



International

Journal of Human Sciences

ISSN:2458-9489

Volume: 21 Issue: 4 Year: 2024

Enhancing physical education at the middle school level exploring three innovative teaching methods

Alyson Brenna¹
Joe Deutsch²

Abstract

Times have evolved in the world of Physical Education (PE). The subject area has undergone significant changes, leaving behind the experiences of previous generations. The article explores the shifts in middle school PE, recognizing the challenges arising from decreased participation and motivation. Acknowledging the critical role of PE in shaping resilient, active, and self-motivated individuals, this article aims to help current PE teachers incorporate innovative teaching methods by giving some examples of how to do so. The article dives into three innovative teaching methods: gamification and technology integration, student-centered inquiry, and the flipped classroom. Gamification, combining play and technology into PE, catches students' attention and becomes an exciting journey. Student-centered inquiry allows learners to actively participate in their educational journey, encouraging exploration, critical thinking, and a genuine passion for physical activity. The flipped classroom strategy optimizes class time for physical activity by shifting content delivery outside the classroom. The impact of these innovative methods extends beyond traditional instructional approaches. They enhance student engagement and motivation, making PE relatable and enjoyable, which leads to increased participation and motivation. These helpful strategies encourage the development of essential life skills such as teamwork, critical thinking, and self-motivation, preparing students for challenges that go beyond the gymnasium.


Keywords: Physical education; education; teaching methods, middle school; technology; flipped classroom.

Introduction

In the 21st Century, Physical Education has undergone significant transformations compared to the experiences of students' parents and grandparents during their school days. Gone are the days when a red rubber ball could send someone to the hospital or when students would climb the infamous braided rope in front of their peers. The educators in Physical Education today differ from the intimidating figures of the past who solely evaluated students based on their psychomotor abilities. Instead, the majority of these educators share a common objective: to assist each student in

¹ M.Ed., North Dakota State University, Graduate Student, School of Education, abrenna@hawley.k12.mn.us

² Ph.D., North Dakota State University, Full Professor, School of Education, Joe.Deutsch@ndsu.edu

 Orcid ID: [0000-0003-3094-6641](https://orcid.org/0000-0003-3094-6641)



discovering a lifelong activity they genuinely enjoy while committing to maintaining a healthy physical lifestyle.

The shift from elementary-level Physical Education classes to those in middle school creates challenges for many students (Prichard & Deutsch, 2013; Barney & Deutsch, 2009). Some students notice a noticeable decline in participation and motivation at this stage. How can Physical Education teachers address this issue? A study performed by Grasten in 2015 stated, “The major cause of concern arising from the current findings was that girls engaged in up to 26.2% and boys 33.6% of their weekly MVPA (moderate to vigorous physical activity) during only two 45-min PE classes. A higher priority needs to be placed in schools on encouraging young people to engage in daily physical activity and providing guidance that makes it easy to find activities in which girls and boys have opportunities to be successful and feel competent” (Prichard & Deutsch, 2013). The middle school years are crucial in a student's educational journey, serving as a period of cognitive growth and forming lifelong habits, particularly those related to physical health. Physical Education (PE) provides a unique opportunity to instill physical fitness and social, emotional, and cognitive skills (Burd, Deutsch, & Waldera, 2024).

Recognizing the crucial role of PE in a student's education, this article aims to provide current PE teachers with ideas on incorporating innovative teaching methods in the middle school physical education setting. By exploring three strategies—gamification and technology, student-centered inquiry, and the flipped classroom—this article demonstrates that the integration of innovative teaching methods in PE goes beyond enhancing the curriculum; it signifies a commitment to shaping resilient, active, and self-motivated individuals prepared to embrace a lifetime of physical well-being.

Three Innovative Teaching Methods in Middle School Physical Education: Gamification and Technology Integration




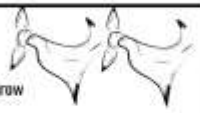

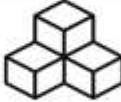

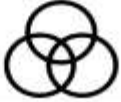
One teaching strategy on the rise in middle school physical education is the integration of gamification and technology. In an era where screens rule the world, digital engagement forms various parts of young lives. Gamification and technology incorporate elements of play and technology into PE, which has the potential to transform the learning experience. According to Arufe-Giráldez, “Educational gamification is a technique that transfers the mechanics of games and video games to the educational field to seek behavior modification. Thus, it creates attractive and interesting didactic experiences to increase the motivation of the students, their commitment and learning of the contents of the subject or the enjoyment of the pedagogical tasks themselves, always using the motivational elements of the games” (Arufe-Giráldez, 2022). Undoubtedly, the rise of video games in popularity among students is undeniable. These interactive platforms offer instantaneous feedback, allowing players to attempt a level or task again if initially unsuccessful promptly. Players are rewarded with in-game bonuses or fascinating visual effects upon conquering a level or securing a victory, enhancing the overall gaming experience. Given that teachers frequently strive to connect their content with students' lives, integrating this approach into physical education is an excellent way to do so.

By introducing interactive challenges, point systems, and digital rewards, gamification transforms traditional exercises into dynamic, engaging activities that resonate with the gaming generation. Furthermore, integrating fitness apps, wearable devices, and interactive games makes physical activities more appealing and provides real-time feedback, creating a sense of accomplishment and motivation among students. By using the attraction of technology, educators can create an environment where the goal of physical education is not just a class but an exciting journey for students, where they find a lifelong appreciation of the importance of an active and healthy lifestyle.

Example of Gamification

In a middle school physical education class, gamification can be incorporated into juggling exercises to make the learning experience more engaging. Students can be divided into teams, and each team is assigned a specific juggling challenge. For example, they might have to pass a juggling

ball among team members a certain number of times without dropping it. The team that completes the challenge first earns points. This enhances coordination and motor skills and adds an element of friendly competition and achievement, making the juggling activities more enjoyable and interactive for the students. Additionally, gamification and juggling can be used as individual challenges. Using the chart below, you can introduce the difficulty levels and progressions of juggling. Using the progression chart, students can strive for one level at a time, trying to move on to the next.

 JUGGLING  Progressive Levels	
1	ONE SCARF  Goal: tossing the scarf and grabbing it before it touches the ground 5 times in a row
2	TWO SCARVES  Goal: throwing and catching 2 scarves 10 times in a row REMEMBER: "Criss Cross Apple Sauce"
3	THREE SCARVES  Goal: one minute of full cycle REMEMBER: figure eight pattern
4	THREE CUBES  Goal: one minute of full cycle REMEMBER: figure eight pattern
5	THREE TENNIS BALLS  Goal: one minute of full cycle REMEMBER: figure eight pattern
6	THREE RINGS  Goal: one minute of full cycle REMEMBER: figure eight pattern

Student-Centered Inquiry:

Implementing a student-centered inquiry approach in middle school physical education creates a shift from traditional teaching patterns to a type that places students at the head of their learning experience. This technique recognizes students' diverse interests, abilities, and learning styles, encouraging them to actively participate and take ownership of their educational journey. In physical education, student-centered inquiry involves encouraging learners to ask questions, explore topics of personal interest, and take ownership of their fitness goals. This approach goes beyond simply getting information, critical thinking, problem-solving skills, and a genuine passion for physical activity.

In a study where they experimented with this teaching strategy, they discovered, "In the final debriefing with the [youth], we asked what they thought we did well. Moreover, one said we listened to their suggestions, and another student said everyone participated. Moreover, when we asked why we thought they all participated, he said it was because the games were fun, we got to make them,

you change them to fit us, and it was our choice...As Casey translated above, all of the youth actively participated. Notably, their participation included dressing out and attending class daily in a culture where 100% engagement is rare” (Oliver, 2015). By allowing students to lead their inquiry process, educators create an environment where students find an appreciation of lifelong commitment to health and well-being through self-directed exploration and discovery.

Examples of Student-Centered Inquiry:

- Student-Led Warm-Up Activities: Allow students to take turns leading the class in warm-up activities.
 - Encourage them to incorporate a variety of stretches, aerobic exercises, and dynamic movements. (Give an example first)
 - This empowers students to take on leadership roles, speak in front of peers, encourage creativity, and ensure that warm-up activities are diverse and engaging.
- Personalized Fitness Plans: Have students set personal fitness goals (can incorporate a SMART Goal lesson) and develop their fitness plans.
 - Provide resources and guidance on creating balanced workout routines that include cardiovascular endurance, muscular strength, and flexibility exercises.
 - Students can track their progress, modify their plans as needed, and reflect on their efforts.
- Game Modification or Create their Own Game: Assign students the task of modifying a traditional game to make it more inclusive or challenging.
 - This could involve altering rules, equipment, or game dynamics.
 - Students can present their modified games to the class, explaining the reasons behind their changes and how they impact the game.

Flipped Classroom:

According to the National Guidelines in the United States, schools are recommended to provide 225 minutes of instructional physical education per week for middle and high school students throughout the academic year (SHAPE America, n.d.). Given the typical five-day school week, this translates to an average of 45-minute physical education classes per day. However, a noteworthy shift occurs in middle school, where students are now usually required to change into physical education attire at the start of class and change back to their regular school attire at the end. This adjustment reduces the 45-minute class period to approximately 35 minutes. Next, factoring in the initial 10 minutes of class to a warm-up and lesson explanation, students are left with a mere 25 minutes of actual physical activity time. Is there a way to curb this problem?

As stated by Østerlie, “Flipped learning is not a method that will overtake the entire teaching done in PE, but will function more as a supplement to the existing teaching. Just the effect of using a more diverse set of teaching methods has a positive impact on students’ motivation for, and physical activity level in, PE classes” (Østerlie, 2016). In physical education, the flipped classroom approach changes the normal routine. Instead of spending class time on explanations and demos, students watch videos or learn about new exercises, games, and concepts at home. Then, during class, they get to put that knowledge into action. This way, when students hit the field or the gym, they are ready to dive into the activities, ask questions, and work together with their classmates. Implementing the flipped classroom teaching strategy gives students valuable minutes to be physically active in their PE class.

Examples of Flipped Classroom:

- Introducing a New Game: The PE teacher can provide links online to their students to a video of the new game they will play the next day in class. (Try and use videos that do not exceed 10 minutes)
 - The video can explain the rules and give students examples to show the positioning and flow of the game.
 - The next day, this will allow the teachers to answer questions and get right into gameplay.
- Interactive Quizzes/Assessments
 - Develop online quizzes covering the rules and strategies of a specific sport. These can be related to terminology, rules, equipment, etc.
 - Students can complete the quizzes as homework, and class time can be used to apply these rules in practical game scenarios.
- Virtual Skill Challenges:
 - Teachers can assign a virtual fitness challenge where students record themselves performing a set of exercises at home, such as push-ups, squats, or jumping jacks.
 - They can share their videos on a secure online platform, and class time can be used to discuss different techniques and provide constructive feedback.
 - A potential platform to use to have students record their work is Flip Grid.

Impact of Innovative Teaching Methods:

The implementation of innovative teaching methods in middle school physical education has a positive impact on students, extending beyond the norms of traditional instructional approaches. These innovative teaching strategies significantly increase the overall learning experience and provide internal and external motivators for students.

Enhanced Student Engagement and Motivation: Innovative teaching methods give an element of excitement and freshness to physical education. Making it relatable and engaging will capture the attention and interest of middle school students. Whether through gamification, student-centered inquiry, or flipped classroom, these approaches make the learning process more fun and relevant to their lives. As a result, students are not non-participants but active and motivated to participate as best as they can in physical activities.

Improved Physical Health and Well-being: Trying new and fun ways of teaching can make students like to exercise more. When teachers use different activities, it helps students enjoy being active. This can make them want to stay fit even after middle school, creating a lifelong appreciation of being physically active.

Development of Lifelong Skills: Beyond the physical benefits, innovative teaching methods help develop essential life skills. Collaborative learning, problem-solving in a gamified environment, and self-directed exploration in a student-centered inquiry model improve teamwork, critical thinking, and self-motivation. These skills transfer outside the gymnasium, preparing students for the challenges they may encounter later in their lives.

The impact of innovative teaching methods in middle school physical education is life-changing. They shape students' attitudes toward physical activity and their overall well-being and skill development. As teachers try to implement these teaching strategies, the potential for positive, long-lasting effects on students' lives becomes increasingly obvious.

Challenges:

While innovative teaching methods in middle school physical education offer numerous benefits, their implementation has some challenges. Teachers trying to implement them in their classrooms face challenges that require careful thinking and thoughtful planning.

The implementation of gamification in PE will have its challenges, requiring educators to be ready for potential hurdles to ensure its effective integration. These hurdles may include adequate resources, balancing fun and learning, and consistent engagement. Creating gamified content often requires time, creativity, and, in some cases, financial investment. Teachers may face challenges in getting resources to create engaging game elements or rewards. Striking the right balance between making the learning experience enjoyable and providing educational assessments are met can be challenging. If the game elements overpower the educational content, students may focus on the fun aspects, potentially not learning. Maintaining student engagement over time can also be challenging, as the hype of gamified pieces may wear off. Educators must continuously learn and introduce new elements to maintain student interest and motivation.

As expressed by Oliver, "Inquiry, in and of itself, challenges the status quo of teaching and learning because it requires us to 'fundamentally question how schooling is done' (Short and Burke 1996,103). Inquiry changes relationships between students and teachers as well as who has knowledge and how that knowledge must be used" (Oliver, 2015). Changing the norm is no easy task. Teachers could face challenges about how students may initially struggle with the change, limited resources, and assessment resources.

Fullerton explains when implementing the flipped classroom strategy, "There are limitations to FL (flipped)/blended approach that should be considered when implementing. Students may not access content ahead of time; there often will be an acclimation period for students to become accustomed to accessing content through digital means outside of class. Hopefully, when students see the utility of having access to course content at their fingertips and the content is relevant and meaningful, they will be more inclined to review content ahead of time and outside of class. Teachers may also find it difficult to find appropriate online videos, and creating content may be time-consuming" (Fullerton, 2023). While the flipped classroom strategy has excellent potential, addressing these challenges is crucial for its successful implementation. Educators must consider the unique abilities of their students, provide necessary support, and continually alter their strategies to maximize the benefits of this innovative teaching approach.

Conclusion:

In conclusion, the outlook of middle school physical education is evolving to meet the needs of 21st-century students. This article explores three innovative teaching methods: gamification and technology integration, student-centered inquiry, and the flipped classroom. These offer educators valuable tools to improve the overall learning experience, promote student engagement, and encourage lifelong well-being.

The integration of gamification and technology brings physical education into the digital age. By transforming traditional PE activities into engaging, game-like activities, educators can catch students' attention and motivation, creating an environment where physical education becomes not just a class but an exciting journey towards a healthy lifestyle. Student-centered inquiry allows the students to take charge of their learning, encouraging exploration, critical thinking, and discovery. This approach goes beyond gaining physical skills; it promotes a genuine passion for lifelong health and well-being and creates a sense of ownership and commitment. The flipped classroom strategy addresses time constraints in physical education by optimizing class time for physical activity. By changing the teaching of the content outside the classroom, teachers can maximize students' time engaged in physical activities during class.

While these innovative teaching methods offer many benefits, they also come with some challenges (Kaldor & Deutsch, 2013). Educators play a key role in ensuring the success of these innovative teaching strategies by facing these challenges. Through thoughtful planning, ongoing

professional development, and the willingness to change, teachers can create an extremely positive learning environment for their students.

The implementation of innovative teaching methods in middle school physical education goes beyond the classroom. These strategies can help shape students' attitudes toward physical activity and influence their overall well-being and skill development in the process of helping these students find an activity they love to participate in.

References:

- Arufe-Giráldez, V., Sanmiguel-Rodríguez, A., Ramos-Álvarez, O., & Navarro-Patón, R. (2022). Gamification in physical education: a systematic review. *Education Sciences*, 12(8), 540. <https://doi.org/10.3390/educsci12080540>
- Barney, D. & Deutsch, J. (2009). The Effect of Middle School Physical Education Curriculum on Student Attitudes. *Asian Journal of Physical Education & Recreation*, 15(1), 12-20.
- Burd, H., Deutsch, J., Waldera, R. (2024). Giving Another Purpose to Sport: Teaching Social and Emotional Learning through the Socio-Cultural Curriculum Model (SCCM). *Journal of Physical Education, Recreation, and Dance*, 94(9), 13-23. DOI: 10.1080/07303084.2023.2252865
- Fullerton, S. (2023). Flipped learning in physical education. Retrieved from <https://plt4m.com/blog/flipped-learning-in-physical-education/>
- Grasten, A. (2015). “Secondary school students’ physical activity participation across physical education classes: the expectancy-value theory approach. *The Physical Educator*, 72(2), 340.
- Østerlie, O. (2016). Flipped learning in physical education: Why and how? *Physical Education and New Technologies*. 166–176. <http://hdl.handle.net/11250/2405451>
- Oliver, K. L., Oesterreich, H. A., Aranda, R., Archeleta, J., Blazer, C., de la Cruz, K., Martinez, D., McConnell, J., Osta, M., Parks, L., & Robinson, R. (2015). “The sweetness of struggle”: Innovation in physical education teacher education through student-centered inquiry as curriculum in a physical education methods course. *Physical Education and Sport Pedagogy*, 20(1), 97–115. <https://doi.org/10.1080/17408989.2013.803527>
- Kaldor, A. & Deutsch, J. (2013). Implementing Differentiated Instruction into the Primary Physical Education Classroom. *Asian Journal of Physical Education*, 19(1), 64-69.
- Prichard, A. & Deutsch, J. (2013). The Effects of Motivational Climate on Students in Physical Education Classes. *Global Journal of Health and Physical Education Pedagogy*, 2(2), 103-110.
- SHAPE America. (n.d.). National guidelines. Retrieved from <https://www.shapeamerica.org/MemberPortal/standards/guidelines/default.aspx#:~:text=Physical%20Education%20Guidelines,for%20the%20entire%20school%20year.>