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Physical Activity and Fitness in 21st Century Education

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A Literature Review Presented

in Partial Fulfillment of the Requirements

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Abstract

The broad issue examined in this literature review covers the importance of physical education and fitness in 21st-century education and how to motivate kids to be more active. Physical activity is defined as any movement that requires the skeletal muscles to function to create energy to be used (WHO, 20201). In education movement and energy is vital to the human body, its muscles, and their functions. For a skeletal muscle to function, energy needs to be produced. That energy comes from the oxygen (O₂) that we inspire and the carbon dioxide (CO₂) we expire. To inspire and expire we need a well-functioning heart that beats and produces blood to carry to our muscles and cells. The human body is a complex working machine; when fed well and forced to produce energy every day, it can typically function for a very long and healthy life.

Keywords: Evidence- based practices, differentiated age and developmentally appropriate instruction, safe learning environments.

Physical Activity and Fitness in 21st Century Education

Schools tend to prioritize subject areas assessed on standardized tests in the state of Connecticut tests such as the SATs and ACT, determine, depending on the score, how likely it is for a student to be accepted into a college or post-graduate program. The SAT and ACT tests assess core areas such as reading, writing, and math. Physical education and health are neglected in schools, which is problematic leading to other major problems such as weight gain and a decrease in self-efficacy. Students who don't know the right foods to put in their bodies or who inadequately maintain a healthy level of movement will not live a long and healthy life.

Physical activity, exercise, diet, and sport are the quintessential keys to decreasing the overweight and obese population (Payne, 2011). Overweight is considered a body fat percentage of anywhere between 25-29% body fat. In Connecticut, according to the CDC, over 65% of all people above the age of 18 are now overweight or obese. (CDC). After the age of 28, that number increases to 80%. When these keys aren't in place, individuals become overweight. Education can no longer focus primarily on reading, writing, and math. The skills it takes to become a successful teammate, active member in sports, and positive member of society need to start being assessed in school because the skills taught in physical education are critical to life health and success.

The purpose of this review is to demonstrate the significant role physical activity, exercise, diet, and sport play in a student's health and wellness and how those elements affect student achievement. Within the last 10 years, evidence shows how a focus on physical and mental health affects achievement in the classroom (Graham,2020). Every aspect of learning can be positively affected in a child's life by prioritizing activity and a healthy diet.

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Research for this paper was drawn from the ERIC (Education Resources Information Center) database, the WorldCat discovery tool through DeWitt Library, and Google Scholar. All research in this literature review occurs 2010 and 2021 and is appropriate in making this paper valid and reliable. In addition, the research studies demonstrate reliability, critical thinking, and significance as they relate to the research statement.

In the text *Motor Development*, George Graham 2020 describes how physical activity increases cognition and the ability to focus and concentrate in both low and high anxiety environments. In addition, increased activity allows the body to decrease its energy expenditure through low to moderate activities. Maintaining a healthy lifestyle and engaging in proper dieting and health resources can strongly encourage the body's immune response system and help it battle illness and disease faster and at a quicker rate. This literature review explores the fundamentals of movement and how making appropriate choices can strongly impact students' lives in and outside of the classroom.

This literature review discusses developmentally appropriate practices, safe and positive learning environments, technology usage in P.E, health benefits to physical activity, and health related fitness. The conclusion will summarize the findings, suggesting ways to improve our educational practice.

Literature Review

Developmentally Appropriate Education

Sedentary lifestyles contribute to a variety of school problems. A child is sedentary for 80% of their learning day (Graham, 2020). Sedentary behavior is defined as “any waking behavior such as sitting or leaning with an energy expenditure of 1.5 metabolic equivalent tasks or less” (Park, 2020, P. 29). The main example of being sedentary is sitting, which students do

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for roughly 75 -80% of the school day. Besides the 45-50 minutes a child typically gets for physical education class and the one-to-two minutes of transition time between each class, students do not get exposed to enough physical activity throughout their learning day.

Americans do not get more active as they get older. The Center for Disease Control (2021) suggests that “now at least 33% of all humans over the age of 15 are engaging in sedentary lifestyles.” This percentage has risen in the past five years, suggesting that as sedentary lifestyles increase, overweight and obesity rates do as well (CDC, 2021). Not allowing muscles to be minimally strongly strained detracts a human’s life. Reasons such as lack of availability, increased office jobs, and popular television shows being played are the major reasons the average student has increased in sedentary behaviors (a 35% increase from 50 years ago).

A sedentary lifestyle comes with risks, often leading to many chronic illnesses (Park, 2020). Physical pain such as back pain, pain around the ankles, knees, hips, and joint pain can arise sooner for a person with a sedentary lifestyle compared to a moderately active individual (Graham, 2020). Those who live sedentary lifestyles acquired more pain and long-term illnesses than those who were active. However, activity in schools has not increased, and the number of overweight and obese children continues to increase (Graham, 2020).

Physical education programs attempt to foster physical activity, but those strategies can sometimes have the opposite effect. In the elementary/middle school setting, competition can maximize the acquisition of knowledge and skills. On the other hand, it can detract from learning. Indirect and direct competition can have negative consequences on students at the elementary and middle school level (Graham et al., 2020). Graham et al. (2020) shows how teachers have incorrectly used competition to develop students' motor skills. However, results show that when open skills are introduced to students who are still at pre-control and control skill proficiency student achievement and success decrease. As a result, children's skills and motor development stayed the same and did not improve (Graham et. al.,

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2020). When an external stimulus is introduced to students who still need closed environments and no stimuli to improve their performance, students' skill development suffers. Graham's research found that competition being introduced at the elementary and middle school level is one of the primary reasons students do not continue physical activity and sport. According to Graham, students do not need competition in order to progress: "[T]he generic levels of skill proficiency are the tools and strategies that were used on 500 elementary school students to encourage physical activity and movement" (Graham, et.al., 2020). These proficiencies proved that developing skills in more closed environments encouraged students to engage in more physical activity.

García-Hermoso (2021) looked at the interventions that take place to have a quality physical education program. The study looked at the performance of adolescent children in a middle school. The assessment was based on the generic levels of a skill proficiency framework. The beginning scores for the students were at the pre-control level, which was below grade level. The study looked at changing the strategies and interventions to improve the overall program. The school and teacher's goals and teaching strategies were developed through professional learning opportunities and instructional coaching. The interventions that took place included planning and classroom management strategies. As in Graham et al.'s (2020) study, the student results increased tremendously. Of all students tested, 70% increase from the control phase to the utilization acquisition and grade-level standard. The research showed that when an educator took the necessary interventions and practices increase, overall achievement and success increase as well. This study connects to Graham et al.'s research in that when students find success throughout multiple domains within a class, they are more likely to engage in that activity. When students engage in movement outside of physical education class, habits begin to form, and positive lifestyle changes can occur.

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Instructional coaching has been shown effective in other studies. Knight 2014 found that providing coaches for teachers increases student performance. Knight outlines numerous studies in which educators see coaches demonstrate their strategies. In a particular study, he looks at a middle school system comprised of five math teachers. Each math teacher is given one coaching session a week for two months to improve their teaching strategies. Teachers noticed that “their student achievement increased by more than 15-20%” (Knight, 2014). When educators are coached to make lessons meaningful and engaging, student learning increases.

Improving educators’ teaching strategies so that engagement is increased helps promote learning. Promoting student engagement in physical education courses leads to increased learning and increased activity time (Graham, 2020; Knight, 2014). According to Graham et al. (2020), “The more meaningful and engaging instruction is, the greater achievement you will see” (pg. 45).

Creating mindful strategies and habits as the coach can lead to more success in the classroom. In *The Coaching Habit*, Stanier (2016) shows how seven different types of questions can help build teacher efficiency and increase student activity. This research featured 110 physical education teachers from around the country who, with the help of the author's strategies as a guide, became more reflective in their practice. They implemented these questions and strategies in their practice while ending their current strategies. As a result of their consistent efforts to implement these strategies, “students were scoring higher on summative assessments by 15%” (Stanier & Kauschke, 2018).

The research performed by Stanier (2018) connects implementing more effective educational practices to increased learning and performance. For one, students must want to

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engage in inactivity. The past research studies have shown that when students are engaged in a learning process that's meaningful, achievement and success increases (Stanier & Kauschke, 2018).

The research study described by Dr. Greg Payne in his text *Motor Development* shows that students do seem to be motivated by improvement or perceived success. Researchers took thousands of children from grades K-2 and studied their developmental patterns. This was collected based on the skill proficiency observed through grading criteria on a 1-4 scale. Because children develop at different rates, Payne & Isaac (2020) find that “focusing on the process approach develops children to fundamentally be stronger which allows them to experience more success” (p.44). This research recognizes that success leads to increased movement and activity amongst students and learners. When students are successful, they want to engage in more activities that allow them to experience that success.

The experience students have in physical education classes seems to affect their activity level going forward. Graham et al.'s (2020) research shows that in the last 20 years of decreased activity, one of the reasons is due to poor physical education class experiences. A physical educator should plan lessons that motivate a child to want to engage in physical activity, exercise, diet, or sport outside of school. Graham et al.'s (2020) work has opened educators to reasons why the activity rates have decreased drastically, and overweight and obesity rates have increased.

Rosenkranz (2021) studied the influence PE teaching strategies have on student participation in class. His studies featured classrooms in Australia where he measured the relevance, participation, and authenticity of lessons throughout physical education classrooms.

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The results of his findings help all educators understand the significance behind meaningful lessons. The research demonstrated that a focus on teaching strategies and educational purposes increases students' motivation in physical activity (Rosenkranz, 2021).

Both Rosenkranz (2021) and Graham (2020) call for differentiating instruction to meet the needs of students. Since not all students grow and develop at the same rate or learn the same way, instruction needs to be diverse and modified. One of the reasons why students don't have particularly good experiences in PE is because they were not offered different pathways to success (Graham, 2020). When materials are given to students in many ways to receive them, learning increases.

Addy (2012) describes the importance physical activity has in a student's routine. They compared 500 participants who engaged in physical activity versus 500 who did not. The "active" participants were asked to implement 15-30 minutes of activity a day in the lab. Those who engaged in physical activity had lower blood pressure, lower resting heart rate, increased focus and concentration, and deeper sleep (Addy, 2012).

By synthesizing the literature, many connections are made between activity and classroom performance. Activity shows that students who engage in just 15-30 minutes of activity per day get more rest and can retain more information in classes (CDC). One of the key aspects recognized by exercise physiologist Jeff Cavalier (2019) examines how students who can better focus and concentrate in classes attain higher classroom grades than those who cannot. Addy (2012) not only shows that physical activity is important but also how it relates to students' success in and outside the classroom.

Safe and Positive Learning Environments

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Researcher Erla Svansdottir looked at how physical and emotional health affects the student dropout rate. Svansdottir studied children from Iceland that were age 15, and then followed up at age 23. The initial research showed that those students who were healthier based on a survey and an assessment were less likely to drop out of school (Svansdottir, 2011). Those students who did not score high on the health and physical survey and assessment were more likely to miss days in school and more likely to not graduate (Importance of Physical Health, 2021). The results demonstrate a hard inquiry for increased activity time within and outside of schools so that graduation rates increase and absenteeism decreases (Importance of., 2021).

In this research, the author examines the issues within physical education class. She discovers that when a teacher assigns students roles that do not necessarily involve movement, the students still succeed and enjoy physical education (Marta, 2019). Marta recognizes that physical education means targeting the whole child. This research demonstrates that the three domains of learning help meet the needs of all learners. The three domains of learning include the cognitive, affective, and psychomotor domains. When the students are shown instruction in different domains, achievement increases (Marta, 2019). Marta et al. adds to Graham's (2020) work of modifying lessons and to Knight's (2014) research of increasing teaching strategies to meet the needs of all learners.

Triaca (2019) discusses the role gender and identity play in the classroom, particularly in physical education class. This research studied the effect of attending physical education classes on mental health topics such as loneliness and anxiety. The research showed that amongst boys and girls, experiences of loneliness and anxiety increased when students chose their own teams or when elimination games were being played. Being picked last for teams or elimination games are activities that show negative results (Graham et.al., 2020). Elimination games are always

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age- and developmentally inappropriate (Graham, et. al, 2020). When a teacher allows “captains” or students to choose teams, there are always students that will be chosen last. When students are chosen last, they tend to have a negative outlook on physical education and are more likely to not engage in activity outside of class.

When students engage in activities in which students are eliminated, those who may not demonstrate readiness or appropriate level of proficiency are always eliminated first. In addition, boys tend to choose boys, leaving girls to be chosen last. Relatedly, physiologically stronger boys tend to overpower the girls in class. This type of planning by a physical educator disregards recommendations to make learning accessible and modified to meet the needs of all learners (Marta, 2014).

Young’s (2016) research demonstrates the connection between safe and positive learning environments and positive learning experiences. His research studies how safe spaces for all students impact their behavior and their overall growth and development in that class. The study looked at 77 student essays written throughout a school year, from their first impression of a class (on the first day) to their experiences throughout the semester. The research showed that errors in planning and concise classroom routines, lead to negative learning experiences and unhealthy essay writing experiences (Young, 2016). Students with teachers who focused on a positive learning environment that allowed students to understand the classroom rules, routines, and expectations comfortably and clearly tended to write positive essays. The connection between safe learning environments and positive learning experiences is strongly correlated.

Young (2016)’s research connects to Svansdottir study about factors affecting drop-out rates and absenteeism. When students do not feel comfortable in a learning environment,

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tardiness, absenteeism, and ultimately graduation rates decrease. This research connects to Young's because the research demonstrated an increase in activity, achievement, and the social and emotional well-being of the learner. When educators connect all these items, learning increases, and students are more likely to have safe experiences in class. A physical educator can take advantage of improving health and physical activity rates by prioritizing a safe learning environment (Young, 2016).

In a similar vein, Smith (2011) shows how students tend to excel and demonstrate behavioral expectations more often in an environment that is safe and responsive. This study looked at an urban school setting in which crime rate, fights, and abuse were at an all-time high. As a result, the administrative team and instructional coaches recognized that students were not able to prosper under vulnerable conditions (Smith, 2011). Smith's research also showed an increase in student tardiness and a decrease in student achievement (Smith, 2011). When students do not feel safe in their environment, they fall behind and achievement decreases (Smith, 2011). This finding connects to Young et al. (2016) and Svansdottir (2016, 2011) because they all mention how safe learning environments encourage students to increase practice outside of the learning environment. Smith's (2011) research showed that because of an unsafe learning environment, academic success decreased tremendously.

Learning environments are vital to achievement in a classroom. Liz Wiseman's book *Multipliers* examines leadership in safe learning environments. In this study, groups of administrators worked on changing their approach to leading. Wiseman defines multipliers as people who spark participation in other students and problems get solved collaboratively (Wiseman, 2017). When leaders come into the room with the mindset of multiplying more leaders, collaborative advances are made. In the studies of Wiseman (2017) and Smith (2011),

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the school setting did not feel safe for students, leading to decreased achievement and success. This concern directly affects physical education because PE class is a vulnerable place for students to demonstrate learning.

In a research study in California, active listening was studied amongst a group of educators looking to build positive relationships with students. Active listening is the ability to listen and speak effectively so that both parties have been acknowledged and fully responsible (*Use of Active listening, 2021*). Active listening is a skill teachers use to build relationships with students in the classroom, a skill that helps build a safe space for all students. In this study, surveys were given to each student throughout the year. The students rated the effective listening skills of each of their teachers. The results of the experiment showed that students felt safer in an environment in which they rated their teacher with effective listening skills (*Use of Active Listening, 2021*).

The active listening research study contributes to the research about building a safe space and environment for everyone. As stated above, physical education is a place where the students demonstrate learning in front of their peers in a movement environment. The PE environment is much more vulnerable to judgment than any other classroom (Graham, 2021). As physical educators plan for instruction, they need to keep a safe classroom environment at the forefront of their practice. When students feel safe in the space you give them, not only does achievement increase but students recognize the skills and attributes that make a master teacher. Research shows that learning and activity increased as a result of a safe learning environment (*Use of Active Listening 2021*).

Technology as a Physical Education Tool

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In his book *Naturalizing Digital Immigrants*, Wilson (2015) shows how technology can have an impact on student learning and achievement. Wilson looks at a Texas school system in which teachers did not consider technology as an impactful learning tool even though technology is the next major focus area for teaching and learning in 21st-century education. Wilson examines how the slow implementation of technological tools and frameworks can help shape a productive and successful learning unit. In this research study, the author looked at an entire school district that employed five new instructional coaches who focused on technology (Wilson, 2015). These coaches were able to travel to all the different schools to help teachers implement the technology model that best suited their teaching. The research took three years; however, over that span impressive results were realized. Those teachers who added technology increased their students' learning by 15% more than those teachers who stuck to "this is the way I've always done it." The results also showed that teaching and learning adapted more to meet the needs of learners when technology was part of the learning process.

Morgan (2013) looked at elementary school students who are presented with different types of technology projects. Participation in video-based learning showed that students not only were able to see themselves or their partner visually, but also worked on giving appropriate feedback. In one particular study he demonstrates technology usage in physical education class to increase learning. His results show that not only did 90% of students show an increase in learning, but technology can also be used to target different learning domains (Morgan, 2013). Graham (2020), Payne (2011), and Morgan (2013) all agree that when teachers target different learning domains, the student is more likely to participate and engage in activity. When activity rates increase within a school system and district, achievement increases, and many physiological changes occur as well.

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Raney studied students in an anatomy and physiology course in which Ipads were being used. The study looked at 166 students and the impact Ipads had on their learning, success, and achievement, comparing students who had access to Ipads during learning to those who had slight to no access. The result of the experiment showed that those learners who had full access to Ipads during the course had a more “enhanced learning” experience (Raney, 2016). Their responses declared that the use of technology allowed them to learn in multiple ways. Technology allowed the instruction and material to be modified in ways that other instruction methods did not.

Health Benefits of Increased Activity

Evidence of regular physical activity at the primary and secondary level show prevention of several chronic diseases (e.g., cardiovascular disease, diabetes, cancer, hypertension, obesity, depression, and osteoporosis) and premature death (Warburton, D. E. R., et al.; Bredin, S. S. D. (2006). Oldervik demonstrates the healthy benefits increased activity can have on students in and outside the classroom. Researchers studied 88 10th-grade students (41 boys and 47 girls) and their mastery of learning, overall well-being, and happiness after increased physical activity throughout a semester of school. The cross-over study gave students questionnaires and surveys to analyze results. The students’ responses leaned clearly in one direction. The overall happiness they rated was much higher as a result of minimally increasing activity per day. Students recognized that their cognition and focus improved throughout the day. The students proclaimed that they were sleeping better and were able to wake up easier than before the experiment.

Another benefit of physical activity is the bonding to other human beings. Juan looked at the effects activity has on building relationships and connections with others. The study group

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consisted of 363 students (227 boys and 136 girls), aged between 12 and 16. The results showed that because of the increase in activity by students, their ability to communicate with others increased. Because students felt more rested and had higher cognition, they felt more open to building new relationships and making new friends. This study suggests that teachers' planning should be focused on building connections through movement and activity.

At the beginning of this review, Graham (2020) demonstrated that most students and adults who had poor experiences in physical education class were the victims of poor planning and activities that could not be modified. Students did not feel safe and comfortable in the learning environment, making students not want to engage in activity during or after class. However, the past two research articles (Warburton, (2006) demonstrate that when activity is increased, connections increase, as well as overall human physiological functions.

The educator's perspective of PE has a significant role in health and physical education promotion throughout a district and school (Alexandra et al., 2021). Alexandra et al. show the barriers in motivating students to engage in more physical activity. Today's education involves 80% of the student day in sedentary behaviors (Alexandra, 2021). The study also demonstrates that lack of confidence was the greatest factor when trying to encourage students to engage in more activity.

Health-Related Fitness

Ferkel (2019) demonstrates the significance a quality health-related fitness and education program has on a school and district. The authors studied 277 students in grades 9 and 10. The authors assessed students' knowledge in physical education and a health-related fitness classroom; the questionnaires and surveys demonstrated a level of knowledge from each type of

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physical fitness class. Throughout the semester certain principles and items were introduced in the health-related fitness class that weren't in the physical education class. As a result of the study, students were more likely to participate in activity, exercise, diet, and sport after the health-related fitness class than the physical education (Ferkel,2019). In addition, although both classes demonstrated learning in multiple different domains, students scored better in the health-related fitness class than the physical education class. The author explained that the students' learning was more authentic in the health-related class than in the P.E classroom. As a result of the more authentic education, students gravitated more toward the health-related fitness class.

Heo (2014) looks at the effects of developing a strong core in physical education class. The research looked at 52 school-aged children aged 10-11 in which core activities were implemented into the classroom instruction each day. The activities were centered around the instant activity and introduction/warmup section of each class. The study showed that due to an increase in core exercises, the students' core muscles got stronger. As a result, their performance increased in regular daily activities according to their survey results (Chun, Effects 2014). Activities of daily living such as lifting items, running faster, and having better balance also increased (Chun, Effects 2014).

Physical activity can also affect self-confidence and motivation. Bennie (2012) looked at school-aged children who revealed through surveys that their self-esteem and motivation to want to be active was extremely low. The study demonstrated that for these students, an increase of 20-30 minutes per day increased their self-esteem and motivation (Bennie, 2012). When people engage in physical activity, the release of endorphins gets streamlined throughout the brain and blood. In addition, serotonin levels in the brain increase, increasing happiness (American Psychological Association 2020). When an everyday student increases their activity by just 20-

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30 minutes a day, numerous physiological changes occur (Bennie, 2012). Pleasure senses and responses increase, and activities of daily living become easier.

Based on his study, Dolati concluded that physical activity, exercise, diet, and sport have to be a priority in schools. His research studied graduate school students who had physical education classes twice a week as part of a semester-long course. His study looked at how physical activity can affect overweight + obesity, and if activity was needed for students in class only. For a dramatic change in internal and physiological changes to occur, the student needed to participate in a minimum of 20 minutes of activity outside the classroom environment (Dolati, 2020).

Dolati and other researchers featured in this review would agree that physical educators need one main vision: to motivate students to want to engage in physical activity, exercise, healthy diet, and sport outside the classroom (Dolati, 2020). This also discusses the importance of physical activity as a lifelong practice. He compares the promotion of physical activity to people who constantly try new diets. Diets don't work unless they are made a practice (Addy, 2020). Similarly, for true change, growth, and development, physical education and activity has to be a part of a student's life.

Innerd (2019) shows that implementing a little physical activity in each class throughout the day will not negatively affect instruction and can increase the health of a student. Her study consisted of 152 students who received an eight-week, classroom-based intervention with heart monitors (Innerd, 2019). The instruction consisted of a 10-minute physical activity section within each class. The control group in the experiment did not receive the 10-minute per lesson physical activity. The results were positive, recording lower resting heart rates for those not in the control

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group. The 10 minutes per class per day research had a positive physiological effect on students' bodies that the control group did not demonstrate.

Starkey researched high school students with activity incorporated in their regular classrooms. The over 500 students at St. Ives High School were examined throughout a year-long goal to increase health and well-being. By implementing just 5-10 minutes of movement throughout each class period, the overall level of fitness increased significantly. These results compare that of Innerd (2019) because both were able to show that activity or movement when strategically implemented throughout a class can have a positive effect on the whole child.

The International Journal of Public Health looked at the role physical activity played with cognitive function. The experiment tested 75 scientists and 15 non-scientists on the effects physical activity had on cognitive function. Of all scientists surveyed, 95% explained that an increased function and achievement can be directly related to an increase in physical activity. While this research suggests positive connectivity, Brymer (2016) looked at the countries located in the UK for the last 25 years. His research demonstrates that a lack of physical activity, movement, or exercise has been one of the leading causes of death in the UK. Nearly 3.2 million people a year die due to health conditions resulting from a sedentary lifestyle. Brymer (2016) suggests that physical education would be the "miracle cure."

Conclusion

Each year the Department of Health and World Health Organization posts a health census that provides the country with health statistics. Over the last five years, sedentary lifestyles, overweight and obesity numbers have increased, movement has decreased, and the average life

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expectancy has slowly decreased. Fortunately, there is evidence that improved physical education can have a positive effect on activity levels.

The effects activity and movement have on the whole child are clear and compelling. For students to want to participate in movement outside of class, educators need to look at their teaching strategies and lesson plans first. Physical education teachers need to provide activities that not only meet a wide variety of learners but also are age- and developmentally appropriate. When students find success in what they are doing, they will be more likely to continue pursuing that area.

Technology can be a major steppingstone for physical educators to get students to increase their movement and activity. PE students can use Ipad to videotape themselves in group/partner work. Afterward, they can help each other succeed by giving feedback related to the cues and demonstrating their mastery in all three learning domains. In addition, technology can be used to assess, give surveys, videotape, instruct, and provide modifications to lesson activities. When technology is appropriately integrated throughout the classroom, its powers are endless (Payne, 2011).

From this literature review, it is clear that the physiological changes that can occur as a direct result of the increased activity are pivotal for our students. An activity increase of just 10% can decrease resting heart rate, increase cognition and memory, lead to deeper sleep, increase energy, and maximize performance throughout a community along with many other positive health benefits. Researchers and analysts undoubtedly recognize the significance movement plays in an everyday learner's schedule. The priority needs to shift or equalize from math, reading, and writing to the promotion of health and physical education. Future research could

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explore the implementation of more movement and activity-based opportunities for students throughout their school day. Future studies could also assess how a college-like schedule could impact the overall success and achievement of a high school or middle school learner.

Educators agree that seeing their students grow, prosper, achieve, and become positive members of society is their hope and dream. An enormous difference would occur if students were engaged in more movement and activity time. This concern needs to be at the forefront of all educators' and administrators' minds. Physical activity and movement need to be prioritized in school systems. In order for overweight and obesity rates to decrease amongst adolescents, activity and movement must increase. With more activity and movement, student academic success will increase as well.

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