

Movement in the Elementary School Classroom: A Literature Review

Submitted by

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Abstract

This Honors College Thesis is a literature review of movement in the elementary school classroom. Movement has been proven to foster cognitive growth, and this thesis examines positive effects in various formats. I compare different methods of movement-centered techniques that have been implemented in classrooms and have been shown to maximize the learning experience for students. The review of the literature shows overwhelming evidence in support of using movement in the elementary classroom.

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Introduction

There were a few central purposes of this literature review. One was to document different methods of movement in the elementary school classroom. Another was to offer multiple ways of incorporating movement into the classroom that teachers could adapt for their diverse learning communities. As part of the last purpose, a variety of sources was analyzed to compare and contrast existing movement-based teaching methods in the elementary school classroom. Literature included peer-reviewed journal articles, books, research studies, and a descriptive report. The plethora of existing research on the implementation of movement-centered teaching strategies in schools implied that a literature review would be the practical approach to this project. Themes were drawn among the sources to analyze how they differed in content and then pull commonalities among them. Said commonalities include the effects of movement on students' social and emotional wellbeing, the integration of the arts along with movement (i.e. dance and music), benefits of movement for the brain and the body, advantages for the brain and body as a single system, and both quantitative and qualitative results from studies conducted on implementing movement in the classroom.

The various advantages that movement produces for student achievement validate incorporating techniques that involve movement in the classroom. Being physically active provides oxygen, a crucial element to forging connections between neurons, to the part of the brain that works during both movement and learning (Helgeson, 2011). Furthermore, studies demonstrate a correlate between a consistent schedule of movement in the classroom and improvements in student focus, recall of information, and positive attitudes towards schoolwork (Wilson, 2014). The desire is that by presenting the advantages of implementing differentiated approaches to movement in the classroom, more schools will use such strategies and potentially others to help students reach their fullest potential.

Problem

Movement in schools has been a hot button topic in education for a significant period of time; this phenomenon dates back to the times of child theorists and researchers such as Jean Piaget and Lev Vygotsky. Theorists and educators alike have been discussing movement in the classroom as a means to boost student academic success for decades; it is commonly viewed as a potential solution to issues surrounding student focus. As a result, educators have employed various forms of movement-based techniques to boost students' academic success. However, cutting back on physical education or considering cutting back is a common occurrence in school districts (Wilson, 2014), so people who advocate for movement in schools push back for the continuation of physical education. Researchers have also attempted to uncover how to best employ various movement-based teaching techniques so that students will experience academic success; they have conducted various studies to observe and analyze the results of their implementation, followed by attempts to determine the implications for utilizing these teaching methods. To show why movement is needed in schools, this project aims to compare and contrast existing research on movement-based teaching strategies in elementary school classrooms, and thus determine which strategies may best maximize learning experiences for students.

Additionally, there are some claims from previous research that need further analysis. Donna Wilson (2014) - school psychologist, author, and professional development coach for teachers - provides insight into the benefits of physical movement in the elementary school classroom. She shares methods that encourage learning, like starting the school day with physical exercise, and using breaks to stretch in between lessons (Wilson, 2014). While breaks have the potential to increase students' attention during lessons and help them remember the information

(Wilson, 2014), there is not a clear correlation between movement breaks and academic achievement. This is knowledge that this project intends to uncover.

Themes

For this project, I reviewed various pieces of literature that examined the incorporation of movement in elementary school classrooms. I then drew themes from the commonalities that I noticed across sources. The themes that I will describe in this project are: benefits for the brain, benefits for the body, improvement of academic skills/benefits for learning, social/emotional benefits, and a mind/body connection. The themes from the literature create a cohesive argument for the implementation of movement in the elementary school classroom.

Benefits for the Brain

One of the most prominent themes among sources analyzed for this project was benefits that movement produces for the brain (Helgeson, 2011; Dennison, 1989; Ortega, 2017). Physical activity supports student achievement by activating regions of the brain that are important during the learning process; movement sparks the creation of new nerve cells from stem cells that are located in the hippocampus, therefore improving long-term memory formation and storage of information (Helgeson, 2011). Memory formation is essential for learning to occur, and the part of the brain responsible for said task is activated during movement, therefore creating an optimal environment for learning (Helgeson, 2011). Heightened brain activation during movement creates the ideal conditions for students' academic achievement, encouraging the incorporation of movement-based strategies in schools as a result.

Moreover, specific exercises stimulate the brain for specific abilities. Researcher Paul Dennison (1989) describes certain physical exercises in his book *Brain Gym*, particularly how

they involve the brain. One such exercise, known as the alphabet 8's, activates the brain to recognize symbol and heighten peripheral awareness (Dennison, 1989). This movement has students trace the letters of the alphabet either on the board or in the air; it involves the larger muscles in the arms, shoulders, and the chest (Dennison, 1989). It can be moved to a smaller scale when there has been sufficient integration of the larger muscles (Dennison, 1989). The Elephant, another midline movement, energizes the brain for speech and thinking skills, attention capabilities, and depth perception (Dennison, 1989). In this particular activity, the torso, head, and arm are used to point, and the hand functions as one component; this component revolves around a faraway, imaginary lazy 8 (Dennison, 1989). For the activity called the grounder, the student places their feet about a length apart, 90 degrees to each other, and lunges forward with the knee moving in a straight line over the foot (Dennison, 1989). This lengthening activity triggers the brain for organization, spatial awareness, and full-body awareness (Dennison, 1989). The *Brain Gym* exercises described here illustrate positive results for the brain in the form of heightening specific abilities, all of which are conducive to learning, and thus encourage the implementation of movement-based teaching strategies in schools.

In addition to specific exercises, Dennison describes more general categories of exercises that bring various benefits to learning, specifically for the brain. He includes categories such as midline movements, lengthening activities, and energy exercises and deepening attitudes (Dennison, 1989). Lengthening activities, for instance, help the neural pathways evolve and strengthen, which are needed for creating connections between previous knowledge and developing an aptitude in expressing and processing new information (Dennison, 1989). Midline movements describe another type of exercise that develops skills needed for performing left-right movements across the midline of the human body, and energy exercises and deepening attitudes “reestablish neural connections between body and brain, thus facilitating the flow of

electromagnetic energy throughout the body” (1989, p. 23). Incorporating specific movement-based techniques into lessons produces positive results for the brain, and therefore validates the incorporation of movement in classrooms.

The *Brain Gym* exercises appear in a few sources reviewed for this project; Brenda Ortega (2017) explains that one of the teachers she interviewed weaves Dennison’s work into her classes. Pamela Nickelson, veteran teacher of 40 years, credits her teaching methods to her training through the *Brain Gym* program (Ortega, 2017). Ortega mentions cross-lateral exercises, which make the two hemispheres of the brain communicate and construct neural pathways for motor and thinking abilities (Ortega, 2017). An exercise in this category has students connect the elbows to the opposite knees while marching in place (Ortega, 2017). Both Ortega and Dennison share specific movement activities that provide beneficial results in their classrooms for the brain during learning, in turn encouraging the integration of movement-centered teaching techniques into schools.

Along with similarities, differences among sources were found when drawing common themes from them. One of the main distinctions between Dennison’s *Brain Gym* and Helgeson’s article is the fact that *Brain Gym* is considerably lengthier than Helgeson’s work, in both content and in detail. *Brain Gym* is divided into sections that focus on different types of exercises. The purpose of the book is to help teachers or parents view and be familiar with the patterns of the included exercises, thus making the delivery of the learning experience accurate (Dennison, 1989). Helgeson provides the reader with four suggestions for specific activities. Helgeson’s article proves useful as a tool to refer to when in need of specific activities for lessons that incorporate movement, and for becoming familiar with some of the rationale behind implementing movement techniques in the classroom. Paul Dennison’s book provides the reader with a plethora of exercises to implement in the classroom, though it presents its unique strengths

by explaining the physical and academic benefits of each activity, rather than leaving it at the advantages of movement in general.

Regardless of methodology, movement-based teaching strategies yield positive results for the brain. Physical activity creates the ideal opportunity for student success with learning by providing the brain with oxygen (Helgeson, 2011). *Brain Gym* exercises activate brain regions that play an important role in the learning process, and support specific learning skills through brain function (Dennison, 1989). These advantages therefore encourage implementing movement-based teaching techniques into classrooms.

Benefits for the Body

Numerous sources accounted for the fact that movement has been shown to produce beneficial results for both the body and the brain (Ogletree, 1997; Helgeson, 2011; Dennison, 1989; Ortega, 2017). A particular movement strategy known as eurythmy provides the body with multiple advantages. Eurythmy is a movement-based method that incorporates movements in the arms and the overall body to demonstrate vowels and consonants of spoken words in a visual way (Ogletree, 1997). There are three different types of eurythmy that exist: therapeutic/curative, speech, and music/tone (Ogletree, 1997). Speech and music eurythmy are both also known as artistic eurythmy (Ogletree, 1997). Therapeutic eurythmy is based on artistic eurythmy (Ogletree, 1997). A physician is needed to diagnose the ailment and therefore suggest appropriate therapeutic eurythmy exercises (Ogletree, 1997). All forms of eurythmy are defined as therapeutic, but there are certain eurythmic exercises that are chosen for each age level (Ogletree, 1997).

Eurythmy is beneficial for the body in the sense that it improves various physical functions. A physician from 1971 who studied the effects of eurythmic exercises claims that the

exercise for the letter “L” activates circulation and therefore improves breathing (Ogletree, 1997). Additionally, artistic eurythmy has been used to improve speech, coordination, breathing, and posture (Ogletree, 1997). Being able to express oneself through speech is an important skill to have in the classroom, so performing exercises that support this can prove beneficial to academic success. Improving students’ physical health in the aforementioned ways creates a positive learning environment that encourages academic success for students.

Earl J. Ogletree (1997) documents the results of the incorporation of eurythmy in the Waldorf Schools curriculum in a descriptive report. This specific method of movement-centered teaching was adapted into the Waldorf Schools to improve instruction in history, mathematics, speech, and music (Ogletree, 1997). Eurythmy is unique from other types of movement because it conveys the vowels and consonants of speech, and the pitches and intervals of melodies, through very disciplined arm and body movements (Ogletree, 1997). Other methods that center around movement in their practice do not have such specific meanings with each gesture or movement. Techniques such as modern dance, mime, or ballet are usually subject to general interpretation, which is not the case for eurythmy; this specific movement technique differs from others in the sense that each consonant or vowel has a specific gesture assigned to it (Ogletree, 1997). There is not much leeway for different interpretations of the movements tied to Eurythmy as a result.

Other benefits of incorporating movement relate to stress relief. Participating in movement and/or exercise releases muscle tension, and it can reduce stress for students as a result (Helgeson, 2011). The less stress a student has, the more positive and effective the learning process will be. Some of the *Brain Gym* exercises provide the body with a release from stress that the body may carry, namely the energizer and lazy 8’s. Lazy 8’s involve tracing the shape of the infinity symbol, at first alternating hands, and then incorporating both of them

simultaneously (Dennison, 1989). This exercise helps the eyes, neck, and the shoulders relax while the student concentrates (Dennison, 1989). Concentrating, along with the opportunity to get rid of any physical stress, are both part of building a solid foundation for academic success. Another exercise, named hook-ups, incorporates crossing the limbs. For the first part of the activity, students place one ankle over the other, and one wrist over the other, intertwining their fingers together and raising their hands towards their chest (Dennison, 1989). Students stay in this position for one minute and breathe deeply, keeping their eyes closed and their tongue on the roof of the mouth the entire time (Dennison, 1989). For part 2, the legs are uncrossed, the fingertips are put together, and students breathe in this position for another minute (Dennison, 1989). This exercise creates deeper respiration, something that allows the body to relax. Paul Dennison's discoveries of the physical effects of specific exercises on the body support the implementation of these movements into the classroom, as physical relaxation creates an opportune scenario for maximizing the learning process for students.

Additionally, specific *Brain Gym* exercises help with particular physical skills, thus yielding benefits for the body. According to Dennison, an exercise he calls the owl "re-educates neck-and-shoulder-muscle proprioception related to auditory skills" (1989, p. 17). This specific movement has students grab their shoulders, firmly squeeze the muscles, and turn their head as if they are looking over their shoulder (Dennison, 1989). Students do this for each shoulder; they breathe deeply and pull the shoulder back as they do it but open the shoulder again and squeeze the other shoulder as they switch sides (Dennison, 1989). The movement ends with the student dropping their chin to their chest and breathing deeply, allowing the muscles to relax (Dennison, 1989). Another activity called arm activation elongates the upper chest and shoulder muscles (Dennison, 1989). This exercise requires students to hold one of their arms next to an ear, exhale gently while keeping their mouth closed, and push their arm against their other hand in multiple

directions: front, back, in and away (Dennison, 1989). Releasing gross-motor tensions through this exercise improves fine motor skills and therefore encourages fine-motor activities (Dennison, 1989). The exercise therefore supports specific physical skills that are used often during learning, particularly writing. Being able to function physically is conducive to a positive learning experience, as these skills are necessary for academic achievement.

In addition to Dennison, Pamela Nickelson describes in Ortega's piece how the *Brain Gym* exercises have proven to be helpful to overactive students, in the sense of helping them focus. She starts her classes with *Brain Gym* exercises for the first three minutes of the time she spends with students (Ortega, 2017). Some of them include cross crawls, lazy 8's and hook-ups (Ortega, 2017). In addition to helping with focus and productivity, Nickelson also claims that these exercises provide the body with peace; the students report that the movements are relaxing (Ortega, 2017). Being able to focus and possessing a feeling of calm are important foundations to academic success. Similar to Nickelson's statement, MEA member and kindergarten teacher Kerry Sung claims that movement in the classroom provides students with a sense of calmness, and it allows them to focus (Ortega, 2017). Both Dennison's research and Ortega's article reveal that implementing movement presents positive results for students' physical well-being, thus providing ample scaffolding for a positive learning experience.

The aforementioned benefits outlined above and observed by various teachers and researchers provide evidence that movement yields positive results for the body in the form of relaxation, improved spatial awareness, improved motor skills, and heightened focus. These benefits in turn provide students with strong scaffolding for effective learning and teaching, supporting the notion that movement-based teaching techniques are conducive to the learning process.

Mind-Body System Benefits

Some of the literature examined described benefits for the brain and the body as a single system. Dennison refers to advantages for the mind-body system when he describes benefits of certain exercises in *Brain Gym*. The author claims that lengthening activities relax muscles and tendons in the brain, which in turn resets proprioceptors in the brain (Dennison, 1989). These are also known as the brain cells that are found in the muscles, which provide us with information about our location in space (Dennison, 1989). As a result, students receive better access to the entire brain-body system (Dennison, 1989).

Ortega's piece also illustrates a mind-body connection. This connection is part of Nickelson's rationale behind implementing movement in her classroom. Ortega refers to previous studies in their discovery of a clear link between movement and learning and the way it relates to the mind-body system (2017). According to the author, research specifically states that movement catalyzes activity within neural networks, heightening blood flow, and increasing students' mood, enthusiasm, and motivation (Ortega, 2017). Such benefits that relate to the mind-body connection and improve brain function have become supported in information from neuroscientific research (Ortega, 2017). Thus, previous studies show that having a sound mind-body connection is advantageous to the learning process.

In addition to the exercises described by Dennison, other types of movement-based strategies illustrate a mind-body connection that is a foundation to academic success. One such strategy is yoga. As students participate in the movements, they combine the positions with deep breathing, which in turns increases overall circulation in the body (Peck et al, 2005). The heightened flow of blood and oxygen then leads to a release of stress and activates the central and automatic nervous systems (Peck et al, 2005). Releasing tension sets the groundwork for a

successful learning environment. Thus, yoga involves the brain and body as a single entity in ways that are beneficial for the learning process.

Existing research illustrates that movement catalyzes the body and the brain to work together in a number of ways that are beneficial to learning. Paul Dennison and Peck's team describe specific movement-centered methods that support academic achievement. Additionally, Ortega and Peck refer to the physiological effects of movement on the mind-body system. The aforementioned benefits therefore speak to the idea that movement supports learning in the elementary school classroom.

Academic Benefits

A variety of sources indicated improved academic skills as a result of implementing movement into elementary school settings (Helgeson, 2011; Dennison, 1989; Skoning, 2010; Ogletree, 1997; Ortega, 2017; Peck et al, 2005). Among these sources, John Helgeson explains the way movement influences the progression of important academic skills, describing it as being essential to children's intellectual development (2011). Specifically, Helgeson claims, "Exercise helps with problem solving, memory, and reasoning" (2011, p. 82). Concentration is another skill described in his piece; Helgeson refers to previous studies when stating that participating in physical activity regularly encourages healthy child development by boosting concentration skills, along with a positive attitude (Helgeson, 2011).

Brain Gym also lists the specific academic skills that are improved with each exercise. For instance, the cross crawl improves skills such as spelling, writing, reading, and listening, along with developing spatial awareness and body coordination (Dennison, 1989). Additionally, The owl boosts skills such as mathematical computation and listening comprehension. Being able to perform mathematical calculations is extremely vital to academic success. Listening

comprehension is an important skill that relates to all subjects and is therefore important for various tasks, such as hearing directions, understanding explanations from both peers and the teacher, and effective communication among peers. Developing this task will therefore be beneficial to students in terms of academic success. Finally, the exercise arm activation improves important academic skills like spelling and penmanship (Dennison, 1989). Spelling and penmanship are important skills to all domains, since every subject requires a certain amount of writing. Thus, developing this particular ability will support overall academic success. In brief, the activities described in this book develop skills that are needed for successful learning, and studies done by Dennison show the positive effects of movement on academic skills.

Activities that involve dancing produce academic benefits for students as well. Stacey Skoning (2010), Assistant Professor of Special Education at the University of Wisconsin Oshkosh, describes an activity in her article “Dancing the Curriculum” where students create a character dance; students are divided into small groups and must decide how a student from a book that they read would move at different points in the novel (2010). The students then mix the movements with phrases that represent their character, and they then present their dances in front of the class (Skoning, 2010). Integrating movement in this way helps students who struggle with remembering information relating to language and comprehension to recall things such as plot lines and characters, hence creating more academic success for students (Skoning, 2010). This particular element of Skoning’s article is similar to Paul Dennison’s descriptions of advantages of individual movements, though the activities discussed by Skoning relate more to dance and unstructured movement than the activities that Dennison describes. Stacey Skoning therefore offers a piece that contains well-known information, though it still shows its value by presenting new data on the effects of merging creative movement and dance with learning.

Eurythmy also provides students with academic benefits. Eurythmy is known to improve skills in music, literature, poetry, language, reading, writing, drama, speech, history, geometry, and arithmetic (Ogletree, 1997). When students make note of the rhythm in songs and poetry, as done in first grade, their speaking and listening functions are heightened (Ogletree, 1997). These abilities help process and express information that is important to academic success, i.e. student ideas/solutions, directions, comments from classmates, etc. Additionally, eurythmy prepares students for learning the alphabet, and for learning how to read as well (Ogletree, 1997). Such knowledge is applied in every subject and is extremely important for student achievement in class. Lastly, fourth and fifth grade students are exposed to the foundation of future and current geometry lessons by performing more sophisticated geometric shapes, such as spirals, pentagrams, and triangles (Ogletree, 1997). Comparable to the results of exercises mentioned by Skoning, Ortega, Helgeson, Dennison, and Cohen, eurythmy is academically beneficial for students.

Both teachers interviewed in Ortega's piece discuss their methods of movement integration, and the effects it has had on both of their classes, particularly with students' academic success. Kindergarten teacher Kerry Sung explains that she integrates rhymes and rhythm into her teaching; she states that this integration helps truly cement the academic concepts into students' brains, particularly ones involving math (Ortega, 2017). Pamela Nickelson's students describe the *Brain Gym* exercises as enjoyable, and she has received reports from other teachers that her students perform the exercises before standardized testing (Ortega, 2017). Although their strategies of incorporating movement in the classroom contrast in some ways, both Sung and Nickelson obtained the same result of its integration: positive effects on students' learning.

Regardless of method of integration, the practice of implementing movement in the classroom produces benefits to learning in the form of improved academic skills. Both habits that are applicable to all subjects, such as focus and self-control, and domain specific skills like the understanding of geometric shapes and grammar within speech, are heightened as a result (Ogletree, 1997). Thus, movement-centered teaching techniques are beneficial to a successful learning process for elementary school students.

Social & Emotional Benefits

Some of the sources described social and emotional growth as results of incorporating movement-based teaching techniques into elementary school classrooms (Cohen, 2016; Ortega, 2017; Peck et al, 2005). David Cohen (2016), teacher of over twenty years, went into over 60 public schools in California to find out what these schools are doing to guarantee student success. One of the many questions that Cohen asks teachers centers on how they mix conventional and innovative teaching techniques, some of which are movement-based. The author gathered his information by going into the schools and observing the work that multiple teachers did (Cohen, 2016). He defined success by student growth and achievement as a result of instructional and classroom management choices (Cohen, 2016).

One of the teachers that Cohen observed used methods that are akin to the teachers mentioned in Stacey Skoning's article; the teacher Cohen refers to utilized dance, drama, and music to foster academic and social achievement (2016) (Skoning, 2010). To get students back into the flow of school and warm them up for the day, third grade teacher Jessica Montmorency Nisenbaum has students use their bodies and voices to make a machine for the other students to guess (Cohen, 2016). This gives students the chance to develop socially, as it encourages interaction among classmates, creating an optimal environment for academic achievement as a

result. Additionally, it serves as a precursor to the routine that students are familiar with, therefore functioning as a management technique as well. Dance is also prevalent in teachers' classrooms described by Skoning, though it is integrated into the heart of the lesson, instead of beforehand (2010). Both Nisenbaum and teachers interviewed by Skoning utilize contrasting artistic methods to integrate movement into their curricula, but both methods encourage student growth in social development.

Ortega describes social benefits for students through comparing teaching methodologies of the teachers she interviewed for her article. Both Sung and Nisenbaum weave music into their daily schedules to boost academic performance, though Nisenbaum differs slightly, because she purposefully incorporates music to improve students' social success (Cohen, 2016; Ortega, 2017). As noted earlier, stronger social skills in the classroom are an important element to academic success. Cohen affirms that the students in Nisenbaum's class are in an environment where they are provided opportunities to experience social and academic success (2016). Thus, teachers are free to implement artistic, movement-based practices in ways they see fit for the goals of their students, as seen by the differing choices made by the teachers that Skoning, Ortega, and Cohen describe. Moreover, this suggests that movement-centered teaching strategies increase students' social well-being, creating an environment where students receive ample support and therefore experience maximum academic success.

Yoga also produces positive results for students' emotional well-being, as described in a study examined for this project. The various poses that yoga implements encourage mental focus (Peck et al, 2005), a vital skill to have in order to be successful with academic tasks of any kind. A previous study that was orchestrated with the same purpose concluded that students' feelings of anxiety, lack of attention, and hyperactivity were minimized (Peck et al, 2005). Participating in yoga also minimizes feelings of anxiety (Peck et al, 2005). Additionally, yoga advocates for

the practice of self-control, which is helpful for all students, but especially for those who have attention, behavioral, or emotional issues (Peck et al, 2005). All of these habits are considered serious roadblocks to academic achievement, so reducing them creates more opportunities for students to experience academic success. Both past research on integrating yoga as an intervention, as well as the nature of the practice present advantages for students' academic skills as a result. This pertains even more for students who struggle to focus in the classroom.

Since the authors of this article conducted a study of their own to examine, an element of each study is the logistics of how the team went about their work. In his work, Earl Ogletree describes how eurythmy was applied in a Waldorf School, so this is comparable in the sense of how each author applied each movement technique (1997). The purpose of Peck and the research team's study was to investigate the success that a yoga program would have on focus in the classroom (Peck et al, 2005). For participants, the researchers had the school psychologist recruit first through third grade students whose teachers requested school psychology services because of attention problems (Peck et al, 2005). However, students still volunteered to participate in the study (Peck et al, 2005). None of the volunteers were diagnosed with ADHD, but all struggled with focus issues (Peck et al, 2005).

To gauge student achievement with the program, the research team had the students fill out a social validity questionnaire (Peck et al, 2005). Students answered questions about how they felt their focus in the classroom was after doing yoga, how much they enjoyed it, and the duration and frequency of the exercises they performed (Peck et al, 2005). Responses indicated that the students enjoyed participating in yoga; one student reported that she wanted to do it more than two times per week, as the study was designed (Peck et al, 2005). These responses show that yoga is capable of keeping the same students' attention, thus addressing and resolving the focus issue. Furthermore, heightened focus in students creates more opportunities for them to be

academically successful, therefore encouraging the implementation of yoga in schools to ensure student achievement. “Yoga as an Intervention for Children with Attention Problems” offers a unique research perspective to the vast knowledge pool on movement in the classroom, as there is not much existing research on implementing yoga programs in schools. There is still much more to learn about in terms of its integration, but it shows promise as a method of intervention.

Implications for Practice

Based on the findings of studies conducted on movement-centered teaching techniques and the benefits of incorporating these methods into the classroom, there are various implications for their utilization. Implications include specific examples of exercises to implement, along with rationale for their implementation as a result of associated benefits of the exercises. These types of beneficial exercises are mentioned by Helgeson and Dennison. In addition to specific activities and their corresponding advantages, there are implications for certain movement-centered methods to utilize.

Existing research implies that there are specific movement-based activities that would be beneficial for student learning. Suggestions include posting vocabulary words around the classroom; placing notes with important information related to a current task around the classroom; having students stand at their desks at the beginning of class during a warm-up and allow them to sit down after they answer a question correctly; and implementing a strategy called “Four Corners” (Helgeson, 2011). The fourth strategy is very similar to the first and third, as it requires four numbers to be set up in the four corners of the room (Helgeson, 2011). Uniquely, however, questions about a particular topic that have four separate answers must be prepared and written down, and students move to the corner that corresponds to the answer they picked and recorded (Helgeson, 2011). Helgeson’s article proves useful as a tool to refer to when in need of

specific activities for lessons that incorporate movement, and for becoming familiar with some of the research-proven rationale behind implementing movement techniques in the classroom.

Similar to Helgeson's work, Dennison describes the benefits of using movement in the classroom in his book. Teachers can utilize the aforementioned exercises in the classroom at any point during the day, and it lists the academic skills that are improved with each exercise (Dennison, 1989). The movements can be done within the confines of a classroom, since they do not require a large amount of space. Each activity comes with suggestions for implementation as well, similar to the suggested movement activities in Helgeson's article (Dennison, 1989; Helgeson, 2011). The benefits that Helgeson and Dennison describe, along with the specific exercises, suggest that specific movement-based activities should be implemented in schools to increase student achievement.

As described in Ortega's article by one of the teachers, music is another element that can be incorporated into movement in the classroom and yield academic advantages for students. Additionally, other teachers take advantage of this tool and weave it into techniques that also involve movement. Skoning describes how implementing creative movement and dance techniques are methods to make the learning process more meaningful, specifically for students who do not benefit from conventional teaching practices and for students in general (2010). Skoning's work shows that music-related movement activities, specifically ones that relate to dance and creative movement, boost student success and would thus yield positive results if implemented in classrooms.

Like Ortega and Helgeson, Skoning also refers to the findings of previous research in her article, and the benefits movement produced as a result. She states that researchers saw students' understanding, behavior, and overall attitude towards school improve in many of the situations where techniques involving dance were implemented, including the character dance described

earlier (Skoning, 2010). Strategies such as this also improve self-esteem, social skills, and expressing and controlling emotions (Skoning, 2010). Being able to interact with peers effectively, to manage emotions, and feeling more confident in oneself and one's abilities are all factors that contribute to a more impactful and thus successful learning experience. Previous studies on movement-based techniques, specifically ones that center on dance, suggest that said techniques improve social, emotional, and academic function, providing more rationale behind incorporating movement into schools.

Furthermore, Skoning also discusses the results from the implementation of movement in example classrooms. One classroom mentioned is a fourth and fifth grade class split, in a suburban elementary school from a north central state (Skoning, 2010). In this classroom, movement is shown to be a valuable technique for the inclusion of students of all backgrounds and skills; nine out of the twenty-seven students are labeled with having a disability of some sort, including learning disability, emotional or behavioral disability, cognitive disability, and autism (Skoning, 2010). Three other students in the classroom are English Language Learners. Issues seen in this classroom include problems with remembering the correct English word for something, and behavioral management for students who struggle to sit still at their desks (Skoning, 2010). To combat these problems, the teachers incorporate movement in effective ways. Students associate the specific movement used with a word or phrase and therefore are more likely to remember the information (Skoning, 2010). Students are more likely to experience better success in the classroom as a result, since they are more able to recall information that is needed for academic tasks in the classroom. Skoning implies that incorporating techniques with specific movements to remember vocabulary phrases will facilitate academic achievement for students.

Lastly, Skoning explains that teachers reported fewer behavioral problems as a result of this activity (2010). The activity teaches a diverse range of students in terms of backgrounds and abilities how to work together to establish goals, and how to work together successfully to then meet the agreed-upon goals (Skoning, 2010). As they meet their goals, students are more apt to experience success in the classroom. Additionally, students hone social skills by taking turns, resolving conflicts among peers, and solving problems related to the task (Skoning, 2010). Aforementioned benefits, both academic and social, suggest that strategies such as the one described by Skoning should be implemented in schools to ensure student success.

David Cohen observed another teacher utilize a movement-based strategy while conducting a lesson outside, therefore giving the students the chance to move and learn simultaneously in a more open environment (2016). This technique is not described by Ortega, Helgeson, Dennison, or Skoning; it is unique to Cohen's work. When working with fifth-grade teacher Camie Walker, Cohen observed that she lets her students participate in a game similar to tag while also educating them on environmental science; each student is either an animal of some sort, or a basic need like water, food, or shelter (2016). The groups, separated animals and needs, are sent towards one another to try and "live", and they later reflect on what ecological lessons they learned from the activity (Cohen, 2016). In this particular activity, Walker incorporates movement in a meaningful way that connects to the content, and grabs students' attention. Making the movement significant to the lesson is also a helpful management decision, since it has a purpose and lowers the possibility of becoming a distraction as a result. *Capturing the Spark* is a valuable resource for finding instructional and management techniques that have been observed and approved by an experienced, reputable educator. Cohen's observation provides another specific method of movement integration for schools to consider for maximizing student success, specifically by improving student focus and classroom management.

One of the goals of this project was to uncover knowledge of the benefits of incorporating movement breaks into lessons. The selected literature poses various implications for the connection between utilizing movement breaks and student achievement. Sarah Benes (2016) and a team of researchers conducted a study on teachers' attitudes towards incorporating movement in the classroom; all of the teachers interviewed reported that they use movement as a way to refocus students, or when they feel that they need to give stronger support to the objectives being taught. One of the teachers specifically stated that students become more fidgety and zone out if they do not get adequate time to move around, resulting in more behavioral issues (Benes, 2016). Benes' article implies that movement breaks are an effective solution for behavioral issues and difficulties with focusing. Such benefits foster the conditions for a positive learning experience as a result and encourage the implementation of movement-based strategies in schools.

Other research suggests similar benefits to incorporating movement as well. Helgeson implies that incorporating breaks into lessons increases student focus, and minimizes feelings of anxiety (2011). He explains that students experience a multitude of emotions throughout the day, and then goes on to claim that incorporating exercise into lessons can give students something else to focus on, rather than their current state of mind, or whatever experiences they are going through (Helgeson, 2011). Incorporating movement as a break from a lesson can also supply students with a release from any tension evident during a prolonged period spent on task (Helgeson, 2011). This physical release makes students more relaxed and thus increases their likelihood to focus when they return to a task. Research therefore implies that scheduling movement breaks into lessons increases student achievement, providing educators with more rationale to implement movement-based strategies.

In addition to the implications that existing research presents, the recently revised professional standards for educators calls to the professional responsibility of educators to implement movement and play in classrooms. The Michigan Department of Education (2018) connects the standards to specific skills associated with professionalism, including abilities such as Learner-Centered Supports, Ethics and Professional Supports, and Strategic Supports. A standard defined as part of the Learner-Supported heading claims that beginning educators who are adequately prepared for the profession should have the ability to “Demonstrate knowledge and application of research-based instructional strategies to support the whole child’s development through movement and physical activity” (Michigan Department of Education, 2018). The new Michigan Standards thus define incorporating movement as a professional obligation of teachers and support the push for implementing it in schools.

Both existing research and the newly modified Michigan Standards present various implications for the practice of implementing movement-based strategies in elementary schools. The standards reveal that incorporating movement in teaching is a professional responsibility, while previous research suggests specific methods of implementation because of the benefits they pose for student achievement. Regardless of the implication suggested, all speak to the point that movement is needed in elementary classrooms.

Critiques of Implementing Movement

Although there is much support for implementing movement into classrooms, there are various critiques towards its implementation in schools. Some teachers explain barriers that they experience when trying to incorporate movement into lessons, regardless of their strong support towards its inclusion. Pamela Nickelson describes a pressure to keep children sitting in silence rather than moving around, because of a large emphasis on standardized test scores (Ortega,

2017). Thus, a greater desire to produce quality test scores creates a potential barrier towards incorporating movement into schools, no matter how much the teacher may encourage its implementation.

Nickelson is not the only teacher who described certain barriers to incorporating movement in lessons. Tan Leng Goh (2017) and her research team conducted a study to investigate educators' attitudes towards including movement in lessons and discovered patterns in what the teachers in question reported. There were four main barriers that the team categorized. They are classroom teachers' experiences implementing a movement integration program, barriers, facilitators, and continuance (Goh et al, 2017). Obstacles fell under the following categories: space constraints, time constraints, educators' perceptions of student opposition to the program, and an inability of students to be simultaneously involved in physical activity and an academic lesson (Goh et al, 2017). Both Goh's research and Ortega's article reveal that although there is much support for movement in schools, there are still obstacles that educators face when incorporating movement into lessons, adding critiques to the matter.

Furthermore, there are concerns about particular teaching methods that incorporate movement. This holds true for the practice of eurythmy; even though there are shown benefits to incorporating this technique in schools, some concerns about its implementation remain. One such concern lies with eurythmic theories on human development, as they can be viewed as unconventional; they offer obscure suggestions for medicine, psychology, and education (Ogletree, 1997). Ogletree attempts to address said concerns by sharing a statement that he believes best summarizes Eurythmy, and the theory surrounding it (1997). The statement claims that any person who rejects the possibility that a thought or idea outside of his or her understanding exists, because it does not fit with his or her current beliefs, has roughly the same credibility as someone who believes everything without giving anything a second thought

(Ogletree, 1997). A statement like this may raise concerns about implementing eurythmy in schools, as its connection to human development and learning in general is quite vague. The author acknowledges this shortcoming, although he does not refute it. This may be due to the limited extent of the article, which Ogletree makes mention of earlier on in the piece (1997). He explains that because the scope of the work does not span very far, he was unable to provide a lengthy description of eurythmic integration at each grade level (Ogletree, 1997).

In terms of the merit of Ogletree's article, the piece adds a unique perspective to research on movement in the classroom. It also provides valuable information on a less common approach to utilizing movement in schools, including academic and physical benefits, and examples of its implementation. However, the article's limitations leave many questions about eurythmy unanswered. The descriptive report therefore presents value for anyone who wants to know the basics of eurythmy, and ways for teachers to incorporate it into the classroom, though not for the complete acceptance of eurythmy in schools. In regard to vague human development theories tied to the practice, this issue does not alter the effectiveness of the method on student achievement. The health benefits of the practice remain. Thus, support of this movement-based technique does not change. Overall, critiques of the implementation of movement remain valid, but existing solutions to barriers mentioned by critics leave its incorporation a feasible matter.

While the aforementioned concerns about movement hold validity, there are solutions that exist to minimize them, making the implementation of movement into classrooms achievable. Goh and her research team offer solutions to eliminating the barriers described in their piece. To solve the issue of space constraints, they suggest modifying activities to fit the available space, an adaptation done by the participants of the study (Goh et al, 2017). Another modification taken by the teachers was moving to more open areas of the classroom, allowing ample space to conduct the activities (Goh et al, 2017). The suggestion regarding students'

inability to perform movement and complete an academic task simultaneously is to include lessons that incorporate movement, and lessons that do not incorporate movement (Goh et al, 2017). This considers a range of abilities and thus gives students more freedom to do what they are able to do, while still implementing movement in lessons.

The researchers also pose ideas for minimizing time constraints. They recommend that teachers mark specific chunks of time in their weekly schedules for movement, as was done in their study; the teachers who participated in the study reported that blocking off specific times to incorporate movement helped continue the movement program utilized for the study (Goh et al, 2017). Lastly, to reduce teachers' perception of student opposition to the program, a potential solution is parallel to the issue of performing movements simultaneously with an academic task (Goh et al, 2017). According to the teachers who participated in the study, part of the issue concerning student resistance was the fact that some students were unable to perform the movements because of health issues (Goh et al, 2017). Offering a version of the same lesson without the associated movement may help eliminate opposition to the activity, since it tailors to a variety of abilities, and may minimize a sense of obligation for students as a result. While educators report a variety of obstacles to implementing movement into lessons, there are solutions that exist to minimize these obstacles, making the incorporation of movement-centered methods of teaching feasible.

Additionally, existing concerns about the implementation of movement in schools do not necessarily prevent teachers from incorporating it into classrooms altogether. Regardless of the fact that Pamela Nickelson worries over producing quality standardized test scores, her strong belief of how important her work is remains (Ortega, 2017). She realizes that she makes an impact on students' lives by incorporating the *Brain Gym* exercises, and that is what motivates her to include these exercises (Ortega, 2017). Even though there are obstacles that may affect the

incorporation of movement in the classroom, particularly pressure to focus on other matters, Nickelson's confidence in her work outweighs them and ultimately results in a more engaging, successful learning experience for students. The payoff is therefore more important than existing concerns about other matters, specifically standardized test scores, supporting the implementation of movement in classrooms.

Conclusion

While investigating the use of movement as a teaching method in elementary school classrooms, I analyzed a wide breadth of literature that encompassed a variety of research on implementing movement. My analysis led me to determine themes from commonalities that I drew among sources. Through my research, I was able to achieve my goal of uncovering information about the positive benefits of incorporating movement into elementary classrooms. The literature offered various implications for which strategies to best incorporate into schools. Additionally, the recently revised professional standards speak to an obligation for teachers to implement movement and play into classrooms.

Even though there is a substantial amount of support for implementing movement into schools, my research also revealed that there is still more to be discovered on the topic. More research is needed to obtain a clearer understanding of movement-centered methods with unorthodox theories, and to get a more definite understanding of the effects of implementing certain strategies. Regardless, existing research continuously speaks to the benefits of incorporating movement into schools. As a pre-service educator, I look forward to experimenting with movement-based strategies in my own classroom, and I hope that those currently in the field respond accordingly to this professional responsibility.

References

- Benes, S., Finn, K.E., Sullivan, E.C., & Yan, Z. (2016). Teachers' Perceptions of Using Movement in the Classroom. *The Physical Educator*, 73, 110-135.
<http://dx.doi.org/10.18666/TPE-2016-V73-I1-5316>
- Cohen, D. (2016, January). *Capturing the Spark: Inspired teaching, thriving schools*. Palo Alto, CA: Enactive Publishing.
- Dennison, P.E. & Dennison, G.E. (1989). *Brain Gym: Teacher's Edition Revised*. Ventura, CA: Edu-Kinesthetics.
- Goh, T.L., Hannon, J.C., Webster, C.A., Podlog, L. (2017). Classroom teachers' experiences implementing a movement integration program: Barriers, facilitators, and continuance. *Teaching and Teacher Education* 66, 88-95. Retrieved from https://ac.els-cdn.com/S0742051X17305929/1-s2.0-S0742051X17305929-main.pdf?_tid=b65aa4f2-f0aa-11e7-a4da-00000aab0f26&acdnat=1515000345_db8dfd9392ff6a8a3ea1eb5c3ad77945
- Helgeson, J. (2011). 4 Simple Ways to Add Movement in Daily Lessons. *Kappa Delta Pi Record* 47(2), 80-84. <https://search-proquest-com.huaryu.kl.oakland.edu/docview/870283443?accountid=12924>
- Michigan Department of Education (2018). Standards for the Preparation of Teachers of Upper Elementary (3-6) Education. *Michigan Department of Education Memo*. Retrieved from https://www.michigan.gov/documents/mde/Upper_Elementary_3-6_Education_Preparation_Standards_636731_7.pdf
- Ogletree, E. J. (1997). Eurythmy in the waldorf schools. *Educational Resources Information Center*. Retrieved from <https://search-proquest-com.huaryu.kl.oakland.edu/docview/62624200?accountid=12924>

- Ortega, B. (2017, February). Changing lives with music and movement. *MEA Voice*. Retrieved from <https://mea.org/changing-lives-with-music-and-movement/>
- Peck, H. L., Kehle, T.J., Bray, M. A., Theodore, & L.A. (2005). Yoga as an Intervention for Children with Attention Problems. *School Psychology Review*, 34(3), 415-424.
<https://search-proquest-com.huaryu.kl.oakland.edu/docview/61928202?accountid=12924>
- Skoning, S. (2010). Dancing the Curriculum. *Kappa Delta Pi Record*, 46(4), 170-174. Retrieved from <https://search-proquest-com.huaryu.kl.oakland.edu/docview/762466634?accountid=12924>
- Wilson, D. (2014, March 12). Move your body, grow your brain [Web blog post]. Retrieved from <https://www.edutopia.org/blog/move-body-grow-brain-donna-wilson>