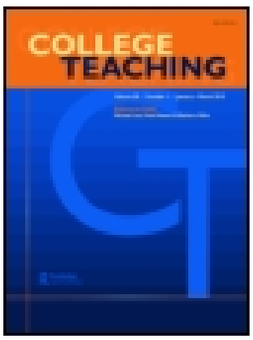

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Tailoring the Walking Classroom to Promote College Student Engagement

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ABSTRACT

Podcasting targets student engagement through technology-based blended learning and application of the four perspectives previously discussed. Podcast-based walking programs, based off of the Walking Classroom, promote exercise and learning without reducing educational time. The purpose of this commentary is to explain a teaching method that promotes blended learning through physical activity and podcast-based learning. Students expressed enjoyment and desire to continue this learning modality across other classes, believed they retained information better while walking, and that it helped them engage in physical activity after commuting to campus or sitting at work. Lastly, students expressed enjoyment with this style of learning because it helped energize and motivate them prior to class in the morning. The authors discussed this tailored teaching method for a university setting as well as future research implications.

KEYWORDS

Physical activity; college; blended learning; podcast; walking classroom

College student engagement is necessary for student memory, motivation, and overall academic success (Fredin, Fuchsteiner, and Portz 2015). Student engagement can be defined by attentiveness, concentration, active listening, and responsible participation in presented content or classroom activities (Axelson and Flick 2011; Caruth 2018). A wide variety of factors, including student characteristics, instructor style, and classroom culture contribute to student engagement and learning (Axelson and Flick 2011). College student engagement can generally be described using four perspectives: behavioral, psychological, sociocultural, and holistic perspectives (Kahu 2013). Each of the perspectives can be applied and practiced to promote student engagement and learning. Students who are more engaged have been shown to succeed academically and persist through college (Slanger et al. 2015). One mode of learning that could apply to higher education is podcast-based learning.

While podcasting isn't considered a new method of disseminating information, research indicates 51% of the U.S. population has listened to a podcast (Kay 2014). Using podcasts to clarify topics and to improve student comprehension is beneficial in higher education (Lonn and Teasley 2009; Prakash, Muthuraman, and Anand 2017). It may also spark learning or increase critical thinking on a particular topic (Hargett 2018). Recording an entire lecture, known as a "profcast", may also be an enrichment experience by and for the narrator (Prakash, Muthuraman, and Anand 2017; Sandars 2009). Podcasting targets student engagement through technology-based blended learning and application of the four perspectives previously discussed. While blended learning may motivate learning and increase attention span among students, research has also integrated blended learning with physical activity (Huneycutt 2013).

Physical activity increases blood flow to the brain, which stimulates enhanced cognitive functioning for learning and processing (Blakemore 2003). This is noteworthy because the human brain can only receive a small amount of information at a time, typically paying attention for fifteen minutes before moving to an "autopilot" state where information may not be received and stored as effectively (Bradbury 2016; Jensen 2000). The use of a two-to-five-minute movement break is recommended to break up the standard 75-minute higher education lecture (Feiler 2019). Various modes and durations of physical activity have been found to positively impact psychological well-being (Bailey et al. 2018). Short bouts of physical activity decrease feelings of anxiety in college students (Asmundson et al. 2013; Pedersen and Saltin 2015). More specifically, experimental research has found

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walking prior to classroom instruction improves learning in college students as well as brain activation (Li et al. 2014; Sng, Frith, and Loprinzi 2018). Aerobic exercise positively increases free recall of information in active college students compared to sedentary college students (Zuniga et al. 2019). Research also supports the Cardiorespiratory Fitness Hypothesis in that college students who see improvements in fitness experience greater improvements in the attentional domain of cognition (Billinger et al. 2017). Regular physical activity is also associated with grade point average in college students (Mielke and Ednie 2018).

One form of instruction that promotes blended learning and physical activity is a podcast-based walking lecture. This is based off of the Walking Classroom, which is an award-winning program that has been implemented with elementary school students to promote exercise and learning without reducing educational time (Becker 2016). Walking podcasts are a viable instructional option for college students as they are free of cost, and easy to record, manage, and implement. Podcast-based walking lectures are recommended for content review or introducing new information in association with follow-up collective discussion and reiteration. Students may outperform sedentary students in a learning test even if a continuation of the material is not revisited (Coens et al. 2011). College students are generally sedentary throughout the duration of their university classes, and the majority have reported the desire to stand or be active during class as it would help them pay attention, reduce restlessness, and improve overall health (Benzo et al. 2016). Through podcast-based walking lectures, instructors may find that the learning environment is enhanced with a "walking break" without losing instructional time.

The authors have tailored traditional Powerpoint-style lectures to a podcast-based walking lecture format. Undergraduate university students were asked to scan a QR code with their smartphones which connected them to the 15–20-minute walking podcast. Prior to any physical activity, students were required to complete a medical history profile form indicating any health conditions or stipulations that would prohibit their active participation. The university instructor recorded a lecture using the online recording tool, Vocaroo. Other methods could be utilized, however Vocaroo prohibits web surfing or any multitasking such as text messaging or online shopping. This method assists students in focusing on the podcast only, and their walking pattern therefore minimizing distractions. Students proceeded to walk the indoor track close to their classroom, or venture outside in pairs or larger groups for safety. Students could choose to walk on treadmills, ellipticals, or ride stationary bikes if they desired or if they need modifications. At the conclusion of the walking lecture, students reported back to the classroom and discussed the elements of the podcast.

Following implementation of the physical activity-based podcast, students were asked to anonymously describe their experiences, including how they benefited and what could be improved. All students expressed enjoyment and desire to continue this learning modality across other classes. Students seemed to believe they retained information better when walking when compared to sitting during a lecture or reading alone. They also mentioned walking while learning helped them engage in physical activity after commuting to campus or sitting at work. Students also said they were able to focus better while participating in the walking lectures. They mentioned that they were less likely to get distracted by their phone, text, or play games during class because they had to walk and listen. Students said the walking lectures helped clarify and expand upon what they had learned in required readings prior to class. Overall, students expressed enjoyment with this style of learning because it helped energize and motivate them prior to class in the morning.

After consecutive semesters of implementation, students have continuously requested that all traditional lectures be replaced or supplemented with walking lectures. Students revealed that being able to listen to the podcasts during class, after class, or when working out on their own improved their ability to retain class content. They explained that being able to choose different modes of physical activity while listening (i.e., walking, stationary bicycle, elliptical, treadmill) contributed to their enjoyment, learning, and overall physical activity. It seems as though the walking classroom had a dual-pathway effect. As students engaged in physical activity, they perceived they were learning better, which increased their perceived enjoyment of physical activity. Further research is needed to quantitatively examine the impact of the walking lecture on validated student enjoyment and learning outcomes.

Physical activity-based learning through the use of podcast-based walking lectures is a viable and effective method to increase college student physical activity, attention, and enjoyment. While this commentary discussed how this teaching method was implemented, further randomized control trials are needed to compare the effects of such a style of learning to control

and traditional lecture formats. It is suggested that walking lectures be 10–20 minutes in duration and include a variety of modes of physical activity so that all physical fitness levels and abilities can participate. Educators across all levels can begin class, segment class, or end class with a tailored podcast-based walking lecture.

Providing technology to students who do not own a smart phone may be a concern for instructors. Loaning a university issued tablet or iPad would allow the student to participate. If access to a fitness room is available, the student can listen to the tablet while riding a stationary bike or walking on the treadmill to minimize the risk of dropping the tablet. Finally, another option could be to allow students to walk in pairs listening to the podcast without earphones. At the conclusion of the podcast, the pair could instigate a "walk and talk" discussing the podcast while providing other insights as they proceed back to the classroom. This approach would highlight the affective learning domain and perhaps create more classroom community.

Exploration of additional podcast programs that minimize multitasking are necessary since Vocaroo only retains voice narrations for a few months.

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