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Physical Activity Integration in Schools: A Review of Benefits to Academics Success
and Mental Health Stability

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A Capstone Project submitted in partial fulfillment of the
requirements for the Master of Science Degree in
Counselor Education at
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Winona State University
College of Education
Counselor Education Department

CERTIFICATE OF APPROVAL

CAPSTONE PROJECT

Physical Activity Integration in Schools: A Review of Benefits to Academics Success
and Mental Health Stability

This is to certify that the Capstone Project of

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Course Instructor in partial fulfillment of the requirements for the

Master of Science Degree in

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Abstract

Incorporating physical activity in classrooms has been shown to create physical, mental and academic benefits for students (Chaddock-Heyman, et al., 2014). The purpose of this research is to find how movement can be easily incorporated through classroom activities and breaks. These movement activities give educators the opportunity to teach students coping skills, such as meditation or stretching. This can provide mental health benefits and tools for students that may not have the opportunities to learn these skills. Physical activity, also aids cognitive functions helping students learn. Heightened cognitive functioning increases students' academic abilities resulting in superior test performance.

Keywords: physical activity, mental health, coping, academics, movement

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Introduction

The education system continuously evolves to incorporate best practices in order to develop students' learning. Incorporating physical activity in school creates the opportunity for students to increase cognitive functioning and learn in diverse situations. With the nation's health concerns on the rise it's crucial, now more than ever, that educators teach students how to be physical active and live a healthy lifestyle. Students will not only gain physical health benefits from increased physical activity in classrooms, but the student will also gain academic and mental health benefits.

The Center for Disease Control and Prevention (CDC) has created a Comprehensive School Physical Activity Program (CSPAP). CSPAP identifies seven steps to implement this program in any school. The seven steps to CSPAP (2015) include:

1. Establishing a team or committee and designate a Physical Activity Leader.
2. Conduct an assessment of exiting physical activity opportunities.
3. Create a vision statement, goals, and objectives for your CSPAP.
4. Identify the outcomes or specific changes that will be direct results of the program implementation.
5. Identify and plan the activities for your CSPAP.
6. Implement your CSPAP.
7. Evaluate your CSPAP.

Programs, like this one, aid school districts and communities starting to incorporate more physical activity in classrooms and students' daily schedules. This sample program helps provide goals and plans for educators, families and community members

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to follow (See appendix A). With all adult in the students' lives on the same plan the more beneficial it will be for the student.

Educators can effortlessly incorporate movement into their classroom lessons. Integrating movement can be as simple as creating a five minute break in the middle of class where students can get up, stretch or get a drink of water. Educators can also make breaks more structured by teaching a specific skill. For example, an educator could use the break time to teach students how to do yoga poses or stretches. This creates opportunity for student to get moving, in addition teaches student a coping skill in return benefiting the students' mental health.

When educators create learning opportunities that are more diverse from the traditional learning setting students are more motivate to learn. In addition, when educators use physical activity to create these diverse learning situations students benefit physically, mentally and academically.

Literature Review

Traditional educational systems provides students with less and less opportunity to engage in physical activity throughout the school day. Student's physical activity time is decreasing in and out of the classroom environment (Chaddock-Heyman, Hillman, Cohen & Kramer, 2014). Integrating physical activity into classrooms increases cognitive functioning creating opportunities for students reap the benefits. Specifically, physical activity can aid academic, mental health and physical health benefits. Continued research has provided knowledge supporting the benefits of integrating physical activity into classrooms.

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How to Incorporate Physical Activity

Almarode and Almarode (2008) have discovered eight effective ways to increase physical activity and energize students. A simple way to increase movement in classrooms is to make time for a stretch break. This gives students an opportunity to get up out of their chairs and move around the room. During a stretch break, teachers can teach students how to stretch and use breathing exercises that can later be used as coping mechanisms. Another way to incorporate movement is to have students get up and change places in the room. Faculty can utilize music and other classroom management strategies to make the transition go smoothly. Moving multiple choice is another way to move students. Moving multiple choice requires each wall of the classroom to be a different answer. When the teacher asks the question students move to the wall that has the answer they agree with. Similarly, students can arrange themselves on a scale of how much they agree with a statement. Almarode and Almarode (2008) refer to this activity as a human graph.

Movement can also be utilized when wanting students to ask questions about material. One activity is called "Snowball fight". This activity requires students to write down a question a piece of paper and crumple it up into a ball. Students divide up evenly, throw their question across the room, and then the students on the opposite side picks up a question. "Ball Toss" is another way for students to ask questions or comment on material. Students stand in a circle, toss a ball around the room, and students are given the opportunity to answer questions. Lastly, "Up Close and Personal" and "Spell it Out" are two activities that students can build relationships and engage in movement. "Up Close and Personal" is an activity where students gather around the

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board and students discuss the material with a peer close to them. When using “Spell it Out”, teachers have students answer questions by having them spell the answers using their bodies. These activities are simple ways to get students up and moving around the classroom. The more unique the activity is the more beneficial it can be to the student.

Academic Benefits

Research conducted by Mullender-Wunsma et al. (2015) illustrated the impact that physical activity has on academic performance. Second and Third grade students from 6 different elementary schools were given pretests and posttests in reading and mathematics. Students in the control group were given a traditional classroom experience. Students in the target group were given a physically active classroom experience. One year after implementing this program, teachers reported students in the target group more on task. Additionally, posttest scores displayed the target group scores were significantly higher than the students in the control group.

Periodic physical activity creates the opportunity for students to get up and move around the classroom, which can aid cognitive control. Control of our thoughts, actions and processes is cognitive control (Chaddock-Heyman, Hillman, Cohen, & Kramer, 2014). Valuable cognitive control, including positive selective attention, control of inappropriate behavior, working memory information, appropriately using context and flexibility of tasks, is essential when working toward academic success. As students grow and change their cognitive control grows and improves. More recently, researchers have used MRI scans to identify parts of the brain that are sensitive to physical activity. The dorsal striatum, which is used for decision making, has been found to be effected by physical activity (Chaddock-Heyman, et al., 2014). Finding

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opportunities for students move can then increase functions in the dorsal striatum, which will then result in an increase in decision making and attention skills.

Selective attention in an academic environment is crucial. Ma, Le Mare, and Gurd (2015) conducted research on the effects “FUNtervals” on selective attention. “FUNtervals” are full body physical activity story lines that are four minutes long. In this study, the researchers gave half of their seventh grade sample “FUNtervals” throughout their school day and gave the other half of the seventh grade sample no “FUNtervals”. When given the d2 test of attention students who engaged in the “FUNtervals” made less errors showing that this intervention can improve selective attention and give a time efficient movement strategy for teachers.

Movement enables blood to flow more freely throughout the body. Just standing can boost blood flow by 5%. In return students are receiving more blood and oxygen to the brain to aid thinking and processing. Movement and exercise can also create a heightened level of Dopamine. Dopamine is responsible for numerous functions including motivation and transmitting of information to the frontal lobe. When these functions are heightened they increase the ability for students to memorize, solve problems and hold attention (Almarode & Almarode, 2008). When students have increased blood flow, oxygen, and Dopamine they are more engaged and have a deeper understanding of the material (Marzano, 2012). For educators, it's important to show how our students are growing and succeeding. Physical activity helps aid our students' success by being more creative and mindful when creating lessons.

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Mental Health Benefits

With mental illness on the rise, it is crucial that professionals utilize prevention strategies and teach students new ways to cope. Tyson et al. (2010) conducted research with undergraduate student. One hundred students were given questionnaires that intended to measure anxiety, depression and physical activity. The Hospital Anxiety and Depression Scale (HADS) and the Physical Activity Questionnaire (PAQ) were the questionnaires utilized in this study. The HADS is a scale that measures anxiety and depression using a Likert scale. The HADS was formerly created to identify increase anxiety and depression in the general public. The PAQ is a self-report tool used to measure how physical activity effects mood and mental illness. Students were required to record the physical activity they engaged in, how many times per week they engaged in the activity and the total amount of time each session lasted. After comparing the results of the HADS and PAQ researchers discovered a correlation between lower scores in anxiety and depression and high levels of physical activity. This research illustrates the benefit of using physical activity in class to benefit students' mental health. This information is crucial with the growing trends of mental health.

Physical Health Benefits

The recommended amount of physical education for “elementary school students get 150 minutes, or two and a half hours, of physical education a week, and middle and high school students get 225 minutes, or three hours and 45 minutes” (Whitmer, 2014). With budget cuts happening in school districts across the nation, students are being given less and less opportunities to engage in physical activity. Integrating physical activity into classrooms incidentally teaches students different ways to exercise and

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become physically fit that they may not experience in their physical education class. For example, teachers in Atlantic City are incorporating yoga in their classrooms by using mini yoga breaks and yoga partners. By using yoga in classrooms, the teachers are teaching their students a coping strategy and core strengthening (Yoga at School Helps Give Kids Brain Breaks and Reduces Stress, 2017).

Physical activity is an important component when reducing the chance of other health conditions. Obesity, type 2 diabetes, coronary heart disease, and various forms of cancer are conditions that can be reduced when exercise is utilized (Mullender-Wijnsma et al., 2015). In addition, utilizing exercise at a young age makes for a healthy heart. With students spending less and less time, in and out of, engaging in physical activities, it is important to find ways to incorporate more into the school days. Incorporating more movement into the school days can help decrease these health conditions.

Conclusion

The purpose of integrating physical activity into classroom lessons is for students to grow academically, physically, and mentally. Through research, the benefits to integrating physical activity are evident and I have seen the importance of enlightening our teachers and staff. As our society evolves, our students change, which means educators need to change with students to make sure the students' needs are being met. Incorporating physical activity into classrooms helps educators shape students into healthy, intelligent adults.

Physical activity provides prevention strategies for students' mental and physical health. Integrating physical activity in classrooms teaches students knowledge in

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addition to the core subjects. Students learn social-emotional skills and coping skills that they may not receive outside the classroom. Incorporating physical activity, also teaches students' the importance of physical activity and alternative ways to utilize physical activity in their daily life. Students' will carry these learned skills through their school years, to college and into adulthood.

Academic success is another important reason to incorporate physical activity into school days. Physical activity elicits selective attentions skills and creates on task behaviors. Brain process are affected by physical activity as well. When student start moving, it creates more blood flow, making more blood go to the brain making it easier for students to process information.

In conclusion, incorporating physical activity in schools is beneficial to students' academics, mental and physical health. Research has found numerous benefits to incorporating physical activity. As a result, many resources are available educators attempting to incorporate physical activity into their classrooms, including CSPAP and numerous researcher's classroom activities. As a school counselor, I would like to use this information to incorporate physical activity into my classroom lessons. Also, I would like to use the information that I have found to help teachers incorporate movement in their classrooms and to make learning experiences more flexible for their students.

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Appendix A

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Sample Vision Statement, Goals, and Objectives (Table 2)

CSPAP Vision Statement (a declaration of a shared sense of purpose and provides a framework for establishing goals, objectives, and activities for your CSPAP):

The vision statement of Lotus Middle School's Comprehensive School Physical Activity Program is:

Active Students, Active Schools

Goals and Objectives:

Goal 1: Increase opportunities during the school day to increase moderate to vigorous physical activities for students.

- Objective 1a: By the end of year one, all K-2 classroom teachers will have participated in a 1-day training on how to integrate physical activity into existing lesson plans.
- Objective 1b: By the end of year two, all K-2 students will receive at least 1 daily lesson that includes physical activity.

Goal 2: Increase the number of minutes that students are required to participate in physical education.

- Objective 2a: By the end of year one, the CSPAP committee will conduct and report on one comprehensive analysis of budget, staff, and school schedule implications related to increasing physical education time.
- Objective 2b: By the end of year two, the CSPAP committee will work with school administrators to hire at least one new physical education teacher.

Goal 3: Increase the number of students that participate in at least 60 minutes of physical activity daily.

- Objective 3a: By the end of year one, 90% of the students in grades K-5 will use a daily log to record their moderate to vigorous physical activity.
- Objective 3b: By the end of year two, all K-5 students will participate in a teacher- or student-led, morning physical activity that is at least 10 minutes in length.