Diamond and Onwuegbuzie studied young students' reading attitudes (1,968 kindergarten through fifth graders) using the ERAS. Higher reading attitude scores (more positive attitudes) were also reported for girls than boys. Diamond and Onwuegbuzie also found that reading attitudes started to decline rapidly beginning in fourth grade which supports McKenna et al.'s findings (1995) that also noted students' attitudes toward reading declined as grade level increased (except for high-ability scoring readers). Kush et al. (1995), on the other hand, did not find any differences among grade levels one to five for reading attitudes.

The ERAS has shown to be used successfully with young students (e.g., first grade) and produce reliable results. It is one goal of the current study to gain first grade students' attitudes towards reading and physical education pre- and post-intervention. The ERAS has been chosen for use in the current study and will be modified and validated to include physical education attitude categories (along with reading) with first grade students.

Measuring Young Students' Perceptions

Using interviews to gather perceptions has typically been conducted with older students mainly due to the short attention span of young students (Habók & Babarczy, 2018). However, there is evidence that in the right conditions, younger students (e.g., first and second grade students) can successfully communicate their thoughts and experiences on learning (Wall, 2008). Furthermore, first grade students' perceptions have been studied throughout the literature, specifically in physical education.

For instance, Solmon and Carter (1995) examined 104 Kindergarten and first grade students' perceptions regarding physical education over a period of four months using student and teacher interviews, student artwork, and field notes. More specifically, young students' definitions of physical education (their perceptions) were collected by researchers based on the students' actions and comments during field notes and interviews. Each of the 104 students were individually interviewed for 3-5 minutes regarding if they liked physical education, what they called physical education class, and their thoughts about the physical education teacher. Solmon and Carter found that most students called physical education class the following: Exercise, physical education, or P.E. Additionally, it was consistently found that the children liked physical education because of the teacher, activities, exercise, and that it was fun. The students also responded to what they were learning in physical education which included, hula hooping, jump roping, crab walking, catching beanbags, getting into shape, getting fit, and learning about respect. How the students responded to what they thought their teacher wanted them to learn included, getting stronger and fit, getting bigger muscles, getting 'real' exercise (e.g., running, push-ups), and management (e.g., "to pay

attention"). The student drawings were used to confirm or disconfirm the interview responses from the children regarding their definitions of physical education. The drawing results depicted the teacher as the central figure, and surprisingly, 20% of the student drawings depicted students waiting in line or sitting down instead of engaging in physical activity.

Gathering the perceptions of young students is possible and can contribute meaningful data for informing classroom instruction and research communities (Kos & Maslowski, 2001). Instead of dismissing the idea of collecting youngsters' perceptions, it is important to first answer 'why?' for the exclusion knowing that there are successful ways to capture young students' thoughts and voices. Acknowledging that there is possibility for capturing students' meaningful perceptions, the current study will use interviews to gather first grade students' perceptions regarding an integrated physical education segment.

Physical Education

It is recommended that school-aged students receive 60 minutes of moderate to vigorous PA each day (SHAPE America, 2013). Physical education is just one area that students can acquire physical activity during the school day. Although providing PA is one goal of physical education, a quality physical education program offers much more than PA. Quality physical education programs provide students with the skills, attitudes, knowledge, and behaviors needed for a lifetime of PA. The skill set of a physically literate person leads to healthy habits beyond the school setting (Baena-Extremera et al., 2014).

Physical Education Standards: Kindergarten-12th grade. The Society for Health and Physical Educators ([SHAPE America], 2013) has national standards and grade-level outcomes for Kindergarten through 12th grade physical education. These standards establish what students should be able to do and know from a high-quality physical education program. The following national standards are used by physical education teachers across the country:

> Standard 1: The physically literate individual demonstrates competency in a variety of motor skills and movement patterns.
>
> Standard 2: The physically literate individual applies knowledge of concepts, principles, strategies and tactics related to movement and performance.
>
> Standard 3: The physically literate individual demonstrates the knowledge and skills to achieve and maintain a health-enhancing level of physical activity and fitness.
>
> Standard 4: The physically literate individual exhibits responsible personal and social behavior that respects self and others.
>
> Standard 5: The physically literate individual recognizes the value of physical activity for health, enjoyment, challenge, self-expression and/or social interaction.

Unfortunately, many schools have reduced physical education time in schools which leaves minimal time for instruction with the use of these standards (Carter & Welner, 2013). Some schools only provide 30 minutes twice a week for physical education; that is just one hour a week without accounting for other variables that overtake instruction time (e.g., being on time to physical education, classroom management). Although physical education has experienced educational injustices, with

the SHAPE (2013) standards set in place, physical education teachers can plan better, tailor instruction to meet individual student's needs, and create goals, and therefore, better serve their students (SHAPE, 2013). Physical education teachers should continue making the best use of their instruction time while advocating for policy change (Emi Tsuda et al., 2019).

English Language Arts

English language arts is a necessity in schools (CCSS, 2010). The ability to read, write, listen, and speak with complexity are greatly impacted by ELA in the classrooms. Moreover, learned literacy skills from the classroom can and should transfer to other areas of students' lives (e.g., hanging out with friends, work).

For instance, reading, used for almost everything we do, such as reading a menu, a billboard, or directions to a desired destination is necessary to navigate in today's world. However, not all students positively associate to reading traditional plain text (Partin & Gillespie-Hendricks, 2002). According to Partin and Gillespie-Hendricks, students with positive attitudes toward reading have had some or all of the following environmental variables in place with reading while growing up: (a) having a library card, (b) being read to, (c) being read to by multiple people, on a regular basis (d) books gifted to them, (e) parents with higher education, (f) personal book collections, (g) parents' who have book collections, (h) parents who show interest in their reading, and (i) having parent and children discussions about books. But what about the students who did not receive these experiences or only a few of them growing up? Heath's work (1982) sheds light on this question by pointing out that students with various economic backgrounds and cultures will have strengths and abilities in various other literacy

practices. While these students from differing backgrounds and cultures may not practice the traditional literacy provided in school (e.g., reading children's literature), they may be more proficient in other areas of literacy and language that are not as valued in schools.

Schools and teachers can foster positive relationships with students by recognizing the range of literacy skills and practices that students bring to school every day, including the students' connections to reading various types of children's literature (Guthrie et al., 2007). Reading and writing should be viewed through a constructive lens to remind teachers of the importance of students' background knowledge since their backgrounds significantly impact their interpretation of texts (Anderson & Pearson, 1984). Teachers can also allow individual students to choose readings that interest them and are relatable to ignite deeper thinking and more exuberant discussions about the topic being discussed (despite different texts). For example, the teacher can have students share their books with their classmates and work together to create a real-world project outcome based on the topic. To create positive connections for children reading in schools, teachers should allow students more freedom with their choice of books (with teacher approval) since each student has their own interests which can provide an impetus for increased engagement, positivity, and knowledge of other literary content when reading books.

Additional literacy skills include speaking and listening which provide students with the opportunity to learn, for example, how to listen and speak during an interview, hold a conversation with a friend or with a supervisor, give a formal presentation in class or at work, and much more. Importantly noted, we are learning to think when we listen and speak (ASCD, 2011):

> "Both speaking and listening are forms of thinking because they allow a nascent thought to be refined through conversation. The better a student's verbal communication skills the more quickly his or her thoughts about a complex topic gain clarity and coherence"
>
> (Roberts & Billings, 2008, p. 3).

The importance of listening and speaking are significant; students will need listening and speaking skills for the rest of their lives. Through listening and speaking, students acquire, assess, and offer complex information, plans, and evidence (CCSSI, 2010).

Writing is another literary skill in the school curriculum that offers many benefits to students (CCSS, 2010). However, many students perceive writing as a laborious exercise in which they need to jot down thoughts on paper while attempting to correctly spell, format, and use proper grammar (Defazio et al., 2010). Students should know the benefits of writing for increased motivation and engagement in their writing efforts. Benefits, to writing, such as, developing critical thinking skills, increased memory functioning, problem-solving, and creativity.

Reading, speaking, listening, and writing all work together as a cohesive whole in students' ELA progress in school and transference into their own lives. It is imperative that maximum opportunity for profound experiences in reading, speaking, listening, and writing are provided to students in ELA for successful transfer into real-world settings (e.g., workplace, relationships). Lastly, it is important for teachers and researchers to understand varying literacy perspectives since understandings of literacy instruction and learning are shaped by theory (Perry, 2012). The understanding of these theories has the potential to aid researchers of literacy to frame their professional work as well as

practitioners understand and make meaning of research in the literacy field. Therefore, varying literacy perspectives are discussed in detail here.

Differing literacy perspectives. According to Perry (2012), sociocultural is an umbrella term with three unique theories underneath, including (a) literacy as social practice, (b) critical literacy, and (c) multiliteracies. Across these three theories, various scholars of sociocultural literacy perspectives define *literacy* differently which informs ELA. Therefore, understanding is warranted for the following: (a) how people use literacy in their daily lives, and (b) how some people's literacy practices may be different from the norm. By knowing these two pertinent details, we can make literacy more relevant, meaningful, and understandable for students. Perry makes a solid point that all teachers and learners should carry with them: The understanding that the development of literacy has the potential to, and does happen, not only in formal school settings, but in all places and contexts.

Literacy as a social practice. Strongly rooted in Street's work (1984), are the multiple methods people use in their everyday lives for reading and writing. Street's two types of literacy include, autonomous and ideological. The autonomous model conceptualizes literacy in the form of strictly technical and including formal instruction that is thought to be a skill set applicable to any situation. Furthermore, literacy as a social practice contains either illiterate or literate individuals with deficient marked for those categorized as illiterate. Opposing autonomous literacy includes the ideological model which conceptualizes literacy in the form of a practice set (opposed to skill set in autonomous) that are interconnected to societal power and cultural structures and rooted in specific contexts.

What people do with literacy is seen as social practice. Whereas literacy events are what can be seen, and literacy practices are beliefs and attitudes (i.e., what we cannot see). For instance, we can consider the social practice of reading of the Bible. This social practice engages others for various reasons (e.g., prayer, study classes, service) and connects people to the higher domains of spirituality which has been molded by church institutions with dimensional history and power.

Critical literacy. Not only does critical literacy include power and empowerment, but identity and agency as well (Perry, 2012). According to Freire (2001), literacy is much more than the skills of cognition, it is also involving power relationships. The relationships that learners have to the world is literacy:

> To acquire literacy is more than to psychologically and mechanically dominate reading and writing techniques. It is to dominate these techniques in terms of consciousness; to understand what one reads and to write what one understands; it is to communicate graphically. Acquiring literacy does not involve memorizing sentences, words, or syllables – lifeless objects unconnected to an existential universe – but rather an attitude of creation and re-creation, a self-transformation producing a stance of intervention in one's context (p. 86).

Multiliteracies. The theory of multiliteracies is similar but different from literacy as a social practice (Cope & Kalantzis, 2000). Like literacy as a social practice, multiliteracies focuses on authentic contexts where people practice literacy as well as the power dynamics involved with literacy and the learning of literacy. However, multiliteracies differ from literacy as a social practice since multiliteracies focus on various forms of communication beyond just language. More specifically, while literacy

as a social practice focuses on literacy skills surrounding print, multiliteracies focuses on multimodal practices which include gestural, visual, spatial, audio, and many more types of representation for meaning making. For instance, students can listen to various songs and compare across cultures represented in books, while multimodality fosters meaning making; writing/print are only a part and slice of the audio, visual, and spatial patterns. People feel so strongly about this that they criticize those in literacy who focus primarily on print (Kress, 2000). However, this does not mean that scholars of multiliteracies completely cast-off print literacy, they just view it as only one of the many beneficial forms of meaning and representation.

How literacy perspectives inform and are executed (or not) in Arizona ELA Common Core Standards. According to the Common Core State Standards Initiative (2020), a frequent myth is that the standards tell the teachers what they need to teach. However, the Common Core State Standards initiative claim that they believe teachers know best for what works in their unique, individual classrooms. Furthermore, the initiative states that the standards are set in place to establish what students need to learn, however, it does not force teachers to teach the required content present in the standards. Moreover, school stakeholders should decide the best route to teaching their students the standards. In other words, although the Common Core State Standards are established to show what students should be learning at grade-level, the standards do not tell teachers *how* they should be teaching. For instance, teachers can read a book with second graders about gardening, or teachers can with or without conjunction of the book, take their students out to garden for themselves. If teachers are teaching what the students need to learn based on the Common Core State Standards, the instructors can choose the best

methods to teach their unique students. With this point in mind, all literacy perspectives can fit into the mold of the Common Core State Standards, but depending on the teacher, some of these literacy perspectives are not executed.

For example, literacy as a social practice can fit into the mold of the Arizona Common Core State Standards if a teacher is using the standards to focus their teaching on printed text (Perry, 2012). Additionally, a multiliteracies stance on literacy can be executed in Arizona's ELA standards if the teacher bases their teaching on multiple methods of communication for meaning making besides just language and print, such as, spatial, gestural, visual, and more. Lastly, critical literacy can also be executed as a part of the Arizona Common Core State Standards when teachers have students read texts relating to different parts of the world, leading to analysis of social issues and power relationships always present in shaping the world (Johnston et al., 2021). This can provide an impetus for students to become critical problem-solvers and critical deep thinkers when they read text. Moreover, by relating text to the world and allowing students to critically think for themselves, they create their own identity where they do not believe everything they read. They become skeptical readers who make their own decisions about their beliefs of the world.

Common Core and Standardized Testing

The Common Core standards and standardized testing for all grade levels have not only impacted ELA, but physical education as well (Casbergue, 2017; Strauss, 2014; Wright, 2009). In 2014, students needed to be "proficient" in ELA or classroom teachers were at risk of losing their jobs. Therefore, much pressure was placed on teachers to "teach to the test" to hopefully get high standardized test scores for their students.

Unfortunately, teachers were assumed as less-effective teachers if their students were performing poorly. Due to these pressures, math and ELA became top priorities in schools, and thus, negatively impacted other important content areas like physical education. Since physical education is not a tested area in schools, less time and focus has been given for physical education (Graham et al., 2002).

In reading specifically, the Common Core standards set the tone for more sophistication and refinement in K-2 grades than previous years (Casbergue, 2017). For instance, children are now expected to interpret and compare various texts as well as cite evidence of their findings and responses from the texts. Additionally, students engage in developmentally appropriate activities surrounding writing and reading. Moreover, the activities that students engage in can be completed with rich learning experiences enveloped with students' content interests.

Opportunity Gap. Although the Common Core standards were established to increase test scores, the standards have received backlash due to the prevailing opportunity gap of students from various backgrounds (Gorski, 2013). Furthermore, when No Child Left Behind (NCLB) was launched in the early 2000s, it was required that third through eighth-grade students be tested every year (Strauss, 2014). Moreover, in 2014, each student needed to be "proficient" or else teachers could potentially lose their jobs. Due to NCLB's introduced pressures, teachers started to "teach to the test" and even cheat to increase student achievement scores (Carter & Welner, 2013; Nichols & Berliner, 2007). Some people from large urban school systems, such as, Baltimore, Los Angeles, Chicago, Houston, Oakland, Washington, DC, and New York City participated in unethical activities including, giving students the test in advance, the teacher walking

around and encouraging students to change their answers during testing, or teachers even changing students' wrong answers to the correct answers after the test. This corruption not only damages the educational system, but our students who should have a risk-free place to learn deeply and meaningfully.

The pressures of testing can not only result in cheating and corruption, but a significant restriction of the curriculum. According to Carter and Welner (2014), five years preceding NCLB, instructional time for ELA and math were increased in more than 60% of school districts. Therefore, 44% reported time reductions for other subjects, such as, recess, art, social studies, music, science, and physical education. Curriculum restriction happens more frequently in schools in disadvantaged areas with disadvantaged students. Moreover, poorer districts reported increased time for Common Core subjects than other subjects (76% of poorer districts) while suburban districts reported a decrease in time for Common Core subjects (69% of suburban districts). This one-size-fits-all approach surely does not fit all students from varying backgrounds.

According to Carter and Welner (2014), there are four research-based "opportunity-to-learn" variables that when fostered, increase student achievement and even general school success. These variables from the literature include, (a) the quality of curriculum, (b) successful instructional methods, (c) time on task, and (d) the depth of teaching. Unfortunately, many economically disadvantaged and students of racial and ethnic minority receive a confined curriculum, and therefore, always score lower in all states and grade levels on standardized tests compared to their privileged peers. This confined curriculum leads to biased testing on high-stakes test content. Disadvantaged students may not relate to test content since the students are from different backgrounds.

Therefore, test results showcase disadvantaged students' varying backgrounds rather than their content knowledge. Disadvantaged students also lack additional outside resources that their advantaged peers use to practice test content (e.g., tutor, computer/laptop) which further increases the opportunity gap in education. Carter and Welner (2014) explain the opportunity gap succinctly: "The opportunity gap increases as the opportunity to learn decreases" (p. 112).

Many people are prone to associate high-quality schools with high standardized test scores (LaCour et al., 2017); however, a school's status or students' learning are not defined by standardized test scores. What is available to students outside of school significantly impacts students test scores. Furthermore, student performance should not be the sole focus of positive outcomes from schools since available opportunities should also be considered regarding student learning. According to LaCour et al., for schools to cultivate a welcoming and engaging environment, two areas need solidification: "broadening and enriching learning opportunities and creating and maintaining a healthy school culture" (p. 9).

Equitable opportunities should be given to all students in all subject areas (e.g., ELA, music, science, physical education, math). In sum, schools test scores should not and need not be relied upon alone as measures of school and student outcomes (LaCour et al., 2017). There is hope that opportunity gaps can be significantly lessened to reach and engage all students regardless of their academic or behavioral issues.

> Those who like them [Common Core State Standards] should use them, but they should be revised continually to adjust to reality. Stop the testing. Stop the rating and ranking. Do not use them to give privilege to those who pass them or to deny

> the diploma necessary for a decent life. Remove the high stakes that policymakers intend to attach to them. Use them to enrich instruction, but not to standardize it (Strauss, 2014, p. 10).

Every student should have equal opportunities to learn and flourish in life; and by eliminating extreme pressures (e.g., teacher firings if student scores are too low) in places of learning, both teachers and students have the potential to perform better (LaCour et al., 2017). One method that can help classroom teachers is for the physical education teacher to support student learning of not only physical education but other content areas as well (Scrabis-Fletcher, 2016). For example, the physical education teacher can deliver reading-integrated physical education lessons to not only teach students their daily lesson, but to reinforce content they are learning in ELA. This support may help reduce pressure for the classroom teacher as well as create reciprocity between seemingly opposite content teachers.

First Grade English Language Arts Common Core and Standardized Testing

The K-5 Common Core standards outcome areas include writing, speaking and listening, reading literature, reading informational text, reading foundational skills, and language (CCSS, 2010). Although these areas are listed separately, the K-5 ELA Common Core standards are holistically integrated where students use certain literacy skills to help with other literacy skills. For example, when students read-aloud, they are not only reading, but they are also speaking while others are listening. From the read-aloud activity, students can further the content by incorporating writing through jotting down their understandings from the read-aloud session. Although integration, in the

teaching of the Common Core State Standards, is efficient and ubiquitous, each outcome is explained here separately for clearer understandings.

Writing. With the use of the Common Core State Standards, the students can develop increased experiences in multiple language areas including, but not limited to, syntax and vocabulary, and the formulation and organization of ideas (CCSS, 2010). Additionally, students learn how to produce and publish writing, conduct research to share their knowledge, and learn of various text types and purposes (e.g., drawing, writing).

Speaking and listening. Students focus on collaboration, communication, and the presentation of knowledge and ideas (CCSS, 2010). Specifically, students focus on collaboration and communication in small groups, large groups, and with peers, and adults. Additionally, students learn to take turns when speaking to others, ask for clarification, and clearly express themselves to others whether feelings, thoughts, or ideas.

Language. Students focus on the different ways of using standard English, such as, grammar when writing and speaking (CCSS, 2010). Moreover, students learn of capitalization, punctuation, and spelling. Additionally, students learn of vocabulary terms and usage, such as, words that appear to be the same but are different. Take "fair" for instance, fair can refer to either a state fair with cotton candy and rollercoaster rides, or fair can mean reasonable. Students also learn to categorize objects (e.g., shapes) and use terms and phrases that they pick up from reading or conversations with others.

Reading: literature. Students learn to ask/answer about key text details, retell key details of stories, and recognize major events, characters, and settings from stories

(CCSS, 2010). Additionally, reading literature encompasses the ability for students to identify different types of texts, such as, poems or picture books, and the names of the text illustrator and author. Students also learn to synthesize across stories by identifying alike and unalike aspects across characters. Lastly, students begin to participate in group readings with understanding and purpose to increase their ranges of reading.

Reading: foundational skills. Students learn the basic features and organization of print, such as, reading top to bottom, left to right, and page by page, the sequence of letters used to formulate the written language, lower- and upper-case letters, and spaces between words in print (CCSS, 2010). Additionally, students focus on phonological awareness with spoken words, phonemes, and syllables (e.g., blending, pronunciation, rhyming words). Phonics and word recognition are also a focal point for decoding words. Lastly, students learn fluency by reading texts with understanding and purpose.

Reading: informational text. Students learn to read informational text by recognizing the front and back cover, the book's title page, and the author and illustrator names along with their roles with the text (CCSS, 2010). Additionally, students ask and answer questions regarding key text details, and connect text and illustrations of places, people, ideas, or things. Students also synthesize content across other similar books to compare/contrast text descriptions, illustrations, and more. Lastly, students again engage in understanding and with purpose within group reading activities. Students are expected to progress through these grade-specific outcome standards each year and carry their learning with them to subsequent years. Although the Common Core State Standards has been the center of much controversy with the pressure it presents for all school stakeholders, with the Common Core State Standards set in place, classroom teachers can

ensure critical learning experiences for students and stay on path to complete grade-level outcomes and goals. Considering the importance of both ELA and physical education, as previously discussed, the literature surrounding the amalgamation of physical education and ELA is introduced.

Uniting Agents of Change

Literacy can be an indispensable area in schools and in life (Snow & Matthews, 2016). Moreover, literacy teaching has the potential to transfer into real-world settings since students can develop and establish meaningful cognitive and linguistic growth. Furthermore, literacy instruction is an integrated field since reading, writing, speaking, and listening are all essential literary skills used to help each other. Also essential in schools and in life is physical education.

As a part of the physical education field, PA may be integrated into the classroom. Physical education is vital for children's emotional and physical health, and learning (CDC, 2010; Warburton et al., 2006). The school setting is also a key location in which students can acquire PA since school is where students spend most of their waking hours. However, the nationally recommended 60 minutes of PA per day is still not met by most school-aged children which unfavorable impacts their health (e.g., chronic illnesses) (American Heart Association, 2016; SHAPE America, 2016). Therefore, multiple initiatives have taken preemptive measures by supporting PA programming to fight against childhood overweightness, and physical education is one area that students can acquire PA (Institute of Medicine, 2005; World Health Organization [WHO], 2011). Additionally, other methods have been utilized to increase PA, such as, PA breaks in the classroom (Castelli & Ward, 2012). PA breaks offer short bouts of PA between

classroom instruction time to not only increase students' PA minutes throughout the day, but to get students more engaged and focused on the classroom content. Although it has been shown that there are barriers to implementing PA breaks in the classroom (e.g., lack of time and knowledge, imprecise expectations), there are also many facilitators (e.g., children's positive acceptance of such breaks, teacher and leadership support) that aid in offering the short- and long-term benefits that PA breaks can provide to students (e.g., health and learning outcomes; Dyrstad et al., 2018).

Also supporting physically active lifestyles, physical education teachers may integrate classroom content into their lessons to support academic areas while keeping students just as physically active (Griffo et al., 2018). This integration method is often used to increase the status of a physical education program in the school setting since this strategy undergirds content in multiple subjects (Scrabis-Fletcher, 2016). Increasing the status of physical education in schools has the potential to not only remain a key content area in school curricula, but also an integral piece in education for all school stakeholders. Additionally, with this integration method, the physical education teacher can branch out from his/her silo area and create meaningful collaborations/connections with other teachers. This paper focuses on the physical education teachers integrating classroom content into physical education.

Although different content areas (e.g., math, science, music) and topics (e.g., oral and written speech) than the current study, multiple researchers have examined unique outside content integration into physical education. Several of these studies are discussed in the next section.

Integrating English Language Arts into other Content Areas

English language arts into social studies. Swanson et al. (2015) examined the integration of ELA into social studies with 11 social studies and nine ELA teachers (N= 20 teachers). More specifically, the teacher participants were from three different school districts, two being in both southeastern and southwestern regions of the United States, and one district in a rural area. The participants were purposively selected based on the following criteria: (a) taught social studies or ELA in grades 7-12, (b) had a minimum of 3 years classroom teaching experience, and (c) deemed as a content expert by their administrative staff. Swanson et al. modified a previous observation tool and created a new 3-dimensional tool for their specific study used to code and record teacher's comprehension and vocabulary instruction during class time. First, the observers would select whether the instructional component was comprehension or vocabulary, and then move to the subcategory of instruction. For example, vocabulary includes morphology, context clues, and definitions. While comprehension includes background knowledge, preview text, discussion, and comprehension monitoring and strategies. Additionally, if the teachers used text in their instruction, the observers indicated whether the text was narrative or expository, the type of reading from the text (e.g., independent reading, whole-group), and the amount of time in minutes spent reading from the text. Thirdly, the observers would rate the instructional quality based on a 4-point scale (i.e., low, low average, high average, high). Lastly, the observers would rate the levels/approximate percentages of student engagement during the class period by means of another Likert scale (0%-25%, 25%-50%, 50%-75%, 75%-100%).

Swanson et al. (2015) used a mix of in-person observations as well as audio-recorded observations to collect data since just having a researcher in the room alone can change usual findings. The observers also met with the teachers prior to observations to establish a relationship to ease into the observations whether audio-recorded or in-person. The teachers were instructed not to change their lessons or routine based on the researchers. Per teachers, one class period was randomly selected for observation. Additionally, observation dates were randomly selected as well. Two in-person and six audio-recorded sessions were completed over the course of the academic year. The observers took detailed field notes and used the observation tool each event. The results showed that vocabulary was used in varying amounts during social studies classroom instruction with about half of classes observed using vocabulary during social studies (51.9%). Context clue instruction was used 11.4%, and morphology occurred the least in the observed social studies classrooms, occurring only 3.8% of the time across all participating teacher's classes. Additionally, comprehension was observed roughly half of the time (54.5%), with 43.1% of social studies classes being observed using background knowledge. Twenty percent of observed classes used comprehension strategy instruction, and about 40% used comprehension monitoring. Lastly, discussion of content during the social studies classes was observed only 7.6% of the time. The quality of instruction ranged from 1 to 2.45, with most content taught being of higher quality in ELA than social studies. The only two areas where social studies were rated higher quality of teaching than ELA included, building background knowledge and discussion.

The goal of Swanson et al.'s study (2015) was to investigate the amount of ELA components used in social studies classrooms. Their findings provide important

implications for future teachings in social studies classrooms. Moreover, one implication is the author's note including the integration of ELA content into social studies to help students achieve higher and prepare them for college and the workplace since maximizing the opportunity for students to read, improve their comprehension, and build vocabulary are essential for raising students' literacy achievement levels.

English language arts into science. Wright and Gotwals (2017) appropriately integrated ELA into science for educational change and success for Kindergarten. Furthermore, Wright, Gotwals, and other professionals in science and literacy education designed a 4-week curriculum unit, aligned with CCSS ELA and the Next Generation Science Standards, to investigate 147 Kindergarten students' oral language outcomes with science talk. The control group completed a business-as-usual science class while the intervention group completed science class with ELA integration. Some of the integrated activities included, (a) questioning (students explore and investigate the question), (b) exploring (students explore and play to complete multimodal activities related to science), (c) vocabulary (the students learn of various science vocabulary), (d) reading (the teacher reads aloud to students from informational books to enhance science vocabulary), (e) discussion (the teacher allows students to expand on their observations by practicing their thinking and talking like scientists), and lastly, (f) writing (the teacher models science writing and gives the Kindergarten students the opportunity to write and draw in their science journals). It was found that the Kindergarten participants in the intervention group outperformed the students in the control group since the intervention group was able to effectively provide evidence-based support, draw and make claims, demonstrate knowledge of science vocabulary, and correctly use the science vocabulary

in a science setting. Overall, the integration of ELA into science resulted in positive outcomes for Kindergartener's science discourse.

English language arts into math. Yilmaz and Topal (2014) recognized the apparent relationships between math and ELA despite others' past opposing views (e.g., Rainer & Matthews, 2001), and decided to research ELA concepts in math through a content analysis of the Common Core State Standards-ELA (CCSS-ELA). More specifically, the ELA K-2 content objectives were investigated to tie into mathematical practices and reasoning. Yilmaz and Topal performed document content analysis to assess if CCSS-ELA standards could aid mathematical thinking and knowing in the following three stages: (a) analyzation of English language arts (ELA) standards and related literature by one language arts expert and two math educators; (b) independent analysis of the ELA standards that can aid math thinking and knowing by the two math experts; and (c) the math and ELA experts independently placed the chosen standards into categories and analyzed the level of agreement. Additionally, one math educator assessed the chosen standards placed under each agreed category.

The three categories agreed upon, include (a) multiple representations, (b) analyzing and understanding word problems, and (c) mathematical classroom discourse. The researchers, experts, and educators concluded that all three of these math categories can be supported with ELA integration. For example, multiple representations, can be in the form of written, illustrative, or verbal with the use of texts. Additionally, math word problems can be supported by ELA through prompting and help, and students answering questions about text (who, what, when, where, how). Lastly, classroom discourse in math can be supported by ELA integration through the retelling of stories and key details,

speaking so others can hear, expressing feelings ideas, and thoughts clearly, retelling stories with central details, and asking/answering questions to gain clarity on topic information. Although this study was not an intervention study, the researchers found a unique way to show ELA and math integration.

Integrating Outside Content into Physical Education Class Settings

English language arts into physical education. Vassiliki et al.'s integration study (2010) comprised of ELA, but a different ELA topic than the current study (oral and written speech, not children's literature integrated with physical education). There is a powerful relationship between language and physical education since many studies confirmed that speech issues are often linked to motor problems and vice versa (e.g., Smith, 1989; Visscher, Houwen, Scherder, Moolenaar & Hartman, 2007). Additionally, Vassiliki et al. found that the integration of language concepts into physically active settings can meet children's movement needs as well as develop linguistic skills. Therefore, Vassiliki et al. examined the impact that language integration in physical education had on pre-school students' oral and written speech. The 76 four to six-year-old students were randomly divided into two groups. One group participated in a language program with movement in the gymnasium while the other group participated in the same language program without any movement integration. The researchers administered a pre- and post-test to measure student's written and oral speech. It was concluded that when intertwining movement and language arts, the intervention students (language arts and movement) significantly outperformed the control group (no movement).

Connor-Kuntz and Dummer (1996) had similar findings. More specifically, Connor-Kuntz and Dummer examined 72 four to six-year-old students from special education classes, general preschool classes, and Head Start classes. The students were assigned to either language-enriched physical education activities or regular physical education activities. All participants in both the control and experimental group received 24 to 30-minute lessons, three times a week for 8 consecutive weeks. Both the control and intervention physical education lessons activities included fundamental motor skills (e.g., running, galloping, kicking, skipping), body management skills (e.g., body shapes, dynamic balance), games (e.g., movement challenges), fitness (e.g., using animal movements and locomotor skills), and dance activities (e.g., creative movements, dancing to uneven and even beats). However, the intervention group incorporated language instruction and concepts tied to the lesson activities. For instance, for the fundamental motor skills, the lessons added language labels of colors, letters, and shapes during activities. More specifically, one language-enriched fundamental movement skill included having the students run around the gymnasium to try and capture as many colored "tails" from the other students. Each student had a colored tail tucked into their back waist and when all the tails had been taken, the number of colored tails was reviewed with the children before starting the same color language activity again. On the other hand, the control group received all the same lessons while deemphasizing language concepts. For example, the control group also completed the same tail lesson, however, all the tails were white without any emphasis on language labels and concepts. The researchers used composite raw score from the Peabody Developmental Motor Scales (Folio & Flewell, 1983) to assess student motor performance. They also used the

school readiness composite and subscale raw scores from the Bracken Basic Concept Scale (Bracken, 1984) to assess student language development. The authors concluded that physical education motor skill development does not need to be sacrificed when integrating language instruction since students improved their motor skill performance scores. Significantly improved language scores were also reported regardless of student placement (e.g., special education).

Mathematics integration into physical education and vice versa. Chen et al. (2011) also researched the integration of Common Core into physical education. More specifically, Chen et al. studied measurement units in mathematics and locomotor movements with 35 second-grade students. Furthermore, the teacher participants intertwined their lessons to create an interdisciplinary unit. While the physical education teacher integrated measurement units, subtraction/addition, and concepts of patterns into their movement concepts, the classroom teacher used locomotor movements to interpret, create, and analyze graphs. This study provided the physical education teacher with collaborative opportunities with classroom teachers and vice versa. Additionally, the teachers seamlessly integrated each other's curriculum which resulted in learning of both content areas without sacrificing their own content. A key finding for Chen et al. included the important of relevancy. Meaning, teachers should integrate across the curriculum with relevant content they are already teaching. This way, both teacher's specific content is still taught and enhanced when taught again in other settings. The diverse learning contexts and increased practice time can help struggling students learn content in new and exciting ways.

Similarly, Cecchini and Carriedo (2020) examined 46 first grade students' sedentary behavior, light and moderate to vigorous PA, and their learning of subtraction regarding physical education and mathematics integration. Furthermore, the control group (*n*= 23) participated in their usual math and physical education lessons while the intervention group (*n*= 23) participated in their regular math class and an integrated physical education unit where math concepts were taught in physical education for three weeks. Cecchini and Carriedo found that students who participated in the integrated physical education math lessons had higher light- and moderate-to-vigorous PA and decreased sedentary behavior than the control group. Additionally, the intervention group achieved better subtraction scores through the integration lesson. Not only did the integrated unit increase students' math knowledge, but PA levels as well.

Science integration into physical education and vice versa. Examining a different content area was Spintzyk et al. (2016) who researched science integration (i.e., biology) in physical education as well as physical education concepts in biology. The researchers studied the growth of knowledge in biology with 141 German sixth-grade students. The study included a control group who completed traditional physical education as well as an intervention group with biology integrated into physical education. The biology lesson gave explanations for the processes that occur during physical education while the physical education lesson included theoretical biology content using visualization regarding human biology (e.g., the cardiovascular system, nutrition, muscle build-up). All student participants (both the control and intervention groups) completed a pre- and post-test on biology and physical education content. The pre-test revealed no significant difference in either the control or intervention groups'

physical education and biology content knowledge. However, after the completion of the experiment, the intervention group resulted in significant growth in biology and physical education content knowledge.

Music integration into physical education. Barney and Prusak (2015) as well as Brewer et al. (2016) integrated a unique content area into physical education. Both these studies investigated the integration of music into physical education. Furthermore, these studies experimentally examined the impact of music integration on student's PA levels by using pedometers. Barney and Prusak's study resulted in increased elementary student PA levels which are positive findings. Similarly, Brewer et al. concluded with increased enjoyment and PA across all middle school grades (7^{th}, 8^{th}, and 9^{th}) with music integrated into two basketball activities. Whereas without the integration of music, students had significantly lower enjoyment reports and fewer step counts across middle school grades. Barney and Prusak's and Brewer et al.'s studies display the potential benefits of movement content in physical education for both elementary and middle school students. With increased student enjoyment and PA levels, come many cognitive and health benefits (Morgan & Hansen, 2008; Warburton et al., 2006; WHO, 2011).

Similarly, McClain et al. (2014) also found increased student enjoyment of fitness with music in physical education. More specifically, 122 sixth-grade students participated in a 28-session, group design study in which four different instructional approaches were implemented, including (a) traditional calisthenics fitness with no active supervision, (b) fitness without active supervision, (c) fitness routines with active supervision, and (d) fitness with active supervision and the addition of music. All students wore a pedometer for each of the 28 sessions and recorded their enjoyment levels every day. Students

reported higher levels of enjoyment with both fitness routines with active teacher supervision and fitness routines with music. Students also had lower step counts during traditional calisthenics fitness compared to the fitness routines. Teachers can use various instructional practices to increase student enjoyment and physical activity during the fitness segment of physical education.

Technology integration into physical education. Shewmake et al. (2015) have realized the enjoyment that adolescent receive from exergaming and technology integration in physical education (Russel & Newton, 2008). Therefore, the researchers sought to investigate the impact of exergaming integration in physical education. According to Staiano and Calvert (2011), exergaming is described as: "Exergames interpret a player's bodily movements as inputs associated with specific meanings for game play, translating movement in three-dimensional space onto the two-dimensional screen" (p. 93).

Shewmake. Merrie, and Calleja (2015) examined the perceived exertion levels and enjoyments that 148 third and fourth grade students had toward the integration of exergaming in physical education. Each student participant completed two 10-item surveys. Moreover, the students completed one survey after a normal physical education class in the gymnasium (business as usual) and one survey after the integrated physical education class in the exergaming lab (intervention). The surveys consisted of 5-point Likert scales for both perceived exertion levels and enjoyment. The authors found that the student participants enjoyed the technology integration significantly more than the normal physical education class (<.001). However, the students did not feel like they worked as hard in the exergaming lab as they did in the gymnasium. Therefore, it is

important to note that any integration should be seamless where students do not sacrifice their exertion levels due to the overpowering of another content area (e.g., technology).

Children's literature integration into physical education. Upon searching for studies where the focus was on the integration of children's literature into physical education, no studies were found. However, studies were located that focused on movement activities with language, and oral and written speech (e.g., Banister & Harlow, 1997; Connor-Kuntz & Dummer, 1996; Derri, Kourtessis, Goti-Douma, & Kyrgiridis, 2010; Iverson, 2010). Furthermore, although story telling can be used to teach language for oral and written speech, most studies do not use this method in physical education. Reading children's literature whether independently or out loud is essential since students practice and learn to retell story's key details, major events, characters, and settings from the stories (CCSS, 2010).

Additionally, through children's literature, students learn to synthesize across literature to compare characters and participate in group readings which helps to increase students reading ranges. Reading provides a foundation for writing, speaking, and listening. So why is there not more research on children's literature/reading in physical education? Maybe because reading is usually perceived as a sedentary activity which is opposite from physical education as an active behavior? The current study will show how children's literature can be integrated into physical education without sacrificing physical education content or PA time.

Children's literature has been emphasized for integration in many content areas (e.g., geography, math, science, e.g., Butzow, 1990; Casey et al., 2004; Hannibal et al. 2002; Holloway, 2015; Macken 2003). Additionally, physical education has been

suggested as a place to integrate children's literature (Kane, 1994; Vigil & Edwards, 2002). However, although there are many practical articles for ideas to integrate children's literature into physical education (e.g., Fingon, 2011; Marciano & Sanderson, 2018; Ostrosky et al., 2015; Purcell-Cone, 2000; Rovegno, 2003), and analyses of children's books regarding physical education (e.g., Botelho, 2014; Botelho, 2014; Weiller, 1989), only one study was found to attempt the integration of children's literature into physical education (Molenda & Bhavnagrii, 2009).

Molenda and Bhavnagrii (2009) studied children's literature with movement education in physical education to focus on enhancing the cooperation among Midwestern US bilingual Kindergarten students in one public school. Furthermore, one physical education teacher integrated movement education and children's literature for improved cooperation skills. The students completed a physical education activity with each book read in class (four books total: *Swimmy, Finders Keepers, Angelina and Alice,* and *The Little Red Hen*). For example, for the story, *Swimmy,* one child played the role of the big tuna (as portrayed in the book) and the rest of the students were little fish. The students each laid on a scooter with their belly and "swam" around the gym to collect 100's of little paper fish to place them in their designated area. While students were trying to place the paper fish in the correct spot, the big tuna was trying to tag them. Not only did this game teach on cooperation (one of the author's goals), but it provided PA directly aligned to the children's book. Therefore, the children were revisiting the book, only this time, through movement.

Unfortunately, Molenda and Bhavnagrii's study (2009) is not evidence-based as they stated in their article. Moreover, the authors claim that the activities (i.e., PA, group

Q&A) the children completed provide evidence of their understandings regarding cooperation in the stories. Although a physical education teacher and the students completed the integrated activities, this study did not entail any methods to collect tangible data on the student's or teacher's experiences, perspectives, or learning. Even though this was a good starting point, more is needed in future studies to collect evidence of practice, such as, learning outcomes (e.g., exit slips assessing knowledge) or interviews. Since there is no prior research to support this possible integration, research in the field of integrative physical education is warranted to gather evidence of integrative teaching methods.

Purpose

The current study examines ELA integration (i.e., children's literature) into physical education. Specifically, how integrating children's literature into the fitness portion of physical education impacts (a) first grade students' enjoyment levels, (b) first grade students' pre- and post-attitudes, (c) the PA levels of first-grade students, (d) the reading knowledge of first-grade students, and (e) the first-grade students' as well as the physical education teachers' and classroom teachers' perceptions of integrating children's literature into the fitness segment of physical education. In light of sociocultural elements, as previously discussed, these purposes will also bring insight into the impact that welding together reading and movement potentially have to offer in fostering students' strong connections and understanding as well as positive perceptions with reading various types of children's literature who may come from various economic backgrounds (Guthrie et al., 2007; Heath, 1982).

Research Hypotheses

The current study includes six research hypotheses:

1. The first-grade students will have higher Accelerated Reader Scores when participating in the intervention (physical education setting) for two weeks compared to their participation in the control setting (classroom setting) for two weeks across both schools A and B.
2. The first-grade students will have similar step counts between the physical education fitness portion with children's literature integration and the fitness portion without children's literature integration.
3. The first-grade students will have positive enjoyment levels (average score between a three and a four) when participating in physical education with integrated children's literature.
4. The first-grade students will have increased positive attitudes from pre-intervention to post-intervention.
5. The first-grade students will have more positive attitudes and perceptions when participating in physical education with integrated children's literature versus participating in physical education without integrated children's literature.
6. The classroom teachers and physical education teachers will have positive perceptions towards children's literature integration in physical education.

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CHAPTER 3: THAT'S THE THING ABOUT BOOKS…

THEY ALLOW YOU TO TRAVEL USING YOUR FEET!

EXAMINING CHILDREN'S LITERATURE INTEGRATION IN PHYSICAL EDUCATION

Higher cognitive functioning and test scores are present for those students who engage in higher levels of physical activity (PA) (Castelli et al., 2007; Centers for Disease Control and Prevention, 2010; Donnelly & Lambourne, 2011; Fedewa & Ahn, 2011; Sallis et al., 1999). Additionally, classroom teachers who integrate PA into their classrooms (i.e., Common Core lessons) and physical education teachers who integrate classroom content into physical education have not only more physically active and healthy students, but students who are more motivated and attentive to Common Core content areas (Hollett et al., 2016; Howard-Shaughnessy & Sluder, 2015; James & Bullock, 2015; Sluder & Howard-Shaughnessy, 2015). Pring (1973) defined integration as the simultaneous teaching of two or more subject areas to enhance students' learning and understanding. Furthermore, integration of Common Core subjects and physical education may be a catalyst for students acquiring cognitive, physical, and social and emotional developments, as well as the knowledge and attitudes needed for a lifetime of engaging in healthy behavior such as PA. Additionally, when physical education and classroom teachers collaborate, the school can cohesively value the various outcomes of multiple subjects and integrated learning. Some students may even learn content in increased meaningful ways as a consequence of learning styles (Scrabis-Fletcher, 2016). These tangible knowledge connections can yield deeper understandings, better retention, and greater engagement for all students involved (Chen et al., 2011). Although full

implementation and acceptance need not always be present for student benefits to occur, these learning benefits can improve when academic integration is embraced by stakeholders**.**

Educational Change Theory

For educational change to take place, multiple disciplines must be willing to accept unique and captivating ways of thinking (Fullan, 2006). Educational reform "is to help schools accomplish their goals more effectively by replacing some programs or practices with better ones" (Fullan, 1982, p. 2). Fullan's Change Theory (1982, 1991) provided the theoretical foundation for this project as it undergirds the basis for change regarding the integration of academic content. Successful change includes (a) initiation, (b) implementation, (c) continuation, and (d) outcome. The current study included the following components (a) initiating the integration by constructing content and training teachers to integrate children's literature into physical education lessons, (b) integrating children's literature into physical education over four consecutive weeks, and (c) assessment of student academic outcomes, student attitudes, their PA levels, and students' and participating teachers' perceptions. Teachers' dispositions also play an important role when change is considered. Furthermore, there are three temperaments of teachers regarding change: (a) program satisfaction, (b) desire to change, and (c) self-efficacy (Diez, 2007; Murrell et al., 2010). These three teacher dispositions are internal beliefs that greatly influence the likelihood that a teacher will make changes to their current teaching practices. Moreover, how important the change is to the teacher and the teacher's belief in their ability to execute the change are factors to whether the teacher will carry out the change (Vannatta & Fordham, 2004). Therefore, gaining deeper insight

into the teacher's perceptions and beliefs were important to support this change idea and are presented in Chapter 4.

Integration in Physical Education

The integration of English Language Arts (ELA) has been thoroughly studied in other subject areas (e.g., social studies, science, math), perhaps considering the natural link between these subjects in that they are primarily cognitive in focus (e.g., Swanson et al., 2015) (see Appendix A). Additionally, the impact of integrating other content into physical education has also been the subject of investigation (e.g., music, math, technology, science) (e.g., Barney & Prusak, 2015; Spintzyk et al., 2016) (see Appendix B). Furthermore, researchers have also studied the integration of ELA into physical education with promising results. Vassiliki et al. (2010) found that preschoolers in the intervention group who completed language and movement in physical education significantly outperformed the preschoolers in the control group in oral and written speech. Similarly, Connor-Kuntz and Dummer (1996) reported positive results from the integration of ELA into preschool physical education. Language scores resulted in statistically significant improvements across both groups regardless of the students' academic placements (i.e., typical preschool, special education, Head Start). Further, when integrating language, the time spent on motor skill development was not sacrificed.

Many researchers have focused on integrating written and oral speech in PA settings (e.g., Derri et al., 2010; Iverson, 2010). Although oral and written speech can be taught through storytelling, most researchers do not empirically study this practice in physical education. Whether reading children's literature out loud or independently, both are pertinent considering students are expected to learn, practice, and synthesize across

stories' major events, key points, settings, and characters (CCSS, 2010). Since reading, including reading children's literature, paves the way for writing, listening, and speaking, why is reading not a more common focus of integrated lessons in physical education? One reason may be the perceived sedentary nature of reading and the focus on the motor domain first and foremost in physical education.

Several practical ideas for the integration of children's literature into physical education have been offered (e.g., Fingon, 2011; Marciano & Sanderson, 2018; Ostrosky et al., 2015). However, no intervention studies examining the outcomes of integrating children's books in physical education have been conducted, despite physical education being pinpointed by some as one area in which to integrate children's literature (Kane, 1994; Vigil & Edwards, 2002).

The Importance of Content Integration in Education

Cutting across disciplinary silos to collaborate with teachers of seemingly different content areas can create change in a school community that values unique partnerships and improved student academic, emotional and social, and physical well-being (Fullan, 2006; Warburton et al., 2006). Additionally, with new ways of thinking, multiple conclusions and understandings can develop for students, potentially resulting in better student retention and engagement (Chen et al., 2011; Scrabis-Fletcher, 2016). Physical education has largely been underrepresented and marginalized in schools (Laureano et al., 2014). However, by integrating outside content into physical education class settings, not only are students learning physical education concepts and skills, but outside content (e.g., ELA) is directly supported which aligns with the high value placed on academic testing and achievement in schools (Wright, 2009). Furthermore, the

integration of outside content allows the physical education teacher to branch out from his/her own academic area and create connections with schoolteachers, leaders, and parents. Although reading has not traditionally been an area that has been integrated into physical education, according to James and Manson (2015), *all* teachers have an integral role in fostering writing, speaking, and listening, reading, and language across academic disciplines. Considering the importance of integration for all academic areas, the focus of this paper was to study the integration of two specific areas, ELA and physical education by integrating children's literature into the fitness section of physical education lessons targeting first grade students.

Purpose

The purpose of the current study was to investigate first-grade students' enjoyment levels, attitudes, step counts, and reading and listening comprehension when integrating children's literature into the fitness segment of physical education.

Research Hypotheses

The current study included four research hypotheses: (a) The first-grade students will have higher Accelerated Reader Scores when participating in the intervention (physical education setting) for two weeks compared to their participation in the control setting (classroom setting) for two weeks across both schools A and B; (b) The first-grade students will have similar step counts between the physical education fitness portion with children's literature integration and the fitness portion without children's literature integration; (c) The first-grade students will have positive enjoyment levels (average score between a three and a four) when participating in physical education with

integrated children's literature; and (d) The first-grade students will have increased positive attitudes from pre-intervention to post-intervention.

Methods

The participating private school (School A) in this study was an urban K-8 school located in the Southwestern U.S., with mostly students with White ethnic backgrounds (Table 1; Appendix C). The participating public school (School B) in this study included students in grades Kindergarten through fifth grade, located in the Southwestern, U.S., students had mostly Hispanic ethnic backgrounds (Table 2).

Table 2

School A and B School-Level Demographics

Demographic Variables	School A	School B
Male %	55	51
Female %	45	49
American Indian %	<1	5.8
Asian %	4	0.9
Black %	3	15.1
Hispanic %	5	66.5
Pacific Islander %	<1	1.1
Two or more races %	0	4.4
White %	86	6.2
Number of Students	346	549
Free-and-Reduced Lunch	0	87.8

Median Household Income	$50,455	$30,582

Participants and Recruitment

It is important to note that the context of School A and School B are vastly different (SES, median home income) and should be treated as such when interpreting participant information and results. Physical education teachers, first-grade teachers, and first-grade students at each school were asked to participate. Institutional Review Board (IRB) approval was obtained from the university and schools. The consent of the parents and teachers, as well as the assent of students was gained as well prior to the start of the study (see appendix D). This study was supported (financially and otherwise) by multiple platforms (i.e., Graduate and Professional Student Association at Arizona State University [ASU], Learning Literacies and Technologies Program at ASU, Renaissance Learning, and the Institute of Social Science Research). Additionally, support was offered by researchers to the teachers implementing the change through professional development, coaching, and researcher presence at each stage to answer any questions. The professional development was ongoing with teachers and included weekly check-ins regarding instructional content, debrief questions, each book's corresponding power point materials, and schedules (in case any of these items were misplaced).

Student participants. A convenience sample of students was recruited from the two schools in the Southwestern U.S., including one private school (n=13; class total: 17) and one public school (n=8; class total: 10) (Table 3). Please note that these participant sizes are very small due to the COVID-19 pandemic and some parents choosing to keep

their children home on zoom, an option provided to families in this school district during 2020. The study was replicated across these two different school settings.

Table 3

Demographics for the First Grade Students

Demographic Variables	Private School (A)	Public School (B)
Male %	76.9	37.5
Female %	23.1	62.5
Mean Age	6.3	6.1
Black %	7.7	37.5
Hispanic %	0.0	62.5
Mixed Race %	7.7	0
White %	84.6	0

Teacher participants. This study included two physical education teachers and two classroom teachers, one from the private school and one from the public school (Table 4).

Table 4

Private- and Public-School Teacher Participant Demographics

	Gender	Years Teaching	Ethnicity	Highest Level of Education
Private School Teacher Participant Demographics				
Physical education teacher	Female	18	White	Bachelor's Degree
Classroom teacher	Female	32	White	Master's Degree
Public School Teacher Participant Demographics				
Physical education teacher	Female	10	White	Master's Degree
Classroom teacher	Female	4	White	Master's Degree

Research Design

A four-week, crossover, replication study design was employed to determine intervention effects on the research participants (non-randomized individual participant assignments) (Campbell et al., 1966) (Table 5; Appendix E).

Table 5

Study Design

Week	Implementation Frequency	Condition	Setting
One	Twice	Control	Classroom
Two	Twice	Intervention	Physical education
Three	Twice	Control	Classroom
Four	Twice	Intervention	Physical education

At each school, one class participated as both the control (i.e., classroom activities) and intervention group (i.e., physical education activities) (Table 3). This design allowed for the comparison of scores at the student level (within students) to aggregate whether the students, on average, increased in multiple areas being studied (i.e., enjoyment scores, attitudes scores, step counts, and reading scores). Generalizability beyond the two schools for the current study is limited due to convenience recruiting.

Dependent Variables

Enjoyment exit slip. The enjoyment exit slip defined a students' rating between 1-4 with 1 reflecting a lack of any level of enjoyment, and 4 reflecting a high level of enjoyment. The exit slip was completed right after the intervention fitness segment and immediately captured the students' enjoyment of the literacy activity in physical education intervention. The McKenzie et al. instrument (1990), a validated measurement tool for 1st-grade students, originally included the following two questions: (a) "How did you like the fitness activities today?", and (b) "How did you like the sport activities

today?" However, for the purpose of this study, seeing that only the fitness question related, only this first question from the instrument was used. The researcher read and explained the question and option selections to aid the 1st-grade students' understanding. The students selected one of the four different "happy/sad faces," matched with the words "excellent", "good", "fair", and "poor", printed below the faces (see Appendix F).

Attitude survey. The McKenna and Kear (1990) Elementary Reading Attitude Survey (ERAS) is a validated measurement tool for 1st-grade students that was modified from reading only to address reading and physical education with repeated questions to obtain better understandings of the students' pre- and post-attitudes toward physical education and reading with and without ELA integration (Appendix G). Moreover, McKenna and Kear showed that the instrument produced reliable and valid scores in similarly aged students. For example, question number one on the ERAS states: "How do you feel when you read a book on a rainy Saturday?" For the current study, question number one was changed to: "How do you feel when you are in physical education?". For question number three on the ERAS it asks: "How do you feel about reading for fun at home?". While on the current study survey, question 3 asks: "How do you feel when you are reading?".

The researcher familiarized the students with the survey instrument by explaining what each Garfield character was expressing (very happy to very upset), and read each item aloud twice, in a slow manner (as directed by McKenna and Kear). The researcher also pointed out the differences in the Garfield responses (looking at Garfield's mouth expressions) to the students who then circled the Garfield figure that best described their attitude toward each statement. The 10 survey items used a 4-point Likert-like scale with

4 being the happiest: (a) happiest Garfield, (b) slightly smiling Garfield, (c) mildly upset Garfield, and (d) very upset Garfield.

Pilot study for attitude survey. A pilot study was conducted with the initial modified survey at a separate private school in Southwestern, US with seven Kindergarten students. This pilot study was conducted to validate the minor changes in the items made to assess attitudes toward reading and physical education. Moreover, the pilot study was completed to gauge Kindergarten students' understandings of the survey for successful use in the project. The main change made from the pilot study included the spacing of the questions. The questions were too crowded together which confused the Kindergarten students when responding on the survey. For example, many of the students read a question with the researcher and then circled a Garfield character on the incorrect response section (usually the subsequent response section or even the prior response section). It was confirmed that reading the questions aloud with the Kindergarten students and reminding the students of the appropriate Garfield response meanings bettered their understandings of what they were being asked and how they wanted to respond. The students exclaimed that they "loved the Garfield cat" and that they "watch him on TV" showing the connection to young students' interests and enjoyment.

Physical activity level. PA level is expressed in terms of step counts during the fitness segment of the lesson. In the current study, accelerometers were used to capture students' step counts. Accelerometers have been used successfully in the past with 1st-grade students, demonstrating that even young children can wear this objective device while providing accurate results (Gao et al., 2015). The New Lifestyles NL-1000 accelerometers were used, which have shown valid and reliable scores in children (Hart

et al., 2011). The researcher checked the accelerometers to ensure they were reset when the fitness segment began and helped the students put their accelerometers on appropriately (attached using an elastic belt on the waist; right mid-axillary line) at the start of class (Gao et al., 2015; Weaver et al., 2016). At the end of the fitness segment, the researcher retrieved the accelerometers, and immediately recorded the accelerometer information (see Appendix H). The students were trained to not touch their accelerometers and seek help if it seemed misplaced during the fitness activities.

The Accelerated Reader assessment. The AR Program was used to assess students' knowledge of the four books after their use each week. However, it is important to note that the AR assessments were used to gather text-level reading and listening comprehension of the student participants and are not necessarily generalizable to student academic achievement. The AR program, published by Renaissance Learning (2007), is an independent reading program that tests students on various curriculum-based non-fiction and fiction books for basic comprehension and knowledge (Smith et al., 2017; Vollands et al., 1999). The AR assessment, a 5-point Likert scale, was designed to support reading programs to increase student achievement and motivation, reading comprehension, and a lifelong love for reading (Renaissance Learning, 2007). The AR assessment has been validated with data comprised of millions of students (Renaissance Learning, 2012). The students usually take the computerized test alone, and when complete, the test provides an analysis and summarization of the student's reading comprehension results for the book read which aims to offer teachers tailored reading feedback to inform their practices (Advantage Learning Systems, 1998). However, for the current study,

paper copies of the corresponding book AR assessments were distributed and completed by the students in the classroom since neither of the participating schools had the computerized AR program at their schools.

Intervention

Firstly, it is imperative to note that due to the COVID-19 pandemic, School B was shut down half-way through data collection and the study was resumed four months later when the school re-opened (School A was not shut down). The intervention involved incorporating the corresponding books into physical education while the control condition involved incorporating the corresponding books into the classroom. More specifically, the intervention involved the integration of children's literature into the fitness portion (7-9 min. in length) of physical education lessons (Table 6; Appendix I). The physical education fitness segment was chosen since the books include appropriate fitness movements.

Table 6

Accelerated Reader Book Information (Weeks 2-5)

Week / Book / Author	ATOS Book Level (readability formula)	Interest Level	Accelerated Reader Points
Week 2 / From Head to Toe / Eric Carle Jr. (1997)	1.0	Lower Grades K-3	0.5
Week 3 / Baby Bear, Baby	2.1	Lower Grades	0.5

Bear, what do you see? / Bill Martin and Eric Carle Jr. (2007)		K-3	
Week 4 / In the Small, Small Pond / Denise Fleming (1998)	2	Lower Grades K-3	0.5
Week 5 / You are a Lion! And other Fun Yoga Poses / Taeeun Yoo (2012)	2	Lower Grades K-3	0.5

All the students wore accelerometers during intervention periods to assess potential differences between the two groups on step counts. Immediately after each fitness intervention was completed, the students reported their step counts to the researcher. They then completed a 1-item enjoyment exit slip with a second researcher, modified from McKenzie et al. (1994), to capture their immediate enjoyment levels. Furthermore, within the hour of the intervention class session and on the second day of each study week only, the students each completed a corresponding AR book assessment in their assigned classroom seats (see Table 5 for an overview of the procedures and timeline). Fidelity checklists were completed in each control and intervention setting every time by two researchers while Time on Task forms were completed for each day of the intervention only by the same two researchers. Week six of the project was used for

delivering the reading and physical education post-attitude surveys (i.e., McKenna & Kear, 1990) to all students in both groups.

Intervention professional development. The classroom and physical education teachers participated in a one-hour long training with the researcher and received a week-by-week schedule of the study (Appendix J).

Physical education teacher study role. The physical education teachers delivered the intervention using standardized procedures. The physical education teachers also reviewed the book content at the end of the intervention lessons. The physical education teachers displayed the books in the gymnasium, using a projector, for the students to read and physically follow along with during the intervention activity. As the teacher and students read together, the students interpreted the movements from the book and performed the movements themselves. When appropriate, the physical education teacher prompted and encouraged students to perform the activities noted in the children's book and offered feedback on locomotor movements and skills. Thus, instead of the physical education teacher solely teaching the students various movements, the physical education teacher used children's literature to show and express the movements the children were performing. For example, in Yoo's book, *You are a Lion!* (p. 19-22), it states: "Squat on your feet. Hands on the ground. Hop up! You are a…FROG. Ribbit your song. Leap in the pond. All the day long." From here, the students would perform the frog jumps around the gym (along with frog/ribbit sounds) until the physical education teacher moved on to the next page or activity. Other movements (moving like a fox, dog, deer, and mountain goat; yoga poses, stretching activities) across the two books were performed during the fitness segment of the lessons in the intervention group.

Classroom teacher study roles. The classroom teachers administered the control phase of the study with the pre-established book content for two weeks twice per week using standardized procedures. They reviewed the book content with the group at the conclusion of each lesson. The control group time included standardized combinations of the following: (a) teacher read-alouds (the teacher reads the book aloud to his/her students) on the first day of each control week with the following two reading strategies: (b) echo reading (the teacher reads a passage from the book and the students subsequently echo the passage aloud together for the teacher to listen), and (c) partner reading (the students take turns reading the book with their table partners) (Appendix K).

Data Collection

Various instruments were used to collect data, including: (a) fidelity checklists and Time on Task assessments, (b) student enjoyment level exit slips, (c) student attitude surveys, (d) accelerometers, and (e) the Accelerated Reader assessments.

Fidelity checklists and time on task. Graduate research assistants trained together and reached >90% agreement prior to data collection with the fidelity checklists and time on task forms. Fidelity checklists were completed each day in the classroom control condition (i.e., four days at each school) as well as each day for the intervention physical education condition (i.e., four days at each school). Time on task was also completed each intervention day. The researcher took live field notes and watched both the control and intervention video footage occurring in the classroom and gymnasia, respectively. Watching video footage allowed the researcher to re-watch the lessons taught which aided in gathering additional field notes and ensuring fidelity across all control and intervention settings.

The researchers completed fidelity checks at the half-way mark of each book each time. The fidelity checklist indicated whether the books were being used (Appendix L; e.g., projected on the screen during fitness; echo reading), and if debriefing occurred at the end of each lesson with the pre-established questions (Appendix M).

Student time on task. Time on task was defined as at least 90% of the students participated in the corresponding book movement activities (Knight, 2007). A "+" signified that the student was engaged in the activity projected on the screen (or prompted by the teacher). If a student was not engaged in the activity projected on the screen (or prompted by the teacher) a "-" would be marked in the appropriate box on the coding form. The researchers observed video footage to complete the time-on-task forms by looking at a student every five seconds (please see Appendix N for further detail). Every five seconds, for a total of 60 sweeps, the researchers looked at each student systematically in a row (going clockwise) until the form was completely filled out (i.e., each student had been assessed). The percent of students considered to on-task (i.e., "+) was then calculated by dividing the number of students who were on task by the number of total boxes/observations (i.e., 60).

Data Analysis

All data were analyzed using IBM SPSS Statistics 25.0 Software (IBM, Chicago, IL). Descriptive statistics were calculated for school and participant demographic information as well as all study variables (i.e., step counts, Accelerated Reader assessment scores, enjoyment level, and students' pre- and post-attitudes). Inter-observer reliability was used to assess fidelity of treatment and was calculated by dividing the total number of fidelity measures by the agreed-upon measures (in both intervention [7

measures] and control settings [6 measures]) as well as time on task for the intervention setting.

Descriptive statistics were used to assess student enjoyment levels, and a paired-samples *t*-test used to assess students' attitudes pre- to post- intervention. Additionally, mean step counts with standard deviations were calculated and compared across control and intervention conditions using a nonparametric *t*-test. The non-normality of step count data is adjusted for with a nonparametric t-test. Furthermore, a correlation analysis was used to assess the relation, if any, between step counts and student enjoyment during the intervention period. The non-normality of student step count data is not adjusted in the correlation analysis since we cannot gather medians from within-student data, however, correlation analyses regardless are robust in nature. Lastly, linear mixed effects modeling was used to assess within-participant differences and between control and treatment group differences in AR scores. The appropriate covariance structure was selected based primarily on Schwarz's Bayesian Criterion model (BIC) fit statistics, and secondarily by Akaike Information Criterion and -2 restricted log likelihood since models are more appealing with the lowest BIC scores (Hox, Moerbeek, & van de School, 2010). Due to the small sample size, Restricted Maximum Likelihood estimations were used for multi-level modeling (McNeish & Stapleton, 2016; Merten, 2015).

Intervention Fidelity

Fidelity checks. To ensure fidelity of treatment, two trained graduate research assistants completed standardized fidelity checklists independently. It was shown for School A for all but one day of the study (86% agreement), the researchers agreed 100% of the time that the intervention was administered according to the standardized checklist.

For School B, it was shown that for all days, the researchers agreed 100% of the time that the intervention was followed as instructed.

Time on task. When completing time-on-task forms for School A, the two researchers had a range of agreement for inter-observer agreement between 92% and 98% (M=96.4, *SD*=3.2) which indicates high levels of agreement. Regarding time-on-task for school A, there was a range of 92% to 97% (M=95.2, *SD*=2.4), and an overall average of 95.3% for time-on-task behaviors. For School B, the two researchers had a range of inter-observer agreement between 95% and 100% (M=97.5, *SD*=3.8). Also, for School B, the range of time-on-task percentages was 92% to 100% and the overall average of time-on-task behaviors 97.5%.

Results

Descriptive findings for each instrument and school as well as the results pertaining to the established hypotheses across both Schools A and B are presented. Moreover, a paired samples *t*-test, nonparametric *t*-test, correlation analysis, and linear mixed effects model were completed and are shared across both schools. Internal consistency reliability was not run in the current samples due to the small sample sizes.

Enjoyment Exit Slips

With a score of 1 being poor and 4 being excellent, on average across the four intervention days, all students thought of the intervention as an excellent or good experience for both School A (*M*=3.35) and School B (*M*=3.84) (Table 7).

Table 7

Average Enjoyment Levels for Intervention Weeks Three and Five

Week/Day	Average Enjoyment Rating	*SD*	Average Enjoyment Rating	*SD*
School A			School B	
Week 3/Day 1	3.31	.63	4.00	.00
Week 3/Day 2	3.25	.62	3.80	.45
Week 5/Day 1	3.50	1.00	4.00	.00
Week 5/Day2	3.33	.78	3.60	.90

The enjoyment levels for both schools were combined due to relatively similar scores and small sample sizes. Furthermore, using descriptive statistics, it was shown that the overall enjoyment levels across the intervention for both schools averaged 3.49 which shows that students maintained good to excellent enjoyment levels during the intervention phases (Table 8).

Table 8

Average Enjoyment Levels Combined for Physical Education Intervention Weeks Three and Five

Week/Day	Average Enjoyment Rating	*SD*
Week 3/Day 1	3.50	.62
Week 3/Day 2	3.40	.62

Week 5/Day 1	3.65	.86
Week 5/Day2	3.41	.80

Student Attitudes

For School A, the students' average pre-attitude survey score was 2.92 (*SD*=.42) and their average post-attitude score 3.11 (*SD*=.55). For School B, the students had an average pre-attitude survey score of 3.26 (*SD*=.41) and a post-attitude score averaging to 3.82 (*SD*= .26).

The average rating for students' attitudes pre-intervention when combining both schools was 3.13 (*SD*= .42) (between slightly smiling [3] to happiest Garfield [4]). The average post-intervention attitude score for all students across schools A and B was 3.33 (*SD*= .58). These means show that students' attitudes increased .20 points from pre- to post-intervention. However, this difference was not statistically significant although the difference was close to significance considering the small sample sizes ($t(18) = 1.98$, $p=.06$).

Step Counts

There were two days of recorded step counts per week for each student participant for the 7-9-minute physical education fitness period (weeks 3 and 5 of the study) (Figure 1; Appendix O & P). The average number of steps across all four intervention days for School A was 812.90 (*SD*=372.23) and 546.60 (*SD*=213.51) for School B.

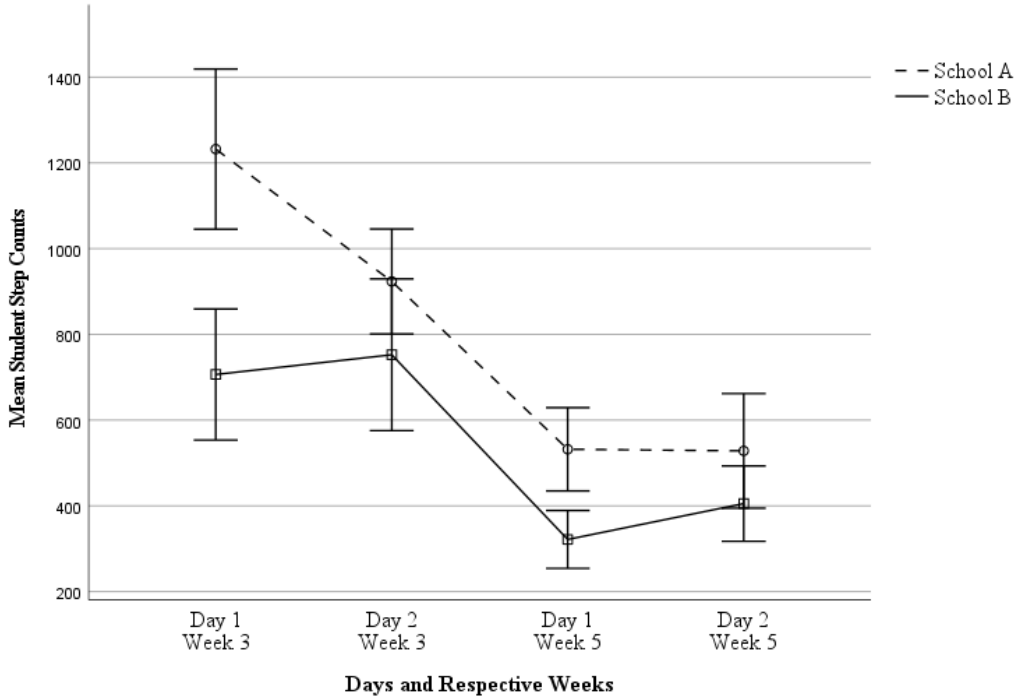


Figure 1. Means and Standard Deviations of Student Mean Step Counts by Week and Day

A non-parametric t-test performed with a Wilcoxon hypothesis test was executed to determine whether the student participants maintained similar step counts between intervention physical education fitness and regular (business-as-usual) physical education fitness (Table 9). These results for School A are within-school comparisons and showed significantly higher step counts for Week 3/Day 1, and for Week 5/Day 2. School B's within-school comparisons also showed significantly higher intervention step counts for Week 3/Day 2, and significantly higher regular fitness step counts for Week 3/Day 1, and Week 5/Day 1.

Table 9

Step Counts Means by Week/Day and Intervention/Control Lessons

School	Week/Day	Intervention Fitness/ Regular Fitness	Step Count Means	Step Count Medians	Wilcoxon value	*p*-value
School	Week 3/Day1	Intervention	1232.38	1099	-2.845	.004*
A		Regular	824.09	815		
	Week 3/Day	Intervention	923.67	957	-1.726	.084
	2	Regular	1023.25	1005		
	Week 5/Day	Intervention	532.17	538	-.235	.814
	1	Regular	544.50	558		
	Week 5/Day	Intervention	528.42	541	-2.629	.009*
	2	Regular	703.17	736		
School	Week 3/Day1	Intervention	706.60	1099	-2.023	.043*
B		Regular	1187.80	815		
	Week 3/Day	Intervention	752.60	957	-2.023	.043*
	2	Regular	284.20	1005		
	Week 5/Day	Intervention	321.80	538	-2.023	.043*
	1	Regular	480.80	558		
	Week 5/Day	Intervention	405.40	541	-1.753	.080
	2	Regular	564.00	736		

Step counts and enjoyment. Using correlation analysis across Schools A and B, higher step counts were shown to be significantly correlated with higher enjoyment levels for all intervention days except two (Table 10). Week 5/Day 2 was not statistically

significant; however, it is not much different from what was observed on day one for both weeks three and five. Further investigation into Week 3/Day 2, using field notes, are provided in the discussion section of this paper considering it is appreciably different from the other weeks and their respective day(s).

Table 10

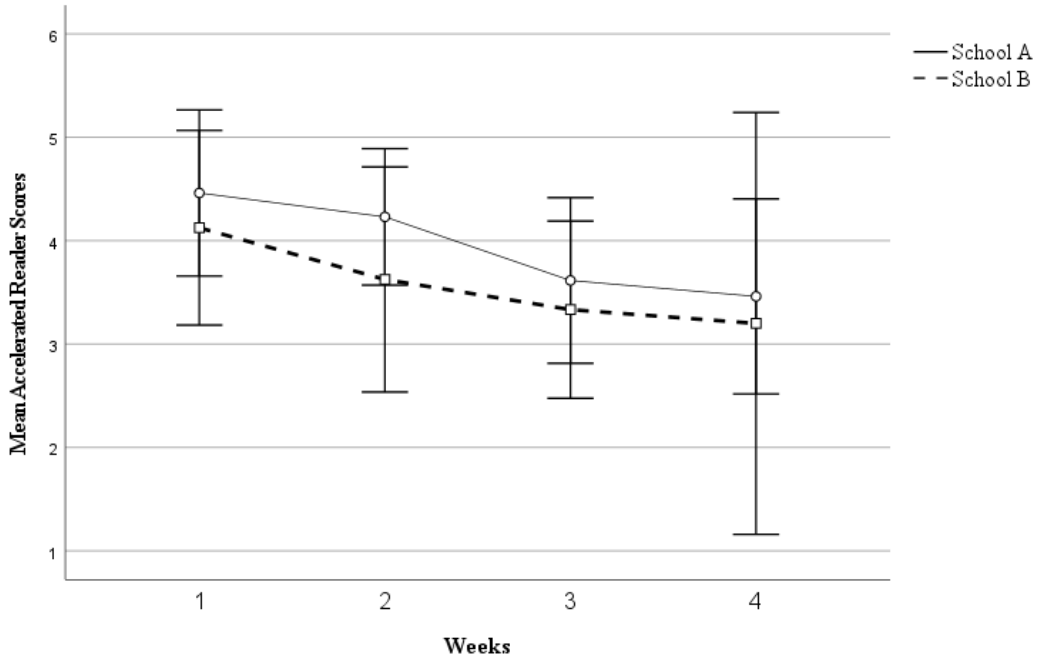
Step Count and Enjoyment Correlations

Week/Day	Pearson Correlation	Sig. (*p*-value; .05)
Week 3/Day 1	.50**	.03
Week 3/Day 2	-.14	.60
Week 5/Day 1	.61**	.01
Week 5/Day 2	.40	.11

Pilot study for accelerometers and enjoyment exit slips. A second pilot study was conducted with a new cohort of 11 Kindergarten students at a separate private school in Southwestern U.S., Arizona to assess the appropriateness of accelerometer usage and the enjoyment exit slips for successful use in the project (see Appendix Q). The participants included both males and females (53% and 47%, respectively) with most students' ethnicities being white (88%), 5% black, 5% Asian, and 2% other. The pilot study aided in understanding of how best to use accelerometers with this young population which was helpful in managing the students during the project.

Accelerated Reader Assessments

The average AR assessment scores for school A across weeks 2-5 was 3.94 (*SD*=1.36) out of a possible 5 points (students' scores ranged from 0-5). School B's average AR score was 3.63 (*SD*=1.21) (students' scores ranged from 1-5) (Figure 2; Appendix O).



Footnote: Error bars are at 95% CI

Figure 2. Means and Standard Deviations of Student Accelerated Reader Scores by Week

To assess whether students' scores differed from intervention to control setting, a linear mixed effect model was used, combining both School A and School B data since mixed modeling assesses within-student effects rather than across schools (since the two schools are different; e.g., SES). By combining the students, it increases the degrees of freedom since the sample size is small. Accelerated Reader scores were still analyzed on a per-student basis since the intervention is the same across both schools. The results show how students performed around their own AR scores throughout the 4-week-period.

The linear mixed effect model was fit with the following covariance structures for the current study: (a) Autoregressive Heterogenous, (b) Autoregressive Homogeneous, (c) Toeplitz Heterogenous, and (d) unstructured (Table 11). Autoregressive Homogeneous [AR(1)] was shown to be the best fit with a BIC score of 253.06 and frees the most degrees of freedom. AR(1) assumes equal variances in Accelerated Reader scores across each week of the study, in much the same way as independent *t*-tests assume equal variances. Further, the assumption of a common correlation among adjacent weeks was confirmed. When running the linear mixed effect model with school as a covariate, the AR scores between school A and B were not significantly different from one another (p=.63) nor was the treatment effect significantly different (p=.68). When inserting gender as the covariate, gender did not significantly influence AR scores (p=.77) and the treatment effect also showed no significant difference (p=.69)

Table 11

Linear Mixed Effect Model: Autoregressive Heterogenous/Homogeneous, Toeplitz, and Unstructured Models

	Autoregressive Heterogenous (ARH[1])	Autoregressive Homogeneous (AR[1])	Toeplitz	Unstructured
-2 Restricted Log Likelihood	242.90	244.37	239.97	233.34

Akaike's Information Criterion	252.90	248.37	247.97	253.34
Schwarz's Bayesian Criterion	264.62	253.06	257.35	276.78

Across the four AR books, accounting for treatment (physical education) and (classroom) control group settings, it was found that although the students' scores improved in the intervention (increased .09 points) compared to the control setting, the results were not statistically significant (Table 12).

Overall, according to the accelerated reader score findings, there was no significant difference in whether the students were exposed to children's literature in the classroom or in physical education. This shows that although students' scores were not significantly higher in the intervention, and therefore did not fulfill the first hypothesis, students can still learn book content just as well in both settings.

Table 12

Fixed Effects Regression Model for Schools A and B

Parameter	Estimate	Std. Error	df	*t*	Sig.
Intercept	3.83	.24	28.07	15.94	.00
Treatment	.07	.17	43.03	.42	.70

Discussion

To my knowledge, until this study, no intervention/empirical-based studies existed to support these professional claims. Only one study was found that integrated children's literature into physical education, however it did not contain an intervention, so no evidence was presented (Molenda & Bhavnagrii, 2009). The current study built on Molenda and Bhavnagrii's study by also conducting children's literature integration in physical education but expanded the project to include an intervention which provided evidence-based outcomes. Throughout the literature, several professional (non-intervention) articles regarding children's literature integration in physical education have claimed it as being beneficial for multiple student outcomes (e.g., body and spatial awareness, cooperation, & ELA success) (Hollett et al., 2016; James & Bullock, 2015; Marciano & Sanderson, 2018; Molenda & Bhavnagrii, 2009; Ostrosky et al., 2015; Sluder & Howard-Shaughnessy, 2015). It is critically important to investigate this work empirically to determine if it is of value to various student outcomes and change in school.

Fullan (2006) discussed educational reform as benefitting student outcomes (e.g., physical, and social and emotional well-being as well as academic performance) through the occurrence of stakeholder partnership formations (e.g., physical education and classroom teachers). This reform can potentially create positive change in the school community. Multiple areas or subjects must accept new methods for educational transformation in order to flourish. Fullan defined educational reform as replacing some methods in schools with better practices to benefit and meet various school outcomes and goals (Fullan, 1982). The current study attempted to integrate children's literature into

physical education to enhance student learning while maintaining student enjoyment, attitudes, and physical activity. Since, according to Fullan (2007), successful change encompasses initiation, implementation, continuation, and outcomes, the current study completed each of these four stages to create positive school change. Since budget and support were present, the study was initiated, and therefore, able to be *implemented* to assess student outcomes. Student *outcomes* were measured whether considered positive or negative, and therefore, the study continued until *completion*. The teachers all agreed to be part of the study to its completion and the change created overall positive student outcome results that produced multiple implications for future research and teacher practices.

Students' Enjoyment Levels were High

Overall (across schools A & B), the students thought the intervention was good (second highest possible score) to excellent (highest possible score). The students seemed to enjoy the change of adding a new element they had never used in physical education before (i.e., books). Additionally, the students particularly enjoyed acting like animals (movements and sounds) around the physical education space. For example, when students read about a lion, they were prompted to act like a lion. From there, the students moved around on hands and feet and made large "roar" sounds. When asked to stop their movement, the students reset and placed their eyes on the next page awaiting the next movement to be read. Somewhat related to the students' enjoyment levels were their attitudes regarding the integration of children's literature into their physical education class setting. Many theoretical claims have been made to support ELA integration in physical education (Howard-Shaughnessy and Sluder, 2015; Molenda & Bhavnagrii,

2009). Although not empirical, the authors found increased student enjoyment when integrating language strategies into physical education.

Students' Attitudes remained Positive

The lack of statistical significance on the student attitude variable is reflective of students' consistency in their feelings toward the activities regardless of whether the lesson include reading integration. Moreover, since the students already felt optimistic about the idea of the intervention, their overall score between slightly smiling Garfield and happiest Garfield was a positive finding. Thus, students can complete this type of integration while maintaining positive attitude.

No Clear Evidence of Similar Student Step Counts

Also important was student activity during the integration process. For example, if physical education teachers integrate children's literature into their lesson, but the students are not accumulating as much PA, then this is defeating one of physical education's goals of promoting student physical activity (Beighle et al., 2004). For the current study, the students' step counts varied dependent upon intervention or control day. Some days, the students performed significantly higher step counts during the intervention, and some during the control setting. The inconsistency can be due to student management issues and the negative impacts of management issues or the COVID-19 pandemic. More specifically, at times, some students were off task with the reading activity and completed other movements that may have led to an increase in step counts. This management issue was identified by the teacher only on some days which can explain inconsistency of step count results. Another area that may have impacted students' step counts was COVID-19. During School B's work, it was apparent that

students were tired and confused with many changes to their daily routines (e.g., wearing masks, staying 6 feet apart, school moving online midway through the study). The students still enjoyed the intervention although they seemed tired and/or unmotivated to move and act freely during physical education. Also, the reason for high step counts on this day but low enjoyment levels could be due to management issues and the tag games played when the students should have been completing the book activities. These issues were discussed with the teacher, who was receptive to feedback, for changes for future intervention days. Although students' enjoyment did, in fact, correlate to their number of steps on most intervention days for the project, there is no previous literature to undergird this finding. Moreover, there has been no previous investigation linking students' enjoyment with their step counts in the context children's literature being integrated during physical education. Overall, there was no evidence of similar student step counts since the values were rather mixed, thus not meeting the third hypothesis of this study.

Content Presented in the Classroom versus in Physical Education produced similar Results

When assessing students' AR scores with the control week (reading in the classroom) compared to the intervention week (reading in physical education), a possible reason for why scores seemed to decrease over time (control weeks 3 and 4) could be due to slightly more difficult book material, differences in school contexts, and negative impacts of COVID -19 (i.e., School B students went online for four months before returning to school and completing the last half of the study; learning loss). It was thought that students would perform better on their AR assessments in the intervention weeks since there is evidence to support active learning (Castelli et al., 2007; Centers for

Disease Control and Prevention [CDC], 2010; McMullen et al., 2014). This claim was supported by slightly higher scores for the intervention weeks for both Schools A and B. However, the results were not statistically significant. Thus, these students were able to absorb book content just as well in physical education as they did in the classroom. Therefore, physical education lessons can be a good setting to supplement classroom content (extra practice time) while creating possible avenues for teacher partnerships and keeping physical education-specific objectives (e.g., accumulating PA) a priority. Both James and Bullock (2015) and Scrabis-Fletcher (2016) stated that integrated reading strategies in physical education can increase student ELA achievement. Additionally, Vassiliki et al. (2010) conducted an intervention study with preschool students where they completed written and oral speech integration in physical education. Although a different ELA topic than the current project's (i.e., children's literature), the authors found significantly higher learning for the physical education intervention group due to the benefits of movement and motor learning (e.g., Visscher et al., 2007). Connor-Kuntz and Dummer (1996) also reported positive findings for preschoolers' language scores when integrating language into physical education motor activities. Thus, it is possible to seamlessly integrate books into physical education for shared student success. However, even though other researchers have investigated ELA integrated into physical education, this appears to be the first study to integrate children's literature and assess student outcomes. More studies are needed to explore this potentially useful area of study. Extending this work, school personnel may want to consider creating an integrated culture where teachers from all disciplines work in collaboration with one another for student success.

Strengths and limitations. While this study had strengths, such as, the study design employed to have students act as their own controls, and the various instruments used to gain multiple variable information, this study had several limitations. One limitation included the book difficulty level. The students' AR scores reflect large differences between week 1 and weeks 3 and 4, with weeks 3 and 4 showing the lowest scores. It is important to note that the first week's book (*From Head to Toe*), although developmentally appropriate, is slightly easier than the other three books used. This easier level is consistent and reflected in the AR assessment results for week 1 in both Schools A and B. Also, some limitations included lower trends in Accelerated Reader and step count scores over time in all conditions that seemed to be due to issues larger than the project (the COVID-19 pandemic; retention of students after School B re-opened). Furthermore, there was non-normality of step count data for various reasons (e.g., students playing tag, getting hurt and stopping activity) which is accounted for with the non-parametric t-test used. The non-normality of step count data is only a limitation when using a correlation analysis since medians are not present for within-student data and there was no convenient alternative. However, correlation analysis is robust regardless when dealing with the non-normality of data. Additionally, with a limited amount of data desired for a study such as this, generalizable conclusions cannot be drawn. Nonetheless, this study provides invaluable information regarding the integration of another content matter into physical education, a study like this with a larger sample size would increase the generalizability of findings. Lastly, it is important to note that the significance and/or non-significance of the data could be due to the sample size being small (not necessarily an intervention effect). With these limitations and no known prior

intervention research concerning children's literature integration in physical education, there are multiple implications for researchers and school stakeholders (i.e., teachers and administrators).

Implications. A follow-up study to the current study with a larger sample size would behoove the integrative physical education area since it is difficult to draw generalizable conclusions from studies with small sample sizes. Since all students and teachers are different at each school, this type of intervention and its potential impact will vary based on the students' interest levels, reading abilities, and the teacher's ability to effectively deliver the book material along with maintaining their classroom management procedures and their focus on promoting skill learning and physical activity in general. Additionally, future studies should not only research student knowledge outcomes in reading, but also in physical education where critical learning of the psychomotor domain takes place. An example of learning in the psychomotor domain are the demonstrated animal movements throughout this study. However, this study and much of the physical education literature falls short of demonstrating how participation in physical education results in learning in the psychomotor domain.

Lastly, an interdisciplinary approach would be beneficial to not only have the physical education teacher supplement what is occurring in the classroom, but to have the classroom teacher also supplement what is occurring in physical education. Integration was used in the current study and involved the unison of two or more subject areas by one teacher. However, interdisciplinary measures take this integrative approach one step further and involves multiple instructors collaborating to create an effective lesson unit where they use each other's content to enhance their own. For example, by using PA in

the classroom, students can not only accumulate PA but benefit from the support that PA brings to classroom subject areas (i.e., math).

Conclusion

Overall, integrating children's literature into physical education was positive with the overall direction of the results favorable. This type of integrative practice shows a glimmer of compatibility with other researchers' professional claims. And by using enjoyment, attitude, step count, and book measures/assessments, researchers can further study and formulate reliable results based on actual student outcomes rather than solely providing strategies of such approaches without evidentiary support. The evidence from this study can inform researchers and teachers alike when carefully considering academic integration in physical education.

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CHAPTER 4: BECAUSE READING PEOPLE IS JUST AS IMPORTANT THAN READING BOOKS: STAKEHOLDERS' PERCEPTIONS OF CHILDREN'S LITERATURE INTEGRATION IN PHYSICAL EDUCATION

Physical activity (PA) has repeatedly been shown to improve cognitive functioning and test scores for physically active students (Castelli et al., 2007; Centers for Disease Control and Prevention [CDC], 2010; Fedewa & Ahn, 2011; Sallis et al., 1999; Scrabis-Fletcher, 2016). There is also a great deal of support in the literature for physical education and PA integration in the classroom (i.e., Common Core lessons) as well as Common Core integration in physical education which may lead to students who are more engaged and motivated in Common Core subject areas and physical education (Hollett et al., 2016; James & Bullock, 2015; McMullen et al., 2014; Sluder & Howard-Shaughnessy, 2015).

Pring (1973) defined integration as the combination of two or more subject areas that bring learning and understandings into fruition. This can potentially benefit all stakeholders in several ways including: (a) concurrent student learning across subject matter areas, (b) aid student retention, understandings, and ambition (Chen et al., 2011), (c) physical education and classroom teacher partnerships building cohesive school cultures, and (d) more physical education program credibility as other teachers and school personnel learn more about what happens in the physical education classroom and the important outcomes of quality programs. However, academic integration is not always seamless without creative thinking and planning. Therefore, this change becomes successful only when all team members agree on content, work together, and support the change effort.

Fullan's Educational Change Theory

For educational change to germinate, vast disciplines must acknowledge and accept innovational modes of thinking (Fullan, 2006). Educational reform "is to help schools accomplish their goals more effectively by replacing some programs or practices with better ones" (Fullan, 1982, p. 2). Fullan's Change Theory (1982, 1991) undergirds the current study since it is comprised of change in academic content. Successful change includes four key steps: (a) initiation, (b) execution, (c) continuation, and (d) institutionalization. This study investigated the change process through the lens of first-grade students as well as their classroom and physical education teachers with integrating English language arts (ELA), specifically children's literature, into the fitness segment of physical education.

Academic Integration

Traditionally, there has been little integration of physical education and reading. However, *all* teachers have an imperative part in furthering students' speaking and listening, language, writing, and reading across academic disciplines (James & Manson, 2015). It is critical to offer strategies for academic integration. If these strategies are not empirically examined to assess the efficacy, there is no evidence base to support the use of ELA integration into physical education. Moreover, it is also important to determine the perceptions of the various stakeholders involved in this integration of subjects.

Perceptions of ELA Integration and other Subject Areas

Reading is a necessary skill set to navigate the world. However, not all students positively associate with reading traditional plain text (Partin & Gillespie-Hendricks, 2002). According to Partin and Gillespie-Hendricks, students with positive attitudes

toward reading have had some or all of the following environmental variables in place while growing up: (a) having a library card, (b) being read to, (c) being read to by multiple people on a regular basis (d) books gifted to them, (e) parents with higher education, (f) personal book collections, (g) parents who have book collections, (h) parents who show interest in their reading, and (i) having parent and children discussions about books. But what about the students who did not receive these experiences or only a few of them growing up? Heath (1982) sheds light on this question by pointing out that students with various economic backgrounds and cultures may have strengths and abilities in various other practices and less exposure to children's literature.

One opportunity for improving students' perceptions of ELA is the integration of it into other content areas (including physical education) for concurrent learning opportunities. Through integration, students can see and learn literacy in new and unique ways (rather than solely in the ELA classroom). However, although there has been research on ELA integration into other content areas (e.g., Swanson et al., 2015; Vassiliki et al., 2010; Wright & Gotwals, 2017; Yilmaz & Topal, 2014), the qualitative exploration (targeting stakeholders' perceptions) of this research is limited. Heafner (2018) explored stakeholder perceptions of ELA integration into social studies and found that teachers did not have a strong understanding of how to implement ELA and that there was a great deal of variability in implementation and outcomes. Moreover, obstacles to integration that have been reported included having unclear expectations and the lack of time to plan for a subject area they were not experienced in. Although most teachers gave an effort to integrate, the previously discussed barriers were overpowering for teachers. Heafner's

study makes an important point that integration cannot be forced, teacher buy-in, training, and support are critical to change efforts (Turnbull, 2002).

Perceptions of ELA Integration in Physical Education

Although many authors have written about the positive outcomes of integrating ELA into physical education through professional publications, it is based mostly on their own personal beliefs and/or experiences (i.e., practical articles offering ideas and strategies for integration; Buell & Whittaker, 2001; Flanagan & Shoffner, 2013; Hollett et al., 2016; Howard-Shaughnessy & Sluder, 2015; James & Bullock, 2015; Molenda & Bhavnagrii, 2009; Scrabis-Fletcher, 2016; Sluder & Howard-Shaughnessy, 2015). Results from Chapter 3 of this dissertation provide initial evidence of the ELA intervention's efficacy and include the following: students had high levels of enjoyment and the students' attitudes remained optimistic throughout the intervention, the students maintained similar step counts in the intervention compared to their regular physical education fitness time, and the students learned the reading content equally well across the physical education and classroom conditions. However, no research examining stakeholders' perceptions of ELA integration in physical education could be located.

Connor-Kuntz and Dummer (1996) found improved language scores and physical education motor skills. More specifically, the intervention and control group participants received physical education lessons (24 to 30 minutes) for eight weeks including motor skill activities (e.g., skipping, running), games (e.g., movement challenges), body management skills (e.g., body shapes), dance activities (e.g., creative movement), and fitness (e.g., using animal movements). The intervention group received the same physical education lessons; however, language was integrated into the activities.

Moreover, the intervention group received language concepts and labels specific to the physical education lesson. For example, language concepts included direction and positioning and language labels included shapes, colors, and letters. One specific language-enriched physical education lesson was an introductory activity where the students ran around the gym trying to grab as many "tails" as they could from their classmates. Each student had a colored “tail” hanging from the back of their waist. When the teacher stopped the students, the colors and/or numbers of the retrieved tails were reviewed before repeating the activity. Motor skill performance was assessed using the Peabody Developmental Motor Scales (Folio & Flewell, 1983) and language development was assessed using the Bracken Basic Concept Scale (Bracken, 1984). The students (across control and intervention group) showed statistically significant improvements in motor skill performance scores and language scores regardless of placement (e.g., special education). Unfortunately, however, Connor-Kuntz and Dummer’s study and others did not explore stakeholders’ perceptions which results in authors presenting opinions rather than participant voices during lived experiences from the integration process (Table 13).

Table 13

Published Ideas/Opinions Surrounding the Perceptions of ELA Integration into Physical Education

Publication	ELA Content Topic in PE	Authors’ Perceptions and Suggestions
Molenda & Bhavnagrii (2009)	Children’s literature to foster cooperation and physical activity among students while reinforcing book content.	Children’s literature integration can successfully promote cooperation among the students.

Hollett et al. (2016)	Reading strategies provided to learn Body and Spatial Awareness.	ELA integration can be effortless and present information in exciting ways.
Howard-Shaughnessy & Sluder (2015)	Written, spoken, and visual language strategies provided for integration with rollerblading in physical education.	Integration can increase student enjoyment and take minimal effort while providing a well-range of activities and learnings in multiple content areas.
James & Bullock (2015)	ELA integration strategies for physical education teachers that include writing, reading, and discourse among students.	Since teachers of technical subject areas are encouraged to integrate literacy into their own content area for increased ELA success (CCSSI 2010b), physical education, as a technical subject, should find ways to integrate literacy.
Scrabis-Fletcher (2016)	ELA integration strategies for physical education teachers, including grammar, adjectives, nouns, pronouns, verbs, prepositions, and vocabulary.	Common Core integration in physical education can improve student achievement, give physical education teachers clout when advocating for more physical education time, and give physical education programs more credibility in schools.
Sluder & Howard-Shaughnessy (2015)	Reading and writing integration ideas into learning pacing and racing in running and completing running courses.	Integration teaches the whole child, allowing students to learn of outside content while learning physical education content. Relationships with other teachers from other subject areas can be established with physical education teachers by

	integrating each other's content for the shared success of students.

Rationale and Purpose

Given the dearth of information on stakeholders' perceptions of ELA and physical education integration, the purposes of the current study were to learn about first-grade students' perceptions as well as classroom and physical education teachers' perceptions (field notes, observations, interviews) when integrating children's literature into the fitness segment of physical education. Concerning sociocultural aspects, these purposes can also bring awareness of the impact that fusing physical activity and reading may have on fostering more positive perceptions of reading diverse children's literature with students from various economic backgrounds (Guthrie et al., 2007; Heath, 1982).

Research Hypotheses

The current study included two research hypotheses:

1. The first-grade students will have positive perceptions when participating in physical education with integrated children's literature.
2. The classroom teachers and physical education teachers will have positive perceptions towards children's literature integration in physical education.

Methods

Two schools, by convenience sampling, were asked to participate in this study (the selection of schools was affected by the COVID-19 pandemic). First, the 6-week study was completed at School A and subsequently replicated at School B for six weeks.

Private School (School A). School A, an urban K-8 private school, located in Southwestern, US consists of 346 students primarily of white ethnic backgrounds (Table

14) and a median household income of $50,455 (Great!Schools.org). According to Stanford 10 results (2018), this private school's students are performing at 50% in math which evenly meets the national average, and 66.3% in reading which is above the national average.

Public school (school B). The participating Southwestern, US public school (K-5) consists of 549 students of diverse ethnic backgrounds, and a median household income of $30,582 (Great!Schools.org; Table 15).

Participants and Recruitment

First-grade students, first-grade teachers, and physical education teachers at both schools were asked to participate in this study. All participants, for the purpose of confidentiality, were given pseudonyms. Participants included in person students in the classes. This study took place during 2020, and this school district gave students and parents the choice of students participating in person or online (private school: 7 out of 10 total students; public: 13 out of 17 students total).

Table 14

Private School Student Overall Demographics

Gender %		Ethnicity %				Free/ Reduced Lunch %
Male	Female	Black	Hispanic	Mixed Race	White	
76.9	23.1	7.7	0.0	7.7	84.6	0

Table 15

Public School Student Overall Demographics

Gender %		Ethnicity %				Free/ Reduced Lunch %
Male	Female	Black	Hispanic	Mixed Race	White	

37.5	62.5	37.5	62.5	0	0	87.8

Student participants. Those students willing to participate (n=13; age range 6-7) were recruited from a 1st-grade class of 18 students from one private school (Table 4). Additionally, eight first-grade students (age range 6-7) from a class of 12 were selected since they were also willing to participate (Table 16). The class size for both groups was so low due to the COVID-19 pandemic. Moreover, both schools had reduced capacity and some students were online for school rather than in-person.

Table 16

Private School Student Participant Individual-Level Demographics

Students	Age	Gender	Ethnicity
Private School			
Clark	6	Male	White
Robin	6	Female	White
Larry	7	Male	White
Markay	6	Female	White
Glenn	7	Male	White
Clive	6	Male	White
Jason	6	Male	White
William	7	Male	White
Eva	6	Female	White
Max	6	Male	Mixed Race
Brent	6	Male	White
Ayden	7	Male	White
Blake	6	Male	Black
Public School			
Tracy	6	Female	Hispanic
Kent	6	Male	Black
Heather	6	Male	Black
Hank	6	Male	Hispanic
Lily	6	Female	Hispanic
Alec	6	Female	Black
Charity	6	Female	Hispanic

Katie	7	Female	Hispanic

Teacher participants. Two physical education teachers and two classroom teachers participated; one from each school, respectively (Table 17).

Table 17

Public and Private School Classroom Teacher Participant Demographics

Teachers	Gender	Ethnicity	Years Teaching	Highest Level of Education
Public School Teachers				
Lisa	F	White	10	Masters
Brooke	F	White	4	Masters
Private School Teachers				
Mary	F	White	18	Masters
Ariel	F	White	32	Bachelors

The physical education teachers and classroom teachers were interviewed separately for 20-60 minutes pre-, mid-, and post-intervention. The student participants were also interviewed in focus group settings (student groups of 3-5) for 20-30 minutes mid- and post-intervention, resulting in a total of 24 interviews across six weeks about stakeholders' perceptions of children's literature in the classroom and children's literature integration in physical education. The interviews with all participants were audio recorded and transcribed verbatim. Hand-written field notes were also taken and became part of the corpus of data. It is critical to note that because of COVID-19, School B was shut down at the half-way point of data collection and resumed four months later after the school's re-opening.

Research Design

A cross-over, replication study design was used to investigate intervention effects on the research participants who had non-randomized individual assignments (Campbell et al., 1966). More specifically, all students participated in both the control setting on a bi-weekly basis and intervention setting, also on a bi-weekly basis. For example, during the first week, all participants completed the control condition in the classroom. During the subsequent week, the students then participated in the intervention (during physical education). Two more weeks followed in the same manner with the students going back to the classroom for the third week and the fourth week ending with all students in the intervention (Appendix E). This study contained two phases, including (a) conducting the study at the private school for six weeks, and (b) subsequently replicating the study at the public school for six weeks (Table 2 and Table 3). Since the study was replicated across both school settings, and depending on the results, a small measure of generalizability could be established. However, it is important to note that generalizability is limited when recruiting a convenience sample. First-grade physical education took place twice per week at both School A and School B for four out of the 6 weeks of the study.

Intervention

The intervention of the current study included the integration of children's literature into the 7-9-minute fitness section of physical education twice per week for two weeks (see appendix I). The fitness portion of the physical education lesson was selected since the books include movements associated with fitness activities. A different book was used in physical education each intervention week to integrate literature into the

fitness segment of physical education, including the following: (a) week 2: *Baby Bear, Baby Bear, What Do You See?* (Martin & Carle, 2007); and (b) week 5: *You are a Lion!* (Yoo, 2012).

Physical education teacher's role during intervention. The physical education teacher integrated the books into the fitness segment of physical education by projecting the books on a screen for the student group to read along and interpret/perform the movements in a standardized fashion (Appendix I). For instance, Yoo's book, *You are a Lion!* (p. 11-13), states: "Stand with feet flat. Bend and touch ground. Bottom up! You are a… DOG. Stretch in the sun. Bark at your friend, Ready for fun." While reading these pages along with the physical education teacher, the students performed the book instructions and then performed the dog animal movement around the gym (e.g., on hands and feet, barking around the gym at their friends) until the physical education teacher moved onto the next page or activity. Just a few of the additional movements that the fitness books portrayed include further animal movements (e.g., lion, fox, skunk, owl, dog), stretching (e.g., downward facing dog, mountain pose, cat stretch pose), among other movements, such as, slithering and jumping across the physical education fitness segments. Once the students completed their fitness segment of the lesson with the books, the teacher asked them the debrief questions (Appendix M). The students answered using movement. Once all questions were answered, the students were then called up one at a time to hand their accelerometer over to the researcher who recorded their PA information, and then the student, immediately after turning in their accelerometer, went to the second researcher to record their enjoyment level for the intervention fitness

segment that had just occurred. The student was then directed to sit back down until this process was complete for all student participants.

Classroom Condition

Classroom teacher role during the condition. The classroom teacher taught the assigned book (week 2: *From Head to Toe*, Carle, 1997; week 4: *In the Small, Small Pond*, Fleming, 1998) for each of the two control weeks twice per week in a standardized fashion using combinations of the following three reading techniques: (a) teacher read-alouds (read on the first day of both week; the book is read aloud by the teacher to their students), (b) echo reading (read on the second day of the first week; the teacher reads a passage and the students echo the same passage aloud), and (c) partner reading (read on the second day of the second week; the students are paired with their table partner and read from one book together) (Appendix K). The classroom teachers also used the same debriefing questions for two minutes at the conclusion of each book lesson (see Appendix M).

Professional development. Initial individual trainings with teacher participants took place with each teacher and the lead researcher for about an hour. The teachers received all study materials, information, and training during the first week. Ongoing PD was provided to the teachers weekly and included checking in with the teachers regarding the content to be taught. Part of the teacher development included standardized use of the four books used in the classrooms and gymnasia. Supplemental materials were provided to the teachers weekly, including schedules, debriefing questions for them to reflect on, and power point materials for each book used. Classroom sets of the four books were purchased with an internal grant and delivered to the classroom teachers.

Data Collection

Student and Teacher Interviews. Focus group interviews were used to capture the perceptions and experiences of the first-grade students, and to obtain unique group interaction (discourse) data regarding whether students' perceptions favored the intervention, whether their perceptions remained the same, or changed across the intervention to compare perceptions to ELA in the classroom (control setting) (Krueger, 1988). Physical education and classroom teachers were interviewed to gain an understanding of their perceptions over time regarding the intervention and the integration teaching methods as well as to learn how to better support teachers in developing cross-disciplinary programs and partnerships.

Student Interviews. Focus group interviews have been primarily conducted with adults. However, with careful planning, focus groups can be valuable for obtaining interview data on youngsters ages 6-10 (Gibson, 2007; Kennedy et al., 2001). Furthermore, Kennedy et al. suggested both sexes be involved in the focus group interviews since it can create more lively discussions. Therefore, each focus group interview included both sexes. The focus group interviews involved all student participants, lasted for 20-30 minutes, and were audio recorded and transcribed verbatim. Students were asked a variety of questions (see Appendix R), such as (a) "What do you like about physical education?"; (b) "What do you like about reading?"; (c) "What do/would you like about reading in physical education?" Once the one selected participant responded, the interviewer allowed the other interviewees to share their thoughts in response to the question at hand. The interviewer then asked the next question

to a different student in the focus group, following with the rest of the group also sharing their thoughts.

Physical education teacher interviews. The interviews with the physical education teachers lasted 30-60 minutes and were audio recorded and transcribed verbatim. The physical education teachers were asked questions (see appendix S), such as (a) "What did you think about the integration of ELA into physical education?"; (b) "Do you think that the integration of outside content (e.g., ELA) into physical education is sustainable? Why or why not?"; (c) "What other content would you be interested in integrating into your physical education program? Why?"; (d) "Do you think that integration in physical education can be initiated, implemented, and sustained to provide favorable whole-school outcomes (Fullan, 1982, 1991)? Why or why not?"; and (e) "What did not work in the integration process? If anything, how did you work around those issues?"

Classroom teacher interviews. The classroom teachers were asked questions (see appendix T), such as (a) "What do you think physical education's goal is in schools?"; (b) "Do you think that ELA integrated into physical education would be/was a good idea, why or why not?"; (c) "Based on your experiences, what advice would you give physical education teachers for ELA integration?"; and (d) "How do you think that academic integration in physical education can create positive school reform (Fullan, 1982)?".

Field notes. Live field notes were recorded during both the control and intervention periods. Field notes based on video footage were also recorded to gain deeper insights into specific intervention/control days across the 12 weeks of the project.

This allowed the researcher to write more in-depth field notes about the intervention and control settings.

Consistency measures for the Intervention

Fidelity checklist. At the half-way point of each book presentation, fidelity assessments were completed by the two researchers. The fidelity checklist indicated whether the books were being used as standardized (e.g., projected on the screen during fitness), and whether debriefing occurred at the end of each lesson with the pre-established questions (Appendices L & M, respectively).

Data Analysis

All data were analyzed thematically, and undergirded by Fullan's Change Theory (1991, 2001, 2006, 2007) to identify common themes across all participants for observations and interview data which was inductively analyzed and open coded to break down, examine, compare, conceptualize, and categorize the data (Glaser & Strauss, 1967; LeCompte & Schensul, 1999; Miles & Huberman, 1994; Strauss & Corbin, 1990). From all data sources (i.e., teacher interviews, student interviews, and observations with field notes), prevalent codes related to the students' and teachers' perceptions of children's literature integration in physical education were used for further analysis aimed at the identification of themes. Constant comparison was completed by comparing each finding with existing findings as it appeared across data analysis and was used to identify key characteristics mentioned most frequently throughout each theme. Data analysis began after all interviews and observations took place.

More specifically, two graduate research assistants independently went through all student and teacher interview transcripts and wrote down various codes (e.g., 30

codes) to collapse and create themes. One researcher concluded with six themes and the other concluded with seven. Both researchers had similar-meaning themes, just worded differently. From here, the researchers renamed the themes and removed two from the student themes and three from the teacher themes. After the themes had been agreed on, the lead researcher found relationships between the themes and Fullan's Change Theory (2001, 2006, 2007). Therefore, the meanings behind the themes remained the same, but the theme names were changed to align more closely with this theory which resulted in a final total of five themes (three student themes and two teacher themes).

Data credibility and trustworthiness. To ensure data credibility and trustworthiness, data triangulation occurred across all sources including multiple teacher interviews, student interviews, and observations with field notes. Peer review of data and a search for negative cases were part of the analyses. A second researcher, experienced in qualitative research, independently reviewed all data sources and helped aid thematic finding credibility of all interview transcripts which minimized bias since he was not present at the interviews. The teacher participants were invited to look over the established themes (i.e., member checking) which allowed for transcript dependability for future analysis to show that the established themes accurately reflected the participant's statements (Lincoln & Guba, 1985). No changes were requested to be made by the teacher participants based on their readings of the transcripts.

Results and Discussion

This is the first known empirical study of stakeholders' perceptions of integrating children's literature into physical education. The results of this study include themes surrounding the two research hypotheses and are described by participant type (i.e.,

students and teachers). Regarding the first research hypothesis, students in this study had positive perceptions when participating in an ELA-integrated physical education fitness segment. Each theme is tied to Fullan's Change Theory (2001, 2006, 2007) and will be discussed below in more detail supported by participant quotes and field notes. Furthermore, each participant brought unique backgrounds, perspectives, and suggestions for future integration research and teacher practices.

Student Perceptions

Three themes emerged from the interview and field note data and are discussed in further detail below. The student themes included, (a) motivation and engagement, (b) student learning, and (c) home environment.

Motivation and engagement. First, the students were almost unanimously motivated and engaged during the integration of children's literature into physical education. According to Fullan (2007), although motivation is achieved only long-term, pairing motivation with another condition, such as engagement can foster a space for developing student motivation. Students expressed that they felt engaged and became more motivated to complete integrated physical education over time (despite larger confounding variables, i.e., COVID-19 pandemic).

At first, the students seemed confused seeing a book displayed in physical education. For example, at the start of the integration, "The students seemed confused but excited" (field notes). Also, Tracy (School B) said, "What!? We don't ever read in PE" and her teacher, Lisa during her mid-interview responded, "the students were kind of excited, but also confused, like what, this doesn't make any sense." However, over time, the students became more aware and engaged in the integrated fitness segment. The

students particularly loved the animal movements and making the animal sounds. Every time the teacher changed the book page, the students' eyes were glued to the next set of words and animal pictures to read and perform. One first-grade girl, Charity (School B), stated, "My favorite thing is like reading books and when I look at the pictures I want to read more and more." Similarly, Robin (School A), said, "I liked it when we move around in P.E. after like the animals" and Markay (School A) supporting this comment saying, "I like it because we got to move around instead of just sitting down and do fun stuff", and Blake (School A) said "I like the movements [with books]… they're fun". Lastly, Kent (School B) expressed, "Oh! I like the um animal movements and fun adventures and it's like very fun we get to do very fun stuff and good stuff."

Although not all students initially liked the idea of the book integration, by the end of the study all but one student wanted to keep children's literature integration in physical education under certain circumstances (e.g., time). For example, in Jason's mid-interview (School A) he stated, "I don't like the [book] movements… "I want regular PE [without reading] because I love to play games" and William (School A) supported this saying, "You don't get to run around as much when you get more reading… you get less fun". Additionally, Brent (School A) supported his dislike for integrated physical education saying, "Because it takes up more of your [PE] time". However, later in the study during each boys' post-interviews, Willaim replied based on a comment, stating that books in PE "kind of" changed his mind (he ended up "kind of" liking it) and he would like to continue integrating children's literature into physical education under certain time circumstances (integration not occurring as often). Jason agreed with William saying, "It [books in PE] changed my mind." When questioned why it changed Jason's mind he

agreed that it just grew on him and he also would like to continue integrating books into PE under the same time circumstances. Brent also changed his thoughts on integrating books when asked if he liked the idea of integration in PE by stating, “I like the pictures… and I just really like the books”.

Lastly, another student, Katie (School B) during an interview at the mid-point of the study was asked regarding her thoughts about integrated physical education and she stated, “I hate reading… Oh, I don’t like to do some movements…terrible… like they’re difficult to do. They’re hard and like tiring.” However, at her post-interview at the end of the study, Katie said, “[exercise and reading] “makes you stronger” and “um, that [reading books in physical education] was actually fun.”

These transformational student responses/findings showcase some student experiences as starting negative and gradually moving to be more positive as well as reflect normed perceptions that reading is a sedentary, fixed, and transactional occurrence. This relates to Howard-Shaughnessy and Sluder’s study (2015) although students’ experiences were not progressively researched throughout Howard-Shaughnessy and Sluder’s unit (students were asked for their perceptions at the conclusion of the unit only). The authors looked at roller blading in fourth-grade physical education infused with math, reading and writing. When the students were asked to write a summary of one-page regarding their experiences in the integrated roller blading unit, it was concluded that the students enjoyed the integrated unit primarily because it was new, and they enjoyed the amount of roller blading they were provided.

Most students wanted to continue the integration in physical education. However, most students addressed the time variable, in that they would only want it occasionally

with new books each time (keeping the integration new and exciting). Furthermore, when students were asked if they would rather have children's literature every class, sometimes, or never again, almost all students unanimously said "yes" to sometimes (e.g., once a month) with a new book presented each time. As Glenn said, "you've already learned what you've already learned", agreeing that seeing the same book twice was quite repetitive for him. Additionally, Clark said that he wanted to continue the integration of children's literature into physical education, however, only "sometimes with new books". Lily and Jason both corroborating Clark's thoughts with Lily stating that she wants "P.E. with reading only sometimes" and Jason expressing, "I would like the books. I would like the books sometimes but not like every single PE."

The teachers' thoughts differed from the students' suggestions regarding their exposure to the books more than once. While the teachers looked more at student learning and progression with the books used, hence seeing the benefit of using the books more than once, the students wanted different books each time to keep the activities exciting. Although the students wanted to use a different book in physical education each time, the teachers instead saw the benefit of the students seeing the books twice with Ariel stating, "They [the students] kind of got the idea of what we would do. So, when I read the second book, they were already anticipating they were going to get there, act it out... It was good to see that they learned from doing it twice too, even though they'd like a different book." Supporting the students' recommendation, Hollett et al. (2016) discussed how integrating new and exciting activities, such as, various reading strategies in physical education can promote the learning of body and spatial awareness. As seen in student responses, simply integrating ELA into physical education is not sufficient to

create cross-curricular excitement. Researchers and physical education teachers alike may need to consider modifying the activity regularly when integrating ELA into physical education, and if books are used, practitioners should also consider selecting various books regularly to keep the integration new and exciting. This discrepancy between what the students and teachers perceive was a case of quality teachers having a clear focus on student learning, whereas, especially among students within physical education, the emphasis is about having fun.

Learning as perceived by students. The second theme was the students' perceptions of learning during the integration of children's literature into physical education. According to Fullan (2001, 2007), student learning contains the following broad phases: (a) initiation, (b), implementation, (c) continuation, and (d) institutionalization. These phases were completed by investigating student and teacher perceptions surrounding initiating and implementing change within the school classes, continuing the change across the four-week intervention period, and the potential institutionalization (becoming a common practice) of integrated methods. Specifically, student perceptions are critical when it comes to their learning since students need to embrace and understand the change to produce successful learning outcomes.

Although Fullan's change phases (2001, 2007) may be fluid throughout the study due to many confounding variables and a diverse group of students, positive change can certainly impact students' perceptions of learning. For example, a first-grade boy, Alec (School B), supported student learning in integrated physical education saying, "Like exercising is gonna help your brain, like us be stronger to read… When you move to books, it helps with your homework, and it helps you reading better and your writing

better." Alec's response is similar to Howard-Shaughnessy and Sluder's opinions (2015) regarding an integrated unit, who stated that language strategies integrated into physical education promotes the learning of multiple content areas simultaneously because this method is reaching the whole child.

Several students stated that they liked the book pictures and that the words and pictures up on the screen helped them better understand the movements they were to perform. Students stopped the previous activity and read along with the teacher and looked at the pictures to perform their next movements. The researcher field noted, "The students seem to love the colorful pictures and are reading along with the teacher." Clark expressed his ability to learn in an integrated physical education unit saying, "There's different words that I don't know, and I can learn them and I can use them in sentences" because of books being used in physical education. Additionally, students stated that they could get better at reading by reading in physical education because it is fun. According to classroom field notes, it was recorded that "the students really wanted to move. Some of the students had a difficult time sitting still. Students love the pictures, but I think the students could engage more in this book by moving w/it [the book]." For instance, Markay said she could get better at reading in physical education because "it's kind of fun… because when it's fun, then it makes it more fun and the fun makes it so fun." Student responses from this study and Scrabis-Fletcher (2016) both reflect the potential benefits of ELA integration into physical education. For instance, some of the students (e.g., Clark, Markay) expressed they were learning new words from the integrated unit and that movement while reading helped them understand the book content better, thus, helping them learn the physical movements in physical education. Although Scrabis-

Fletcher concluded that the integration of ELA (e.g., grammar, vocabulary) into physical education can enhance students' academic achievement based on linkages found between physical activity and cognitive functioning (e.g., Fedewa & Ahn, 2011; Sallis et al., 1999), she did not empirically research this area. Instead, Scrabis-Fletcher provided integration strategies for ELA in physical education. For example, an idea shared was the integration of sentence construction when striking a ball to hit certain zones. Once the student hit a certain zone three times, they randomly choose a word from the matching-zone basket and later constructed complete sentences with their word(s).

Not all students (particularly boys), however, started out thinking they could learn book content in physical education through an integrated unit. Most responded "no" when asked if they could learn more about reading and/or physical education by reading in physical education. However, this later changed for students. For example, Hank (School B) stated, in response to whether it was possible to get better at reading or physical education by reading in physical education, "Yea. Cause you can learn from it. And you can learn about animal movements." And Blake also changed his mind later, by stating: "Yeah, because I can learn more."

Home environment. Within similar school populations, there are still unique children and curricula used. Student performance, experience, and success can differ based on family backgrounds and across school subjects. Not one school, curriculum, or student is the same based on cultural influences and upbringings. For example, a student's background of reading at home with their parent(s)/guardian(s) can influence their perception of reading compared to a student who does not read at home. A final student theme is the culture of both the school and students' home experiences related to

reading. Fullan (2007) reports that students' family backgrounds are a large factor for student success in school. Fullan described how it is possible that a child is not able to pass a government-required reading test and is therefore deemed inadequate, but the same student can create anything and everything beautiful in art class. Fullan's words are aligned with a part of this study in that all students learn differently. This study reflects a novel or unique approach and resulted in positive student and teacher responses. Yet, each participant was still different and responded differently because of their own unique backgrounds and experiences. These backgrounds can also impact students' abilities to cooperate and interact with others. According to field notes (when students completed partner reading together in the classroom, "A sense of community is developed w/reading. The students are helping one another and collaborating." Potentially showing that reading together in class created a new reading community that may make some students' perceptions of reading more positive from those perceptions at home.

Discussing students' perspectives regarding positive experiences brings Partin and Gillespie-Hendricks' (2002) environmental variables back into play (e.g., being read to, being read to by multiple people, on a regular basis, books gifted to them) since students experiencing even some of these variables can have a more positive perception towards reading. This supports the positive perceptions of those students who mentioned examples of their family valuing reading (e.g., being read to, being told reading is important). Heath (1982) also discussed that students who come from various sociocultural contexts (e.g., life at home, upbringing) and the differences in how they interpret written language. Heath, specifically states,

> **…**the culture children learn as they grow up is, in fact, 'ways of taking' meaning from the environment around them. The means of making sense from books and relating their contents to knowledge about the real world… (p. 49).

For instance, some students said that their family members read to them because their family told them that reading is important. Charity stated, "like my brother reads some books for me. And I want reading books for night. He does it sometimes." Charity also said in response to the question, "Would you like to continue reading and moving with the books in P.E.?", "Yes, because I liked books a lot and me and my brother do", revealing a family background that enjoys and values reading. Heather (School B) also showed family values playing a role saying, "I'm learning how to read. I have already this big book. I'm still reading with my sister. We all have the same book." With family background playing a role, it is important to note that both these girls wanted to continue the integration process in physical education and valued the extra practice time in reading they received in physical education. Conversely, another student did not have positive experiences with books in her household. For instance, Katie said that her mom tries to force her to read books, saying "I don't like about reading… Um, my momma, she told me to read a book" and that she does not like being told to read books. This is the same student who went on to say, "I hate reading" before changing her mind after the integration intervention process occurred.

Considering all students experience meaning making from text, it was not surprising that home environment was a theme among students based on their responses to the integration. By allowing children to read the text with the teacher and then translate it into what *they* think the animal moves and sounds like, these children were able to

freely express, through movement, their understandings of the stories. Therefore, although students came from multiple backgrounds, overall, students had positive experiences as they were able to learn words and also act out their own meaning-making. Furthermore, given the home environments and the unique students within the classrooms, even though the students, overall, had positive perceptions of the integration, they gave suggestions to improve future integration if it were to continue in their physical education classes (e.g., use harder books, use a new book each time, keep selecting books with a lot of pictures).

Glenn (School A) represents a negative case for the theme of home environment. He initially stated that he did not think the children's book integration in physical education could help his reading because he said that "you can read at home. And get better at home… we don't read as much [in physical education]", expressing that reading was done in his household and that it was enough to supply him with adequate reading knowledge. It is also important to note that this student likes reading so much that he stated he buys books to read at home: "I, I have to have birthday money or, or for my, recess money [to buy books]". Glenn also said that he likes "when there's more pages in the book" and "I don't really like to read along with the book. I just like to read by myself." Additionally, Glenn expressed, "I read a lot of books, hard books… and I get most of the words right." Glenn also shared that he did not think that reading was important in physical education because "it's not really important… Because you don't have to do it, but you can do it, if you want to." However, later in his post-interview, Glenn did respond "yes" to continuing children's literature integration in physical education as long as there were harder books (i.e., more pages). Now discussing themes

as they relate to the teachers' experiences, literature is also presented that is tied to teacher responses and provides valuable implications for future research and teaching practices if integration is attempted.

Teacher Perceptions

The teachers' interview responses resulted in two common themes across the study data, including (a) motivation and resources, and (b) stay the course.

Motivation and resources. When the four teachers were asked about integrating children's literature into physical education, they all agreed, and at each time point (pre, mid, post), that integration was a good idea for multiple reasons and contributed to their motivation to continue. For instance, when asked (during pre-interviews) if teachers thought it would be a good idea to integrate children's literature into physical education, Lisa (School B classroom teacher) said the following:

> I think it could be a great idea, I think it could be a great idea, because I think that children, when they have whole-brain teaching and whole-brain learning, where they're using all parts of their body, really can allow them to activate prior knowledge and retain information better. I'm a huge proponent of whole-brain teaching. And I incorporate movement in my classroom all the time. So, I think doing it in PE could help them with anything they're trying to learn, really.

Additionally, Ariel (School A), a physical education teacher, responded,

> I think it sounds like a good idea. I've done math integration before, and I think it helps kids to have a better chance at really understanding and grasping the concepts. And I would think reading these books, acting it out is a great opportunity for a lot of students that might not gather it just sitting at a desk.

During the teacher's mid-interviews the classroom and physical education teachers all still agreed that integrating children's literature into physical education was and can be fruitful. Mary (School A classroom teacher) stated, "I think kids like movement in any form. So when you can integrate some other core subject into that, that is a benefit to everyone." This was also the sentiment of Brooke (school B physical educator) who said "I think the kids absolutely loved moving along with the book. It was exciting for them and they were still, from my point of view, I think they were still getting a lot of movement".

Lastly, during the post-interviews, although some of the teachers' perceptions slightly changed towards thinking not all books are conducive to use in physical education, they each still thought integration in physical education would be a great idea to continue. For instance, Brooke stated,

> I think it's great to have cross-curricular to begin with. I think PE should be in the classrooms, and I think we should have other classes mixed in PE. I think with the movement that they are able to retain knowledge, and I truly believe that it'll help them in the long run. I might do it a little different [each group of students gets an iPad with the book displayed to promote more movement and student collaboration] if I were to add it into my classroom, but I think it would still be beneficial long-term.

And Lisa shared, "I would say it's been great for the students. They are more engaged in ELA and in PE. Overall, I think the integration has been really smooth and seems effective."

It is important to note that none of the physical education teacher participants shared that by integrating Common Core subject areas into their lessons, it may give them more clout on campus to advocate for increased physical education time (Scrabis-Fletcher, 2016). Although this would be reasonable for physical education teachers to mention, given physical education's often spoken-of marginalized nature, this was not mentioned.

Regarding motivation combined with resources, the teachers shared various resources, such as space, credentials and training, time, and materials (e.g., technology) that would help or hinder the integration process. For instance, Mary responded with the following statement, aligned with Chen et al.'s point of relevancy (2011), when asked about possible limiting factors to motivation for integrating in physical education: "I think the time probably would be the first factor, both time in the preparation and taking the time out of what she's [the physical education teacher] currently doing so, if it blended enough with what she was doing." When asked further about integration related to motivation and resources, Mary stated,

> I think if it was one of the books like I read last week, where there are movements with it, maybe PE would be the better place for it, for them to learn it, because they are able to move around more there. Especially in the situation where we are with COVID and the kids are having to stay in a self-contained area, it's a little harder to do that", however, "I think maybe in the classroom more with those [books without much movement]. Primarily because you can pull in other resources. Sometimes I will bring in pictures and put them up on the screen to help them understand something more. An example is, a little boy, yesterday, did

> not know what roller skating was. In the gymnasium, you couldn't really show him that, but in the classroom I could pull it right up and show him.

Lisa, supporting Mary's thoughts as well as Heafner's point (2018) regarding training and change efforts, expressed,

> I would say, the content of it I think they could learn better in PE, because it is integrating that total physical response and the movement. In terms of more articulating the words, I think that would be better done with a certified teacher, that you know reading is my specialty. So, comprehension, I would say PE for sure, and then more like decoding the words and things would be more classroom…. I think if they [the physical educators] have clear expectations and a vision of what they want to see happen, I do think it could happen. It would just take extra time and training.

Brooke (physical educator) also supported the classroom teachers' views in terms of space and setting by saying,

> I just noticed when we had the kids in the PE setting, they wanted to move. They wanted to be moving because it was PE. That's what they're expecting when they come to PE is to move. So to get their attention to actually follow along with me to the book, I don't know if they were necessarily following along as well as they would have in the classroom because that's just what the classroom setting is set up for.

Related field notes taken during Brooke's class read, "The teacher is having to try more today to get the students focused. This could be due to the lack of music or the novelty effect wearing off." The last teacher, Ariel (physical education teacher) stated, "I think

they'll remember it [the book content] better in PE, actually. Because they probably remember moving around and acting it out."

Teachers unanimously spoke of the importance of integrating across content areas. For instance, the teachers in the current study said that they were motivated to integrate content the integration of outside content into physical education can help students retain information better, it can also help with student understanding of various concepts, and provide a whole-brain approach. This aligns with the proposals and suggestions by Howard-Shaughnessy and Sluder (2015), James and Bullock (2015), and Scrabis-Fletcher (2016). Although some of the teachers' thoughts changed regarding where reading is best learned when integrated (classroom or physical education), each teacher from beginning to end thought that integrating children's literature into physical education was positive and resulted in invaluable benefits.

Stay the course. Fullan (2006) discussed change as a process that takes time. Changemakers need to stay diligent yet flexible, all the while keeping a good pace so that change does not become overwhelming. These aspects, as discussed by Fullan, will aid in the change process. The teachers in this study also expressed their perceptions of change (integrating children's literature into physical education).

For instance, when the second school shut down halfway through the study on account of COVID-19 and teachers were asked to continue the study four months later upon the reopening of the school, the researcher noted that "without hesitation, both the classroom teacher and physical education teacher agreed to keep pushing forward with the integration". Additionally, the two physical educators shared advice for change making. Ariel said, "I would say try it and you might like it" and Brooke mentioned, "I

know it'll be a little bit of more upfront work to start with. But I think as a teacher starts to do something a little bit more, it'll just get easier." Discussing another aspect of Fullan's Change Theory regarding staying the course with change, Lisa shared, "I would say probably just advice would be take it slow, start with like one movement that you can do every day and get the kids learning it and use it so consistently that it just becomes habit. And then the same movements can be used cross-curricular here in the classroom and in the PE." Lastly, Mary shared her perception of the intervention as it relates to change and pushing forward,

> Do it whenever you can. Ask each other for help. I've noticed literature in our reading curriculum that our music teacher does with them as a song. And so I always ask him to be sure and be doing that song when we're doing that story. And so I try to integrate with music when I can. So this is my first experience with PE trying to integrate. So, I mean, that's great. And I've integrated with art before and science, but the more you can do it, the better.

Also tied to staying the course, were the teachers' comments regarding the importance of collaborating with one another to successfully continue the integration process. For instance, Lisa (classroom teacher) said,

> …the integration would just have to be a collaborative process with the PE teacher. I do think it can be sustained, I just think it would need set aside planning time to really make it integrate smoothly and consistently.

Supporting Lisa's thoughts was Ariel (physical educator):

> Well, I've always liked to work with classroom teachers, but it does give me a different idea of how to. Yeah. If they ever would want to work together, that'd be

cool. That they were reading a story in their classroom and then I could act it out in PE and they could maybe do better on their test.

Sluder and Howard-Shaughnessy discussed that integrating across the curriculum can be a motivating endeavor if the teachers wish to establish relationships with other teachers which might be an impetus for the teachers integrating across each other's content matter. Supporting Sluder and Howard-Shaughness's opinions were Lisa and Ariel who also stated that integrating outside content into physical education would not only create more collaboration for physical education teachers and classroom teachers, but it would be essential to successfully integrate content across the curriculum.

Strengths, Limitations, and Implications

The strengths of this study include the crossover study design used to aggregate data on a student-level basis, as well as the multiple data collection methods, including field notes and multiple interviews throughout the six weeks. However, there were also some limitations to this study. First, it was conducted amidst the COVID-19 pandemic in late 2020 and early-2021. As a result, this study had to be stopped halfway through the second school's data collection period. Therefore, student perceptions during and after school closure may differ due to the unexplainable stresses that the pandemic imposed on human beings. Related to this situation, the sample sizes at both schools were smaller than expected.

Second, although this study's student and teacher themes fit some of the previous literature mentioned, it is important to conduct more studies to gather various programmatic student learning outcome data as well as more information about stakeholders' views (e.g., other age groups, other locations). Additionally, new activities

to integrate children's literature into physical education should be conducted to keep the integration process exciting, as expressed by many participants.

Participant findings from this study should be carefully examined by researchers and teachers alike if the integration of children's literature into physical education is being considered. It is recommended that more intervention-based research of children's literature integration into physical education, using various activities (new ways to integrate children's literature into physical education) be conducted to assess whether these methods provide favorable student and whole-of-school outcomes. Additionally, physical education should be integrated into the classroom and studied to assess student outcomes as well as to provide students with more interdisciplinary experiences. At a larger change level, the whole school has potential to be integrated if all teachers become willing to work with one another for shared student success.

Conclusion

This study is the first intervention study (to my knowledge) to examine student and teacher perceptions regarding children's literature integration in physical education. It provides important insight into students' and teachers' views about this often-advocated (yet rarely studied) method. The purpose of this study was to take an intervention-based approach to examine students and teachers' perceptions when integrating children's literature into the fitness segment of physical education. The students and teachers liked the integration of children's literature in physical education, however, the main element students voiced to change was the frequency of integration. Considering something new can be exciting for students, their perceptions align with this and should be considered in future research and teaching in this area. Overall, both

students and teachers responded positively to the integration of ELA content within physical education and bring new perspectives to the literature for future scholarly and practical works.

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Chapter 5: SUMMARY, CONCLUSION, AND RECOMMENDATIONS FOR FUTURE RESEARCH AND TEACHING PRACTICES

English language arts (ELA) has been a commonly advocated area for integration in physical education (Flanagan & Shoffner, 2013; Hollett et al., 2016; James & Bullock, 2015; Scrabis-Fletcher, 2016). It makes sense why ELA would be an area chosen for integration by other authors since ELA has been found to be essential in people's everyday lives (CCSS, 2010). Furthermore, according to Perry (2012), critical literacy includes identity and agency and is more than cognitive skills (Freire, 2001). Literacy is the relationship that students have to world. According to Freire (2001):

To acquire literacy is more than to psychologically and mechanically dominate reading and writing techniques. It is to dominate these techniques in terms of consciousness; to understand what one reads and to write what one understands; it is to communicate graphically. Acquiring literacy does not involve memorizing sentences, words, or syllables – lifeless objects unconnected to an existential universe – but rather an attitude of creation and re-creation, a self-transformation producing a stance of intervention in one's context (p. 86).

The abilities of speaking, listening, reading, and writing are necessary for effective communication in today's Arizona schools, and these ELA components are easily transferable to life outside of school (e.g., job, driving directions, making friends). Moreover, *all* teachers play an imperative role in cultivating students' reading, writing, speaking, and listening skills (James & Manson, 2015). Physical education is also essential in students' lives as this area enhances physical, social and emotional, and academic achievement (CDC, 2010; Warburton et al., 2006). Not only does physical

education contribute to the recommended 60 minutes of moderate to vigorous PA each day for school-ages children (SHAPE America, 2013), it also equips students with the knowledge, skills, attitudes and behaviors essential for a lifetime of active living beyond the context of school (Baena-Extremera et al., 2014). Recognizing that separately, both the areas of ELA and physical education are necessary to a student's development, this project investigated what would happen by integrating children's literature into physical education.

Change occurred in the physical education setting for both the teachers and students. Moreover, both disciplines (ELA and physical education) needed to use creative methods for successful implementation (Fullan, 2006). When Fullan stated that aiding schools in accomplishing their goals by substituting certain practices with better methods, he was speaking of educational reform (Fullan, 1982). Although this short study does not fulfill sustained educational reform, this project can certainly be an impetus for future developments to someday reach this reform Fullan advocates. Since the teachers were fully on board and saw the need/benefit for integration, and most students positively accepted the change, the integration of children's literature into physical education was profoundly implemented in actual practice. To my knowledge, this is the only intervention-based implementation of children's literature into physical education to-date.

The purpose of this study was to integrate children's literature into the fitness segment of physical education at two Arizona schools (one private and one charter) and investigate six hypotheses surrounding the integration of children's literature into physical education and first grade students' enjoyment levels, attitudes, step counts, Accelerated Reader (AR) scores, and perceptions as well as physical education teachers'

and classroom teachers' perceptions. The enjoyment-level hypothesis was met since students had high enjoyment levels throughout the entirety of the intervention. Additionally, although the first-grade students did not have significantly increased positive attitudes from pre- to post-intervention (not meeting this hypothesis), their attitudes maintained positive throughout the study, showing this type of integration strategy can still be a positive experience for students. The hypothesis about students' maintaining step counts was partially met since these scores varied across intervention and regular physical education fitness times. The hypothesis regarding first-grade students obtaining higher AR scores in the intervention setting (physical education) than the control setting (classroom) was rejected since reading scores varied across time, however, overall, students performed similarly on the AR assessments from content presented in the classroom and content taught in physical education classes.

Lastly, the first-grade students as well as physical education teachers and classroom teachers cumulatively had positive perceptions of the children's literature-integrated physical education, meeting the last two study hypotheses. Overall, although not all hypotheses were accepted, both the quantitative and qualitative studies resulted in positive findings as described below.

That is the thing about Books… They allow you to Travel using your Feet!

Examining Children's Literature Integration in Physical Education

When integrating children's literature into the physical education fitness segment, important findings included that students had (a) high levels of enjoyment as reported on the exit slips, (b) maintained positive student attitudes from pre- to post-intervention based on the pre- and post-reading and physical education surveys, (c)

similar student step counts, recorded using accelerometers, and (d) similar AR scores between the intervention and control settings using weekly pre- and post-AR assessments, thus showing that students could learn reading content just as well in both the classroom and physical education.

Children's literature has been advocated for integration in physical education over the years (e.g., Kane, 1994; Ostrosky et al., 2015; Vigil & Edwards, 2002), however, the studies were not empirical investigations, rather, they were suggestions based on author's experiences and thoughts (e.g., Molenda & Bhavnagrii, 2009). Regarding student enjoyment, an important finding is that students' enjoyment levels remained high throughout the research project. Similarly, Howard-Shaughnessy and Sluder (2015) offered strategies for integrating across the curriculum (e.g., reading and math integrated into physical education) to foster student enjoyment. Another finding included students' attitudes remaining positive from beginning to end of the intervention. This finding matches with prior non-empirical writing (i.e., articles based on opinions) (Hollett et al., 2015; Howard-Shaughnessy & Sluder, 2015). Step counts were also important to consider during the integration process to determine if students received similar step counts during their regular physical education fitness (Beighle et al., 2004). In Marttinen et al.'s qualitative study (2019), the students participated in a technology-integrated fitness unit during physical education. The students wore accelerometers and thirteen of the students were observed by researchers and participated in semi-structured interviews. A common theme found between this study and Marttinen et al.'s work was the novelty effect which increased student motivation during the first weeks (Marttinen et al., 2018; Marttinen et al., 2019). For instance, in field notes, it was recorded students were excited

the first day to wear the accelerometers, but on the third day (out of four intervention days), a student (Hank) asked, “We have to do these again?!” Showing disinterest and partial dissatisfaction in wearing the device repetitively. Furthermore, in Marttinen et al.’s study (2019), the students were motivated to track their steps throughout the day, however, in this study, the students did not get the opportunity to track their step counts since their scores were immediately recorded and cleared from the accelerometers. Student step counts were inconsistent across intervention days. For instance, Week 3/Day 2 of the intervention had student management issues where many boys were playing tag which resulted in much higher step counts than the book’s animal movements provided. Also on this specific intervention day was a lack of feedback and prompting from the teacher. This seemed to impact student enjoyment since students had mentioned also in interviews that they enjoyed the fitness activities when the physical education teacher was involved (e.g., making animal sounds).

Enjoyment positively affected students’ step counts on most of this project’s intervention days. These days included teacher participation with the book material and students, and the proper management of student behavior (e.g., ensuring students were completing the book activities with their hands and feet to themselves).

The last primary finding from this project was related to students’ learning of the children’s book material. It was determined that students could learn book content just as well in physical education as they could in the classroom setting. This finding is supported by various research and non-intervention study claims (e.g., Castelli et al., 2007; James & Bullock, 2015; McMullen et al., 2014; Scrabis-Fletcher, 2016). Although not children’s literature integration, Vassiliki et al. (2010) completed an intervention-

based study with oral speech integrated into preschool physical education and concluded with higher achievement gains for the intervention group who participated in both movement and ELA integration, showing ELA integration as a promising learning strategy in physical education.

Because Reading People is more Important than Reading Books: Stakeholder's Perceptions of Children's Literature Integration in Physical Education

Student and teacher perceptions were gathered via observations, interviews, and field notes. Common themes were established among student and teacher participants regarding the integration of children's literature into physical education.

Student Perceptions. Student themes included, (a) motivation and engagement (Fullan, 2007), showcasing some students' positive perceptions through the entire study and some students evolving from disliking to liking the integration, (b) learning as perceived by students (Fullan, 2001, 2007), shown through students voicing how exercise helps them learn and perform better academically, and how movement helped their learning of the book content, and (c) home environment (Fullan, 2007), presented by various student comments regarding family background and beliefs of reading, and whether or not students read or were read to at home.

Other researchers' opinions align to this project's themes. For instance, Hollett et al. (2015) mention that since integration in physical education is a new concept to students, it makes the experience more engaging and motivating to students which aligns with the student theme, motivation and engagement. Additionally, many authors discuss positive student learning and achievement when integrating ELA into physical education which fits one of this project's student themes, learning as perceive by students. Also

supporting this theme are James and Bullock (2015), and Scrabis-Fletcher (2016), stating that integration in physical education promotes students' learning and academic achievement. Lastly, Partin and Gillespie-Hendricks' (2002) importantly bring students' backgrounds and experiences into the picture by addressing various environmental variables (e.g., being read to by multiple people, being read to on a regular basis, receiving books as presents) which fits the last student theme of *home environment*. The many environmental elements that impact students is critical to consider since students can experience reading very differently than others based on their upbringings (Guthrie et al., 2007; Heath, 1982).

Teacher Perceptions. The teacher themes included (a) motivation and resources (Fullan, 2006), derived from the various teacher comments regarding their motivation as to why they continued their participation in the integration process (e.g., the teachers believe in the benefits of integration) as well as the necessary resources to integrate (e.g., training, technology), and (b) stay the course (Fullan, 2006), displayed by the teachers' interview responses relating to trying the integration and sticking with the process despite initial uncomfortableness and extra work. The student and teacher participants also provided the researchers with valuable suggestions that future researchers and teacher practitioners should deeply take into consideration if seeking to integrate children's literature into physical education for multiple student outcomes. Sluder and Howard-Shaughnessy (2015) hit the importance of teachers creating collaborative relationships to successfully integrate across the curriculum which fits the teacher's first theme of *motivation and resources*. Without collaboration between teachers, there is a great lack of resources which can decrease the teacher's motivation to tackle an integrated unit.

Additionally, James and Bullock (2015) express the crucial importance of cross-curricular integration and pushing forward beyond any obstacles which fits the last teacher theme, *staying the course.* This fits teachers' responses during the interviews as they express the integration process may feel uncomfortable at first or initially take more work, however, if you stick with it, it will get easier and become second nature.

Strengths and Limitations

The strengths of these two studies can be seen in the crossover study design used for students to be their own controls, and the various instruments used to gain eclectic information to tell me a more complete story of the experiences of the teachers and students with integrating children's literature into the fitness segments of physical education lessons (e.g., surveys, interviews, AR assessments, accelerometers, field notes). However, this research project was not without limitations. First, although still developmentally appropriate, the AR book level difficulty in week one was slightly easier than the remaining three weeks. This limitation skewed some of the AR score results. Additionally, the sample size of this study (21 total student) was small and makes it difficult to generalize the findings or assess true significance/non-significance of the data. Also, a limiting factor was that this study occurred during the COVID-19 pandemic so certain issues arose. For instance, this study was stopped halfway through the second school's data collection period. As a result, the data collection had to be completed four months later when the second school reopened. During this time, students could have gone through significant learning phases since they are in their younger years, or alternatively, the students could have faced significant stress beyond normal daily limits due to the pandemic, adversely impacting their involvement in this project. Although

these limitations are present, it still provides steps forward for future research and practices to occur.

Recommendations for Future Research and Teaching Practices

Although children's literature has been discussed as an area for integration in physical education (e.g., Molenda & Bhavnagrii, 2009), there is certainly a lack of intervention-based research regarding ELA integration in physical education in most recent years (Griffo et al., 2020), and no found intervention-based research that examines children's literature integration in physical education. Evidence is essential if teaching changes are to be made and corresponding suggestions. Therefore, it was the purpose of this project to examine children's literature integration in physical education as part of an intervention-based project providing some outcome data on student learning, physical activity, enjoyment, and attitudes as well as information on all stakeholder perceptions.

Recommendations for research resulting from this study include the need to conduct similar research (integrating children's literature into physical education) with a larger sample size and without any study halts (complete continuous research). Other age groups/school locations should also be researched on this topic to really investigate whether integrating children's literature into physical education is of value for various student outcomes (e.g., learning, enjoyment). Future studies should also include creating more of an interdisciplinary approach where both the classroom content and physical education content are assessed in the gymnasium and in the classroom. Although this study just focused on ELA learning in the classroom and in physical education, future research should be conducted in both directions. Meaning ELA content should not only be integrated into physical education, but physical education content should also be

integrated into the classroom and studied for student learning outcomes in physical education. It is imperative in the future to see if students can learn physical education-related content with classroom partnerships as well.

Final Thoughts

As the first intervention-based research study (to my knowledge) on children's literature integration in physical education, research and teacher practitioners should use these findings as a foundation to further this line of research. By considering the limitations and implications from this project, researchers and teachers alike can create more solid and developed work on this topic. It was hypothesized that this project would conclude with positive findings, and based on the results, this study was overall positive. Teachers of various areas should step outside of their comfort zone and consider working together for the shared success of many students who would benefit from this innovative approach. Researchers should also push themselves to unfamiliar places to study novel approaches to teaching physical education. Who knows, it might just be the change a school or class needs for their students. Take that step… open a book in physical education and see what results come into fruition.

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APPENDIX A

THE INTEGRATION OF ENGLISH LANGUAGE ARTS AND OTHER SUBJECT AREAS

Swanson et al. (2015) examined the integration of ELA into social studies with 11 social studies and 9 ELA teachers (N= 20 teachers). More specifically, the teacher participants were from three different school districts, two being in both southeastern and southwestern regions of the United States, and one district in a rural area. The participants were purposively selected based on the following criteria: (a) taught social studies or ELA in grades 7-12, (b) had a minimum of 3 years classroom teaching experience, and (c) deemed as a content expert by their administrative staff. Swanson et al. modified a previous observation tool and created a new 3-dimensional tool for their specific study used to code and record teacher's comprehension and vocabulary instruction during class time. First, the observers would select whether the instructional component was comprehension or vocabulary, and then move to the subcategory of instruction. For example, vocabulary includes morphology, context clues, and definitions. While comprehension includes background knowledge, preview text, discussion, and comprehension monitoring and strategies. Additionally, if the teachers used text in their instruction, the observers indicated whether the text was narrative or expository, the type of reading from the text (e.g., independent reading, whole-group), and the amount of time in minutes spent reading from the text. Thirdly, the observers would rate the instructional quality based on a 4-point scale (i.e., low, low average, high average, high). Lastly, the observers would rate the levels/approximate percentages of student engagement during the class period by means of another Likert scale (0%-25%, 25%-50%, 50%-75%, 75%-100%).

Swanson et al. (2015) used a mix of in-person observations as well as audio-recorded observations to collect data since just having a researcher in the room alone can

change usual findings. The observers also met with the teachers prior to observations to establish a relationship to ease into the observations whether audio-recorded or in-person. The teachers were instructed not to change their lessons or routine based on the researchers. Per teachers, one class period was randomly selected for observation. Additionally, observation dates were randomly selected as well. Two in-person and six audio-recorded sessions were completed over the course of the academic year. The observers took detailed field notes and used the observations tool each event. The results showed that vocabulary was used in varying amounts during social studies classroom instruction with about half of classes observed using vocabulary during social studies (51.9%). Context clue instruction was used 11.4%, and morphology occurred the least in the observed social studies classrooms, occurring only 3.8% of the time across all participating teacher's classes. Additionally, comprehension was observed roughly half of the time (54.5%), with 43.1% of social studies classes being observed using background knowledge. Twenty percent of observed classes used comprehension strategy instruction, and about 40% used comprehension monitoring. Lastly, discussion of content during the social studies classes was observed only 7.6% of the time. The quality of instruction ranged from 1 to 2.45, with most taught content being of higher quality in ELA than social studies. The only two areas where social studies was rated higher quality of teaching than ELA included, building background knowledge and discussion.

The goal of Swanson et al.'s study (2015) was to investigate the amount of ELA components used in social studies classrooms. Their findings provide important implications for future teachings in social studies classrooms. Moreover, one implications include the authors note is the integration of ELA content into social studies to help

students achieve higher and prepare them for college and the workplace since maximizing the opportunity for students to read, improve their comprehension, and build vocabulary are essential for raising students' literacy achievement levels.

Wright and Gotwals (2017) appropriately integrated ELA into science for educational change and success for Kindergarten. Furthermore, Wright, Gotwals, and other professionals in science and literacy education designed a 4-week curriculum unit, aligned with CCSS ELA and the Next Generation Science Standards, to investigate 147 Kindergarten students' oral language outcomes with science talk. The control group completed a business-as-usual science class while the intervention group completed science class with ELA integration. Some of the integrated activities included, (a) questioning (students explore and investigate the question), (b) exploring (students explore and play to complete multimodal activities related to science), (c) vocabulary (the students learn of various science vocabulary), (d) reading (the teacher reads aloud to students from informational books to enhance science vocabulary, (e) discussion (the teacher allows students to expand on their observations by practicing their thinking and talking like scientists), and lastly, (f) writing (the teacher models science writing and gives the Kindergarten students the opportunity to write and draw in their science journals. It was found that the Kindergarten participants in the intervention group outperformed the students in the control group since the intervention group was able to effectively provide evidence-based support, draw and make claims, demonstrate knowledge of science vocabulary, and correctly use the science vocabulary in a science setting. Overall, the integration of ELA into science resulted in positive outcomes for Kindergartener's science discourse.

Yilmaz and Topal (2014) recognized the apparent relationships between math and ELA despite others' past opposing views (e.g., Rainer & Matthews, 2001), and decided to research ELA concepts in math through a content analysis of the Common Core State Standards-ELA (CCSS-ELA). More specifically, the ELA K-2 content objectives were investigated to tie into mathematical practices and reasoning. Yilmaz and Topal performed document content analysis to assess if CCSS-ELA standards can aid mathematical thinking and knowing in the following three stages: (a) analyzation of English language arts (ELA) standards and related literature by one language arts expert and two math educators; (b) independent analysis of the ELA standards that can aid math thinking and knowing by the two math experts; and (c) the math and ELA experts independently placed the chosen standards into categories and analyzed the level of agreement. Additionally, on math educator and math educator assessed the chosen standards placed under each agreed category.

The three categories agreed upon, include (a) multiple representations, (b) analyzing and understanding word problems, and (c) mathematical classroom discourse. The researchers, experts, and educators concluded that all three of these math categories can be supported with ELA integration. For example, multiple representations, can be in the form of written, illustrative, or verbal with the use of texts. Additionally, math word problems can be supported by ELA through prompting and help, and students answering questions about text (who, what, when, where, how). Lastly, classroom discourse in math can be supported by ELA integration through the retelling of stories and key details, speaking so others can hear, expressing feelings ideas, and thoughts clearly, retelling stories with central details, and asking/answering questions to gain clarity on topic

information. Although this study was not an intervention study, the researchers found a unique way to show that ELA can enhance math and that integration can be beneficial.

APPENDIX B

THE INTGERATION OF OTHER CONTENT AREAS INTO PHYSICAL EDUCATION

Cecchini and Carriedo (2020) studied math integration in a 46-student, first-grade physical education class by focusing on uniting subtraction and student physical activity (PA) levels. For three weeks, the control group completed math and physical education class separately as usual, while the intervention group completed physical education with math integration. The findings included those students who engaged in the math integrated physical education lessons not only had higher PA levels, but better subtraction scores.

Spintzyk et al. (2016) also studied integration in physical education, but with biology concepts in a German sixth-grade classroom with 141 students. The control group completed physical education as usual while the intervention group partook in physical education integrated with theoretical biology concepts that explained processes occurring during physical education, such as, muscle build-up, the cardiovascular system, and nutrition. The authors found that the intervention students' post-test findings had statistically significant growth in physical education and biology content knowledge as compared to the control group.

Barney and Prusak (2015), and Brewer et al. (2016) investigated elementary students' and middle school students' (7^{th}, 8^{th}, and 9^{th} grades) PA levels when integrating music into physical education, respectively. All authors found increased PA levels. Additionally, Brewer et al.'s study found increased student enjoyment with music integration in physical education. Supporting this enjoyment factor, McClain et al. (2014) also found higher enjoyment levels of music-integrated fitness routines. Many health and cognitive benefits are fostered with increased student PA levels and enjoyment (Morgan & Hansen, 2008; Warburton et al., 2006; World Health Organization [WHO], 2011).

Shewmake. Merrie, and Calleja (2015) integrated technology, specifically, exergaming, into physical education with 148 third and fourth grade students. The researchers investigated the students' enjoyment and perceived exertion levels with a 10-item, 5-point Likert scale survey regarding exergaming in physical education. More specifically, the students completed the survey after a usual physical education class and the survey, again, after technology-integrated physical education class. The authors found that although the students perceived they did not work as hard with exergaming-integration, they enjoyed the technology integration statistically significantly more (<.001) than regular physical education (without technology-integration). However, it is important to note that students' PA levels should not be sacrificed for integration. Integration in physical education can occur seamlessly, meaning, without taking any substance from physical education while also learning of another content area.

APPENDIX C

PRIVATE- AND PUBLIC- SCHOOL-LEVEL STUDENT DEMOGRAPHICS

Demographic Variables	Private School	Public School
Male %	55	51
Female %	45	49
American Indian %	<1	5.8
Asian %	4	0.9
Black %	3	15.1
Hispanic %	5	66.5
Pacific Islander %	<1	1.1
Two or more races %	0	4.4
White %	86	6.2

APPENDIX D

PERMISSION TO CONDUCT RESEARCH FROM PHYSICAL EDUCATION TEACHERS, CLASSROOM TEACHERS, STUDENTS, PARENTS/GUARDIANS, SCHOOLS, AND THE ISTITUTIONAL REVIEW BOARD

October 2020

Dear Physical Education Teacher:

I am Janelle Griffo, from the Mary Lou Fulton Teachers College at Arizona State University and am conducting a research study that provides first-grade students with English language arts (children's literature) integration in the fitness segment of physical education. Specifically, this project will explore first-grade students' physical activity levels (measured by accelerometers), listening and reading comprehension (measured by Accelerated Reader testing), and attitudes (measured by pre- and post-surveys). Additionally, this project will look at physical education and classroom teachers' perceptions (measured by observations and interviews) when integrating children's literature into physical education.

This study is expected to pilot in October (one day) and last approximately 6 weeks (8 sessions), running from October 2020 through December 2020. The study will take place during the 7-9-minute fitness in physical education (twice a week) as well as during the school day in the classroom for 7-9 minutes (twice a week) this Fall. The first week of the study will involve obtaining consent and assent, weeks two through five will involve the integrated lessons, and week six will be used for gathering survey and interview data.

We are inviting your participation as a research participant in our project. Your involvement in this study will include teaching the integrated lesson (children's literature integration) during just the fitness segment of your physical education class to the specified first-grade classes. The other specified first-grade classes will not receive the integration, but instead your normal physical education lessons you have planned (only some of your first-grade classes will use children's literature in physical education). The children's literature integration in physical education activities are geared towards students and will include some of the following movements from the children's books: Animal movements (tiger, alligator, bunny), locomotor movements (e.g., skipping, jogging), and stretching, spinning, and twirling movements. Additionally, you will be asked to participate in an interview regarding the study.

Should you choose to participate, I am asking your permission to use your field notes and interview data so that we may have insight into how to make academic integration more effective and practical for other physical education teachers/schools in the future. Your participation in this study is voluntary and you must be 18 years or older to participate in this study. If you choose not to participate or to withdraw from the study at any time, there will be no penalty against you. If you choose to participate, you will be assigned an ID number to protect your identity. All data will be kept in a locked file cabinet off school property and only the lead researcher will have access to these forms. The master list of all participants will also be stored in a locked cabinet for the six-week duration of the study and destroyed once all the data has been translated into findings.

The direct benefits to you will include a cash incentive as well as the knowledge to integrate children's literature into your physical education class to support multiple content areas in schooling. There are no foreseeable risks or discomforts to your participation in this study, beyond regular physical education participation in your role as the teacher of this study. ASU is not liable for any injuries that may occur during this study.

Your responses to interview questions will be audio recorded and transcribed. Data will remain confidential, stored in a secure location, and subsequently destroyed after 3 years. The results of this study may be used in reports, presentations, or publications but your name will not be known. If you have any questions concerning the research study or your participation in this study, please call me (Janelle Griffo) at (602) 326-5372.

Sincerely,

Janelle Griffo, Doctoral Student

By signing below, you are giving consent for to participate in the above study.

_____ _____ _____

Signature Name Date

We would like to take pictures of you engaged in the integrated lessons to use in research articles or presentations. By signing below, you are giving us permission to use pictures of yourself as a research participant.

_____ _____ _____

Signature Name Date

October 2020

Dear Classroom Teacher:

I am Janelle Griffo, from the Mary Lou Fulton Teachers College at Arizona State University and am conducting a research study that provides first-grade students with English language arts (children's literature) integration in the fitness segment of physical education. Specifically, this project will explore first-grade students' physical activity levels (measured by accelerometers), listening and reading comprehension (measured by Accelerated Reader testing), and attitudes (measured by pre- and post-survey). Additionally, this project will look at physical education and classroom teachers' perceptions (measured by observations and interviews) regarding the integration of children's literature into physical education.

This study is expected to pilot in October (one day) and last approximately 6 weeks, running from October 2020 through December 2020. The study will take place during the 7-9-minute fitness in physical education (twice a week) as well as during the school day for 7-9 minutes (twice a week) this Fall. The first week of the study will involve obtaining consent and assent, weeks two through five will involve the integrated lessons, week three for mid-study interviews, and week six will be used for gathering survey and end-of-study interview data.

I am inviting your participation as a research participant in our project. Your involvement in this study will include using and teaching the same children's books that are the focus of integration in the physical education classes. You will simply read/teach the children's books for 7-9 minutes, twice a week for four weeks during your English language arts class time. Additionally, you will administer the Accelerated Reader quiz for each book at the end of each week (four books total, one book each week). Lastly, you will be asked to participate in three separate interviews regarding the study.

Should you choose to participate, I am asking your permission to use your field notes and interview data so that we may have insight into your perceptions of integration in physical education to make academic integration more effective and practical for physical education teachers/schools in the future. Your participation in this study is voluntary and you must be 18 years or older to participate in this study. If you choose not to participate or to withdraw from the study at any time, there will be no penalty against you. If you choose to participate, you will be assigned an ID number to protect your identity. All data will be kept in a locked file cabinet off school property and only the lead researcher will have access to these forms. The master list of all participants will also be stored in a locked cabinet for the six-week duration of the study and destroyed once all the data has been translated into findings.

The direct benefits to you will include a cash incentive as well as the knowledge provided from working with the physical education teacher to integrate children's literature into physical education class to support multiple content areas in schooling. There are no

foreseeable risks or discomforts to your participation in this study, beyond regular classroom participation in your role as one of the classroom teachers of this study. ASU is not liable for any injuries that may occur during this study.

Your responses to interview questions will be audio recorded and transcribed. Data will remain confidential, stored in a secure location, and subsequently destroyed after 3 years. The results of this study may be used in reports, presentations, or publications but your name will not be known. If you have any questions concerning the research study or your participation in this study, please call me (Janelle Griffo) at (602) 326-5372.

Sincerely,

Janelle Griffo, Doctoral Student

By signing below, you are giving consent for to participate in the above study.

_____	_____	_____
Signature	Name	Date

We would like to take pictures of you engaged in the integrated lessons to use in research articles or presentations. By signing below, you are giving us permission to use pictures of yourself as a research participant.

_____	_____	_____
Signature	Name	Date

Student Assent Form

October 2020

I have been told that my parents/guardians have said it is okay for me to be in this 6-week study and have photos taken of me. I have also been told that it is okay for my answers, scores, and how active I am to be used for research.

I am letting my data be used because I want to. I know that I can stop at any time if I want to and it will be okay if I want to stop.

Thank you!

Janelle Griffo

_____

Name

_____

Date

If you have any questions about your rights as a subject/participant in this research, or if you feel you or your child have been placed at risk, you can contact the Chair of the Human Subjects Institutional Review Board, through the Office of Research Integrity and Assurance, at (480) 965-6788.

October 2020
Dear Parent/Guardian:

I am Janelle Griffo, from the Mary Lou Fulton Teachers College at Arizona State University and am conducting a research study that provides first-grade students with English language arts integration (children's literature) in the fitness segment of physical education. Specifically, this project will explore first-grade students' physical activity levels (measured by accelerometers), reading scores (measured by Accelerated Reader testing), pre- and post-attitudes (measured by pre- and post-surveys), and perceptions (measured by two separate interviews) regarding the integration of children's literature into physical education. This study is expected to last 6 weeks, running from October 2020 through December 2020. The study will take place during the 7-9-minute fitness in physical education (twice a week) as well as during the school day in the classroom for 7-9 minutes (twice a week) this Fall. This study will in no way interfere with students' learning in either physical education or English language arts.

I am inviting your child's participation as a research participant in my project. Your child may engage in physical education fitness lessons that integrate children's literature. Additionally, your child will be taught the same children's books used during physical education in the English language arts classroom. Your child will also be asked to participate in potentially two short interviews and pre- and post-surveys regarding their perceptions and pre- and post-attitudes of children's literature integrated into physical education lessons as well as complete an Accelerated Reader quiz for each book at the end of each week for four weeks. Lastly, your student will be asked to wear an accelerometer to record their physical activity levels only during the fitness segment of physical education. The children's literature integration in physical education activities are geared towards students and will include some of the following movements from the children's books: Animal movements (tiger, alligator, bunny), locomotor movements (e.g., skipping, jogging), and stretching, spinning, and twirling movements.

Should you allow your child to participate, I am asking to use your child's interview, survey, physical activity levels, and reading score data so that we may have insight into how to make academic integration more effective and practical for other physical education teachers/schools in the future. Your child's participation in this study is voluntary and they must be 18 years or older to participate. If you do not allow your child to participate or to withdraw from the study at any time, there will be no penalty against you or your child. If you allow your child to participate, they will be assigned an ID number to protect their identity. All data will be kept in a locked file cabinet off school property and only the lead researcher will have access to these forms. The master list of all participants will also be stored in a locked cabinet for the six-week duration of the study and destroyed once all the data has been translated into findings.

Your child can benefit from this study by engaging in fun and active lessons where they can learn more about children's literature. Small items will be provided to all those students who participate, for example, stress balls and bookmarks. There are

no foreseeable risks or discomforts to your child's participation, beyond regular participation in classroom and physical education lessons. ASU is not liable for any injuries that may occur as part of this program.
Your child's responses to interview questions will be audio recorded and transcribed. Data will remain confidential, stored in a secure location, and subsequently destroyed after 3 years. The results of this study may be used in reports, presentations, or publications but your child's name will not be known. If you have any questions concerning the research study or your child's participation in this study, please call me (Janelle Griffo) at (602) 326-5372.

Sincerely,
Janelle Griffo, Doctoral Student

By signing below, you are giving consent for your child
_____ (Child's name) to participate in the above study.

_____ _____ _____

Signature Name Date

I would like to take pictures of students engaged in the after-school program **to use in research articles or presentations**. By signing below, you are giving us permission to use pictures of your child in the after-school program.

_____ _____ _____

Signature Name Date

If you have any questions about your child's rights as a subject/participant in this research, or if you feel your child has been placed at risk, you can contact the Chair of the Human Subjects Institutional Review Board through the Office of Research Integrity and Assurance, at (480) 965-6788.

School A

Study Request

Inbox

Janelle Griffo <jmweinbe@asu.edu> Mon, Aug 17, 2020, 2:34 PM

Hi Mr. XX,

I am at Arizona State University (ASU) as a 4th year PhD candidate trying to conduct my dissertation research. When I thought of a school to complete my 6-week study at I thought of XX.

The intervention is only 4 weeks long and 9 minutes, twice per week in the classroom and Physical Education. I'm requesting to work with 1st-grade students, one 1st-grade classroom teacher, and 1 Physical Education teacher. The study start date would be at the end of September or early October depending on what is easiest for the teachers.

I have received ASU IRB approval and dean approval to conduct this study. Can you please take a look at my study description below and let me know if this would be okay to conduct at your school? It would allow me to graduate on time. Thank you so much for your time and consideration of my request!

I look forward to hearing from you,

Janelle Weinberger-Griffo

Arizona State University

PhD Candidate

The purpose of my study is to investigate the following when integrating children's literature into the fitness segment of physical education:

1st-grade students' physical activity levels (i.e., accelerometers)

1st-grade students' listening and reading comprehension (i.e., Accelerated Reader assessments funded by Renaissance Learning Inc. via paper copies)

1st-grade students' attitudes (i.e., pre- and post- attitude surveys)

1st-grade students' perceptions (i.e., field notes, observations, interviews)

The physical education teacher's and 1st-grade classroom teacher's perceptions and attitudes (i.e., field notes, observations, interviews)

More specifically, the intervention is 4 of the 6 weeks and involves the integration of children's literature into the fitness segment of physical education. The physical education teacher, twice per week, for 7-9 minutes, will project the books in the gymnasium for the intervention group to read and physically follow along during the activity. As the teacher and students read together, the students will interpret the movements from the book and perform the movements themselves. When appropriate, the physical education teacher will prompt students on activities to perform and offer feedback on locomotor movements and skills. Additionally, twice per week for 7-9 minutes, the 1st-grade classroom teacher will teach the assigned book for that week to their classes via standardized combinations of (a) teacher read-alouds, (b) echo reading, (c) choral reading, (d) partner reading, and (e) whisper reading. All materials needed for this study have been fully funded (e.g., projector, books)

Teacher participants will receive cash incentives and students will receive incentives related to reading and exercise.

Mon, Aug 17, 2020, 5:09 PM

to me

Hello Janelle,

Thanks for reaching out to me with your request. We welcome you to conduct your research here at GCA! Let's set up a time to connect over the phone soon. Would you be free to speak with me on Tuesday (August 18) between 11:00 a.m. - 1:00 p.m.? I can also be available after 3:30 p.m.

Let me know what works best for you.

Blessings.

School B

Dissertation Research

Inbox

Janelle Weinberger <jmweinbe@asu.edu> Thu, Oct 8, 2020, 5:02 PM

Hi XX,

My name is Janelle and I have been in contact with the physical education teacher, and the 1st-grade teacher, who are both willing and still willing to take part in my 6-week study.

I am emailing you to first thank you for approving my request to conduct research. I also want to follow-up and make sure it is okay with you if I start pre-data collection the week of Oct 26th (pre-interviews, student pre-survey) and then start the study in the classroom on November 2nd, and lastly, start in PE class Nov 9th. The entire study would then end on December 12th (counting in your school's Thanksgiving Break Nov 25-27th).

Both teachers have agreed to these dates so long as this plan is okay with you. Please let me know! I know things may change regarding COVID, but I hope this works out-- I greatly appreciate your help!

Thank you so much,

Janelle Griffo

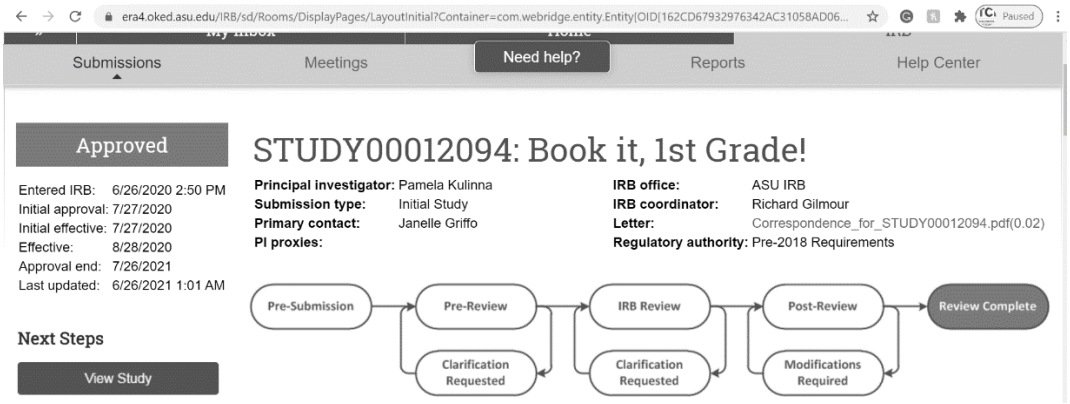
Arizona State University

Sent from Mail for Windows 10

Fri, Oct 16, 2020, 10:50 AM

to me

We are all set.



ASU Knowledge Enterprise Development

APPROVAL: MODIFICATION

Pamela Kulinna
Division of Educational Leadership and Innovation - Polytechnic Campus
480/727-1767
Pamela.Kulinna@asu.edu

Dear Pamela Kulinna:

On 8/28/2020 the ASU IRB reviewed the following protocol:

Type of Review:	Modification / Update
Title:	Book it, 1st Grade! Keeping the "Physical" in Physical Education while Integrating Children's Literature
Investigator:	Pamela Kulinna
IRB ID:	STUDY00012094
Funding:	None
Grant Title:	None
Grant ID:	None
Documents Reviewed:	• Grace Christian Academy Approval, Category: Other; • IRB Protocol, Category: IRB Protocol;

The IRB approved the modification.

When consent is appropriate, you must use final, watermarked versions available under the "Documents" tab in ERA-IRB.

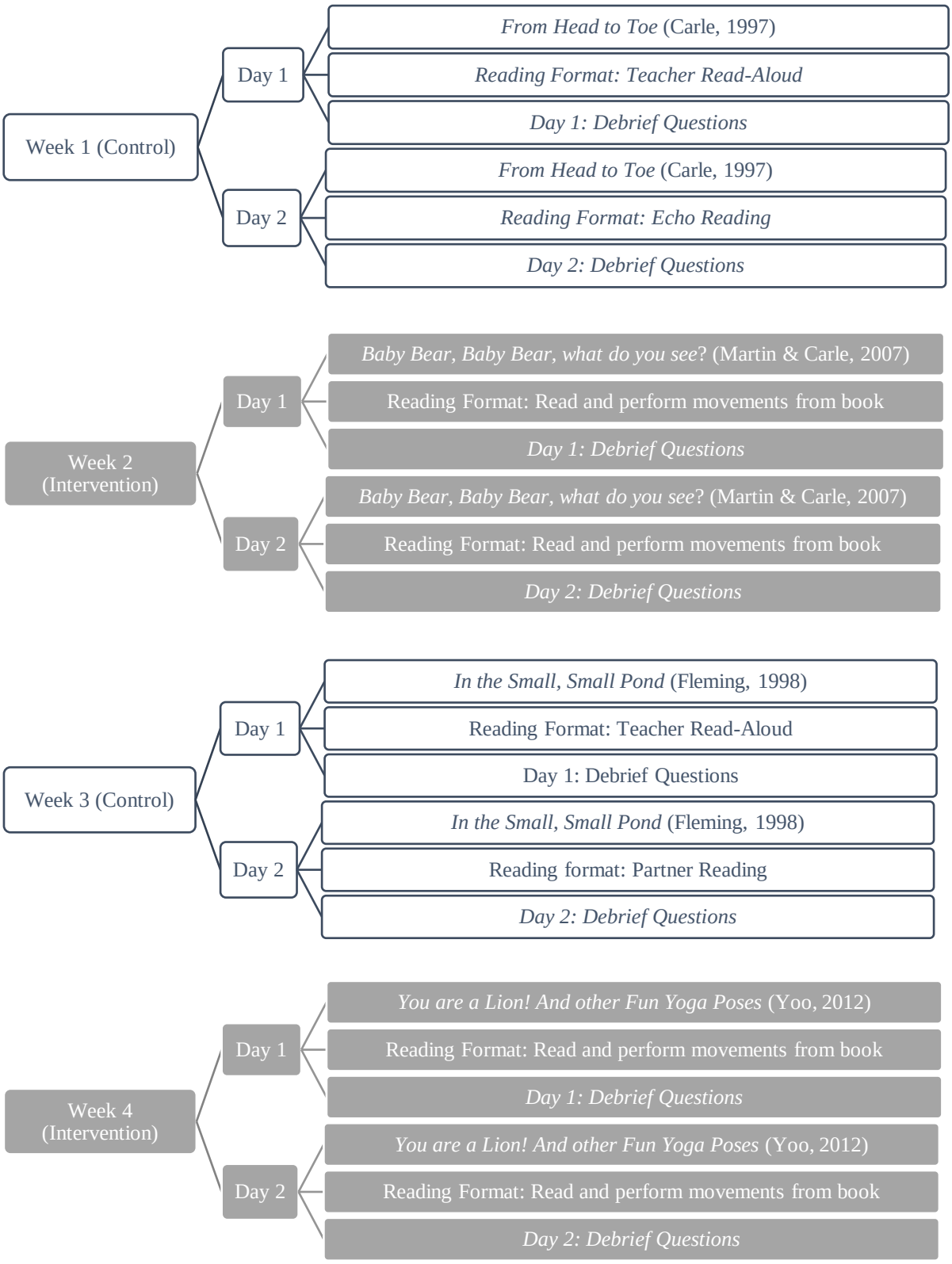
In conducting this protocol you are required to follow the requirements listed in the INVESTIGATOR MANUAL (HRP-103).

Sincerely,

IRB Administrator

APPENDIX E

RESEARCH DESIGN ACROSS CONTROL AND INTERVENTION WEEKS FOR BOTH SCHOOLS A AND B


Week 1 (Control)
Day 1
From Head to Toe (Carle, 1997)
Reading Format: Teacher Read-Aloud
Day 1: Debrief Questions
Day 2
From Head to Toe (Carle, 1997)
Reading Format: Echo Reading
Day 2: Debrief Questions
Week 2 (Intervention)
Day 1
Baby Bear, Baby Bear, what do you see? (Martin & Carle, 2007)
Reading Format: Read and perform movements from book
Day 1: Debrief Questions
Day 2
Baby Bear, Baby Bear, what do you see? (Martin & Carle, 2007)
Reading Format: Read and perform movements from book
Day 2: Debrief Questions
Week 3 (Control)
Day 1
In the Small, Small Pond (Fleming, 1998)
Reading Format: Teacher Read-Aloud
Day 1: Debrief Questions
Day 2
In the Small, Small Pond (Fleming, 1998)
Reading format: Partner Reading
Day 2: Debrief Questions
Week 4 (Intervention)
Day 1
You are a Lion! And other Fun Yoga Poses (Yoo, 2012)
Reading Format: Read and perform movements from book
Day 1: Debrief Questions
Day 2
You are a Lion! And other Fun Yoga Poses (Yoo, 2012)
Reading Format: Read and perform movements from book
Day 2: Debrief Questions

APPENDIX F

ENJOYMENT EXIT SLIP

McKenzie et al. (1994)

How did you like the fitness activities today?




Excellent **Good** **Fair** **Poor**

APPENDIX G

ATTITUDE SURVEY

Name: _____

Book it, 1st Grade!

Attitude Survey: Physical Education (PE) and Reading

The purpose of this survey is to understand your attitudes towards physical education and reading.

DIRECTIONS:

1. Please read each question carefully before answering.

2. This is not a test. There is no "right" or "wrong" answers to any of the statements. Just answer honestly on how you feel.

3. Circle **one** Garfield for each question that best describes your attitude toward physical education and reading at your school.

---

1. How do you feel when you are in physical education?

2. How do you feel during the fitness segment of physical education?

3. How do you feel when you are reading?

4. How would/did you feel about reading in physical education?

5. How do you feel when you exercise in physical education?

Turn page over

6. How do you feel about learning in physical education?

7. How do you feel about books?

8. How do you feel when learning about reading?

Turn page over

9. How do you feel when you read in class?

10. How would/did you feel about reading while exercising?

APPENDIX H

ACCLEROMETER LOG

Accelerometer Log

Student Name	ID	Step Counts	Distance	Time in Activity
	1			
	2			
	3			
	4			
	5			
	6			
	7			
	8			
	9			
	10			
	11			
	12			
	13			
	14			
	15			
	16			
	17			
	18			
	19			
	20			

APPENDIX I

PHYSICAL EDUCATION TEACHER LESSONS

INTERVENTION GROUP

Intervention Group: Physical Education Lessons

The children's literature integration will occur for 7 minutes during the fitness segment of physical education twice per week for four weeks. At the end of each lesson, for 2 minutes, the physical education teacher will debrief on the book content with standardized debrief questions. Using a projector, the physical education teacher will largely display the children's books for all the students to see. The children will read along with the physical education teacher and look at all the colorful pictures.

- After the physical education teacher finishes reading one phrase, the physical education teacher will prompt the students to perform the movements (and sounds where applicable) along with the book (words and pictures).

- The physical education teacher will also describe/demonstrate movements and provide feedback where needed

    - For example, first-grade students may not know what a blue heron is (one of the book's animal movements). Therefore, the physical education teacher would describe the animal and perform with the students the animal's movement (and sound where applicable) with feedback.

Physical Education Books with their Movements

Week	**Children's Book**
Week 3 **(Fitness)**	***Baby Bear, Baby Bear, what do you see*? By Bill Martin & Eric Carle Jr.** LG (K-3) **ATOS Book Level (readability formula):** 2.1 **Interest Level:** Lower Grades (LG K-3) **AR Points:** 0.5 **Rating:** ★★★½ **Word Count:** 204 **Fiction/Nonfiction** Fiction

	Topic - Subtopic:	Animals-Bears; Family Life-Fathers; Family Life-Mothers; Poetry/Rhymes-Stories in Rhyme;
	Movements	• Slipping like a fox around the gym • Gliding like a squirrel around the gym • Climbing like a mountain goat around the gym • Flying like a blue heron around the gym • Digging like a prairie dog around the gym • Strutting like a striped skunk around the gym • Running like a mule deer around the gym • Sliding like a rattlesnake around the gym • Hooting while jogging like an owl around the gym • Perform all movements again quickly around the gym • Lastly, like a baby bear (cub), move on hands and feet around the gym
Week 5 **(Fitness)**	***You are a Lion! And other Fun Yoga Poses* by Taeeun Yoo** LG (K-3)	

	ATOS Book Level (readability formula):	2.0
	Interest Level:	Lower Grades (LG K-3)
	AR Points:	0.5
	Rating:	
	Word Count:	203
	Fiction/Nonfiction	Fiction
	Topic - Subtopic:	Award Winners-Gelett Burgess Award; Fantasy/Imagination-Imagination; Health & Wellness-Exercise; Sports/Recreation-Yoga;
	Movements	• Perform Namaste in place • Sitting on heels with hands on knees, and tongue out, roar like a lion and stretch in place • Sit with feet together, hold on to toes, flap legs, make fluttering/wind sounds, act like a butterfly and stretch in place • Stand with feet flat, bend and touch ground, bottom up, bark like a dog and stretch in place • Lie on stomach, hands next to shoulders, push up and stretch in place; slither, glide, and hiss

	like a snake around the gym • Squat on feet, hands on the ground, hop up, ribbit and leap like a frog around the gym • Kneel, get on hands and knees, head down, back up, meow like a cat and stretch in place as well as move around the gym on all fours • Stand feet apart, palms together, reach high, reach for the sky and stretch • "Lie down, be still, and breathe" relax in place

APPENDIX J

STUDY SCHEDULE

Week 1	Week 2	Week 3	Week 4	Week 5	Week 6
Pre-data collection	Classroom (control group)	Physical education (intervention group)	Classroom (control group)	Physical education (intervention group)	Post-data
Obtain all necessary consent/ assent forms	Book 1 **(*From Head to Toe)*** 1st Day--Read Aloud 2nd Day-- Echo Reading	1st and 2nd Day-- Book 2 **(*Baby Bear, Baby Bear, What Do You See?)*** - Accelerometer Data --Enjoyment Data	Book 3 **(*In the Small, Small Pond*)** 1st Day-- Read-aloud 2nd Day-- Partner Reading	1st and 2nd Day--Book 4 **(*You are a Lion! And Other Fun Yoga Poses)*** -- Accelerometer Data --Enjoyment Data	Teacher & Student Incentive distribution
	2nd Day: Accelerated Reader 1 Assessment	2nd Day: Accelerated Reader 2 Assessment	2nd Day: Accelerated Reader 3 Assessment	2nd Day: Accelerated Reader 4 Assessment	
Teacher pre-interviews		Teacher mid-interviews Student mid-interviews			Teacher post-interviews Student post-interviews
Student pre-attitude survey					Student post-attitude surveys
	Field notes	Field notes	Field notes	Field notes	
	Fidelity checks	Fidelity checks	Fidelity checks	Fidelity checks	

APPENDIX K

CLASSROOM TEACHER BOOK LESSONS

The children's literature integration will occur for 7 minutes during the school day in the classroom. The classroom teacher, using the specified reading technique for that day, will teach their students from the pre-established book twice per week. After using the book in the classroom, the teacher will use the standardized debrief questions for that specific day for each specific book to review book content for 2 minutes.

Classroom Book Lessons

Week	Book	Day 1 Reading Technique & Description	Day 2 Reading Technique & Description
Week 2	***From Head to Toe*, By Eric Carle Jr.** Lower Grades (K-3) **ATOS Book Level (readability formula):** 1.0 **Interest Level:** Lower Grades (LG K-3) **AR Points:** 0.5 **Rating:** ★★★½ **Word Count:** 207 **Fiction/Nonfiction** Nonfiction **Topic - Subtopic:** Animals-Misc./ Other; Careers-Sports; Community Life-Public Health	**Read-aloud:** The teacher reads the book aloud to their students.	**Echo reading:** The teacher reads a passage from the book and the students subsequently echo the passage aloud together for the teacher to listen.
Week 4	***In the Small, Small Pond* by Denise Fleming**	**Read-aloud:**	**Partner reading:**

	LG (K-3) **ATOS Book Level (readability formula):** 2.0 **Interest Level:** Lower Grades (LG K-3) **AR Points:** 0.5 **Rating:**  **Word Count:** 64 **Fiction/Non fiction** Fiction **Topic - Subtopic:** Animals-Misc	The teacher reads the book aloud to their students.	The students take turns reading the book with their table partners.

APPENDIX L

FIDELITY CHECKLIST

Fidelity Checklist

Date:_____

Fidelity Person Name:_____

Classroom teacher: _____

Physical Education teacher: _____

Week #: 1 2 3 4

Day #: 1 2

Mark all that apply for each participant.

Item	**Classroom**
The book is being used	
The teacher is reading the book	
The students (≤90%) are reading along with the book	
The students (≤90%) are reading together (partner reading)	
The book activity is ≤7 minutes in length	
The debriefing questions are ≤2 minutes in length	
Item	**Physical education**
The book is being projected in the gym	
The teacher is reading the book aloud	
The teacher is providing movement prompting and feedback	

The students (≤90%) are reading along with the book	
Students (≤90%) are participating with the book's corresponding movements	
The book activity is ≤7 minutes in length	
The debriefing questions are ≤2 minutes in length	

APPENDIX M

TWO-MINUTE BOOK DEBRIEF QUESTIONS FOR CONTROL AND INTERVENTION WEEKS

WEEK 2

From Head to Toe (Carle, 1997):

- 1st day
  - Show me what your favorite animal movement was from the book. (student's response/choice)
  - Show me again what the giraffe does? (bends neck)
  - Show me again the monkey's movement? (waves its arms around)
  - Show me again what the seal does? (swims around and claps hands)
- 2nd day
  - Show me what your favorite animal movement was from the book (student's response/choice)
  - Show me again what the elephant does? (stomps feet)
  - Show me again what the crocodile does? (wriggles its hips)

WEEK 3

Baby Bear, Baby Bear, what do you see? (Martin & Carle, 2007):

- 1st day
  - Show me what your favorite animal movement was from the book. (student's response/choice)
  - Show me what the striped skunk was doing? (strutting)
  - Which animal glided by the fox? (squirrel!)
  - Show me the animal that mam bear saw? (Her baby bear)
- 2nd day
  - Show me what your favorite animal movement was from the book. (student's response/choice)
  - Show me what the screech owl was doing? (hooting)
  - Show me what the rattlesnake slid by? (a mule deer)

WEEK 4

In the Small, Small Pond (Fleming, 1998):

- 1st day
  - Show me what your favorite animal movement was from the book. (student's response/choice)
  - Show me the animals that waded? (Geese!)
  - Show me what the swallows did? (Sweep, scoop, and SWOOP!)
  - Show me what the tadpoles did? (wriggled!)
- 2nd day
  - Show me what your favorite animal movement was from the book. (student's response/choice)
  - Show what you look like when there is a winter breeze? (Chilly!)

- Show me what the animals did last in the small pond? (sleep)

WEEK 5

You are a Lion! And other Fun Yoga Poses (Yoo, 2012):

- 1st day
  - Show me what your favorite animal movement was from the book. (student's response/choice)
  - Show me what the children do when the warm sun rises? (They gather!)
  - Show me what a lion does? (Roars loud!)
  - Show me which animal spreads their bright wings to fly? (A butterfly!)
- 2nd day
  - Show me what your favorite animal movement was from the book. (student's response/choice)
  - Show me what the dog does? (Stretches and barks!)
  - Show me the animal that mews at the moon? (A cat!)

APPENDIX N

TIME ON TASK

Time on Task

Research suggests that in an effective class , students should be on task more than 90% of the time (Knight, J., 2007).

Every five seconds, the observer glances at a student. If the student is on task at the moment the observer looks at her, the observer puts a plus sign (+) in the appropriate box. If the student is off task, the observer puts a zero (0) in the box. While observing the class, the observer moves attention systematically from one student to the next. Thus, an observer might observe students in rows, by looking at each student in each row every five seconds, moving down each row student by student. If observing students in groups an observer might move his attention from student to student, every five seconds going in a clockwise motion around the room. Each box on the form represents each student observed. The observer continues to watch students systematically until all 60 boxes contain either a plus or a zero. Once all the boxes are filled, the observer has spent five minutes observing the class. To calculate a percentage of time on task, simply divide the total number of boxes that indicate a student was on task by the total number of boxes. Research (Rienke) suggests that coaches list at least three times (completing three forms) before they calculate time on task for a given class. To increase time on task new strategies must be discussed. Any improvement should be celebrated.

Knight, J., (2007) Instructional Coaching

Time on Task Analysis

Classroom and Teacher Observed_____

Date_____

Observer_____

Beginning Time_____

End Time_____

+ indicates engaged -indicates not engaged

Comments:

APPENDIX O

AVERAGE STEP COUNTS FOR INTERVENTION WEEKS THREE AND FIVE, AND AVERAGE ACCELERATED READER SCORES PER INTEVENTION/CONTROL WEEK

Week/Day	Step Count Average	*SD*	Min. Step Count Average	Max. Step Count Average
School A (n=13)				
Week 3/Day 1	1,232.38	309.11	735	1, 689
Week 3/Day 2	923.67	192.77	705	1,324
Week 5/Day 1	532.17	152.83	312	829
Week 5/Day2	528.43	210.34	195	983
School B (n=8)				
Week 3/Day 1	706.60	123.068	521	820
Week 3/Day 2	752.60	142.44	546	912
Week 5/Day 1	321.80	54.37	256	382
Week 5/Day2	405.40	70.80	302	468

	School A		School B	
Week (Control/Intervention)	Average AR Score	*SD*	Average AR Score	*SD*
Week 1 (Control)	4.46	1.33	4.13	1.13
Week 2 (Intervention)	4.23	1.09	3.63	1.30
Week 3 (Control)	3.62	1.33	3.33	.816
Week 4 (Intervention)	3.46	1.56	3.20	1.64

APPENDIX P

AVERAGE STEP COUNTS ACROSS INTERVENTION COMPARED TO THE NATIONAL RECOMMENDATIONS

To assess whether every student at every point in time met 1,800-2,000 step counts per 30-minute class physical education period while integrating children's literature, the average number of steps per intervention day was adjusted for the amount of time spent in the activity. The intervention period during week 5 for School A was just under the nationally recommended 1,800 steps per 30-minute physical education period by approximately 13 steps. School B met the national recommendation for both days in week three, but this was not the case for week 5 (same as school A).

Week/Day	Average Number of Step Counts	Total Time	Total Average	Meeting (Y/N)?
School A				
Week 3/Day 1	1232.38	10 min, 16 sec	3,601.11	Y
Week 3/Day 2	923.67	8 min, 56 sec	3,101.88	Y
Week 5/Day 1	532.17	8 min, 12 sec	1,946.96	Y
Week 5/Day 2	528.42	8 min, 52 sec	1,787.89	N
School B				
Week 3/Day 1	706.60	8 min, 25 sec	2,518.57	Y
Week 3/Day 2	752.60	9 min, 11 sec	2,458.58	Y
Week 5/Day 1	321.80	8 min, 19 sec	1160.80	N
Week 5/Day 2	405.40	7 min, 51 sec	1549.30	N

Regarding the error bars for each error bars plot, these are measures of variation, calculated from the standard deviation/standard error. Moreover, if the mean is close to the maximum score, the error bars can extend outside the scale range which is shown in Figures 1 and 2.

APPENDIX Q

PILOT STUDY: ACCELEROMTER AND ENJOYMENT DATA, AND AVERAGE STEP COUNTS ACROSS INTERVENTION COMPARED TO THE NATIONAL RECOMMENDATION

	N	Minimum	Maximum	Mean	Std. Deviation
Step Counts					
Step Counts Day 1	10	130	642	369.60	161.21
Step Counts Day 2	11	546	1500	1100.82	328.93
Step Counts Day 3	11	247	1187	739.91	288.62
Step Counts Day 4	8	323	877	557.63	222.28
Overall Step Count Mean				677.25	
Enjoyment					
Enjoyment Day 1	10	1	2	1.30	.48
Enjoyment Day 2	11	1	3	1.36	.67
Enjoyment Day 3	11	1	4	1.73	1.10
Enjoyment Day 4	8	1	2	1.25	.46
Overall Enjoyment Mean				1.43	

Pilot Study: Average Step Counts across Intervention compared to the National Recommendation

Week/Day	Average Number of Step Counts	Time not to go over	Total Average	Meeting (Y/N)?
Day 1	369.60	9:00	1,232.00	N
Day 2	1100.82	9:00	3,669.40	Y
Day 3	739.91	9:00	2,466.37	Y
Day 4	557.63	9:00	1,858.77	Y

APPENDIX R

STUDENT INTERVEW QUESTIONS

1. What do you like about physical education? Why?

2. What don't you like about physical education? Why?

3. What do you like about reading? Why?

4. What don't you like about reading? Why?

5. What do/would you like about reading in physical education? Why?

6. What don't/wouldn't you like about reading in physical education? Why?

7. Would you like to change physical education to add reading? Why or why not?

8. Do you think that reading in physical education can make physical education better? Why or why not?

9. Do you think that reading in physical education can make reading better? Why or why not?

10. Any other comments?

11. Which do you prefer: Physical education with reading or physical education without reading? Why?

APPENDIX S

PHYSICAL EDUCATION TEACHER INTERVIEW QUESTIONS

1. What do you think physical education's goal is in schools?

2. Did you think that English language arts (ELA) integrated into physical education was a good idea, why or why not?

3. How did you feel when integrating another content area (ELA; children's literature) into physical education?

4. How did you feel when you were not integrating children's literature into physical education?

5. What were some of your students' thoughts of the integration of children's literature into physical education?

6. Based on your experiences, how would you integrate ELA into future physical education lessons? Why?

7. Do you think that the integration of outside content (e.g., ELA) into physical education is sustainable? Why or why not?

8. How do you think that learning can be improved in the classroom?

9. How do you think that learning can be improved in physical education?

10. What other content would you be interested in integrating into your physical education program? Why?

11. Do you think that academic integration in physical education can create positive school reform (Fullan, 1982)? Why or why not?

12. Do you think that integration in physical education can be initiated, implemented, and sustained to provide favorable whole-school outcomes (Fullan, 1982, 1991)? Why or why not?

13. What worked in the integration process?

14. What did not work in the integration process? If anything, how did you work

around those issues?

15. To what extent did the integration process get easier (if it did)?

16. Any other comments/questions?

APPENDIX T

CLASSROOM TEACHER INTERVIEW QUESTIONS

1. What do you think physical education's goal is in schools?

2. Do you think that English language arts (ELA) integrated into physical education would be/was a good idea, why or why not?

3. How did you feel about teaching the same books each week as the physical education teacher?

4. How did you feel knowing the students were being taught the same book content again in another class setting?

5. What were some of your students' thoughts of the integration of children's literature into physical education?

6. Based on your experiences, what advice would you give physical education teachers for ELA integration?

7. Do you incorporate physical activity into your classroom? If yes, have you tied classroom content in with physical activity?

8. How do you think that learning can be improved in physical education?

9. How do you think that learning can be improved in the classroom?

10. How do you think that academic integration in physical education can create positive school reform (Fullan, 1982)?

11. Do you think that integration in physical education can be initiated, implemented, and sustained to provide favorable whole-school outcomes (Fullan, 1982, 1991)? Why or why not?

12. Any other comments/questions?