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**Exploring the use of Social Media in Secondary Physical Education:
the #Active365 Challenge**

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Abstract

The purpose of this study was to explore the experiences of two Alberta secondary physical education teachers' use of the #active365 challenge, a researcher developed and piloted, social media-based and mobile device-facilitated, online challenge that aimed to embrace technology and more comprehensively achieve active lifestyle physical education curricular outcomes. This research was framed with a social constructionist epistemology where knowledge is co-created and specific to context, and due to the remote nature of the study, methodology involved a pragmatic approach to multiple case study research. Data were primarily gathered from individual semi-structured interviews following participant use of #active365 for one semester. Findings showed that teacher experiences were unique within their respective contexts and dependent upon teacher direction, student uptake, and grade level. This research offers insight to those interested in using social media to facilitate teaching secondary physical education online.

Keywords: social media; secondary physical education; #active365.

Résumé

Le but de cette recherche était d'explorer les expériences de deux enseignants d'éducation physique de l'utilisation du défi « #active365 » développé et dirigé par le chercheur. Cette application utilisant les réseaux sociaux sur des appareils mobiles cherchait à mettre en lien la technologie et les résultats d'apprentissage sur le thème de vie active du programme d'éducation physique. Cette recherche s'inscrivait dans un cadre et une épistémologie socio constructiviste où le savoir est co créé et spécifique au contexte. La méthodologie, compte tenu de l'éloignement, en était une d'étude de cas multiple. Les données recueillies provenaient d'entrevues semi-structurées à la suite de l'utilisation de l'application pendant un semestre par les participants. Les résultats révèlent que les expériences de chaque enseignant sont uniques dans leur contexte respectif. Les résultats révèlent également que l'utilisation de l'application est dépendante de l'orientation donnée par l'enseignant, la réaction des élèves et du niveau scolaire. Cette recherche offre un aperçu aux enseignants du secondaire intéressés à utiliser les médias sociaux dans l'enseignement de l'éducation physique en ligne.

Mots clés : médias sociaux; éducation physique au secondaire; #active365.

Introduction

Today's youth spend a significant amount of time focused on mobile devices such as smartphones. More than 70% of Canadian children and youth are acquiring more than the recommended two hours of screen-time per day (Government of Canada, 2018; Statistics Canada, 2019a). Furthermore, nearly 100% of Canadians aged 15–30 own a smartphone or use the Internet daily and 93% access social media sites (Statistics Canada, 2019b).

Considering the popularity of this technology with youth, some individuals question whether or not smartphones and social media are appropriate for use in educational contexts. Some identify that students are so interested in engaging online that quite often it consumes their time and distracts them from their studies (Nowell, 2014), while others have identified concerns with classroom disruption and inappropriate use of technology such as cyberbullying and cheating (Walker, 2013).

However, the unsupportive opinions regarding integration of mobile devices and social media into schools are challenged by a number of those who advocate for adopting this technology to meaningfully engage students in education (Casey, 2013; Kirk, 2019; Marciano, 2015; Martin et al., 2015; Nowell, 2014; Wallis, 2014) and inspire innovative pedagogy to support student learning (Casey et al., 2017). Allowing students to document, develop, or share information using social media applications offers students, at a variety of educational levels, opportunity to connect (Rohr & Costello, 2015) and meaningfully involves them in the design of their own learning (Wallis, 2014).

Literature offers encouragement for meaningful and authentic use of social media or smartphones within a variety of subjects (Cochrane & Bateman, 2010), including physical education (Casey et al., 2017; Kirk, 2019). Courses such as physical education can integrate this student-familiar technology to capture student attention, as well as work to achieve important health literacy objectives (Kirk, 2019) and encourage physically active behaviour (Sibley & McKethan, 2012). With a number of applications and interfaces that encourage physically active screen time (Cowdery et al. 2015; Kooiman et al., 2015; Nigg et al., 2017; O'Loughlin et al., 2012; Staiano et al., 2017; Xian et al., 2017), online peer interaction has been demonstrated as a desirable aspect to further support online physical activity opportunities (Kooiman et al., 2015; Rote et al., 2015; Sibley & McKethan, 2012; Zhang et al., 2015).

As smartphones and social media continue to grow in popularity, it is important that health promoters and educators understand how to use this technology to support healthy behaviours (Cowdery et al., 2015) and to encourage students to use the technology already familiar to them in ways that support physical activity (Sibley & McKethan, 2012). There is a need to explore new, meaningful pedagogical avenues that further digital possibilities in physical education (Casey et al., 2017), while connecting pedagogy to curricular objectives (Penney et al., 2009).

The purpose of this research was to explore the experiences of secondary physical education teachers' use of the #active365 challenge, detailed below, as an extension of their physical education classes. More specifically, I aimed to understand: (a) the benefits and barriers of student participation; (b) how other physical education teachers might adapt the #active365 challenge to their specific context; (c) opportunity for student physical activity engagement outside of class time through the #active365 challenge.

Pilot Study

This research was inspired by a pilot study conducted during my time as a secondary physical education teacher in Alberta. Following observations of my students' engagement with their smartphones and social media applications, I was motivated to embrace this technology in hopes of further engaging students in my physical education classes.

Detailed in Taylor (2018), the #active365 challenge asked students to take photos of themselves or the equipment they used while being active and to post or send those photos to me through social media. With each post, students were asked to provide the hashtag #active365 as well as describe the activity portrayed in the photo. These photos offered me a window into student physical literacy journeys regarding student confidence and motivation to be physically active, which further informed my assessment of active lifestyle physical education curricular outcomes; specifically, D10-1, students will "demonstrate a commitment to an active lifestyle through participation in and out of class" and D20-1 and D30-1, students will "model an active lifestyle" (Alberta Learning, 2000, p. 29). I awarded the students 5% towards the attitude and effort portion of their unit grade for each #active365 submission, where units were typically one week (five classes) in length; students could earn a maximum of 25% (one #active365 submission per day) towards the attitude and effort portion of their unit grade. The student effort and positive attitude towards physical activity were recognized in the physical education department assessment rubric at my school, which was directly tied to curricular objectives and justified the adjustment to student grade. Students were also welcomed to email an #active365 submission to me or have their parent/guardian sign a note explaining the activity if they did not have access to a phone or mobile device, or if they were not keen on taking photos or participating in the social media aspect of the challenge. Important to note, the #active365 challenge was optional, therefore no negative effects on grading were felt by students who chose not to participate.

Following three semesters and iterations of offering the #active365 challenge to my high school physical education students, I experienced several benefits (Taylor, 2018). I learned about different ways that students accessed physical activity on their own time, I grew to learn more about my students as individuals, and as a result, developed better relationships with many of those students as well. Additionally, the activities students demonstrated further informed units of instruction in my physical education classes. For example, a split unit of lacrosse and rugby was lengthened when I learned, through #active365 posts, that I had two elite lacrosse players in my class; those students worked with me to teach the lacrosse unit to the class as well. Furthermore, the #active365 challenge motivated me to model daily physical activity.

I spoke with students in my class about the #active365 challenge at the end of each semester, which informed changes for the #active365 challenge in the following semester. In those conversations, I learned some of the reasons why students chose not to partake in the challenge; I learned that Snapchat and Instagram were popular and that Twitter was not, that some students did not own mobile devices, some students did not like social media, and others felt that they engaged in more than enough physical activity during physical

education class (Taylor, 2018). As many as 50% of students in one class embraced the #active365 challenge and the number of submissions I received increased with each semester/iteration; this led me to wonder if the #active365 challenge might support other physical education teachers and their students as well (Taylor, 2018).

Epistemological Framing

Social constructionism provided an epistemological framework for this research, which identifies the collaborative development and social nature of knowledge (Berger & Luckmann, 1966). This epistemology locates and values the perspective of the individual, which is shared with others in society (Burr, 2003). With this in mind, it is important for the researcher to acknowledge their perspectives reflexively with regards to the research findings (Burr & Dick, 2017; Guillemin & Gillam, 2004; Merriam, 1998). Considering my design and pilot study with the #active365 challenge, positioning myself within the research is important, as is my reflexivity and introspection of biases when analyzing the data.

Social constructionism also identifies the sociocultural influence on the understanding of knowledge (Berger & Luckmann, 1966). This is of importance in this research considering the participants and I shared a similar role in the implementation of the #active365 challenge. The two participants in this research as well as my position within the pilot study were all approached from the perspective of a secondary physical education teacher in Alberta, Canada; all of us shared the same curricular objectives to guide our pedagogy. While social constructionism identifies the sociocultural similarities the research participants and I shared, it also frames our understanding for the individual situatedness and specific context, in the case of this research, the individual schools and classes, as unique and offering experiences specific to their immediate circumstances and surroundings (Berger & Luckmann, 1966).

From a social constructionism perspective, teacher participant contribution to knowledge-making through their own context was paramount in this study. What was of interest methodologically, was how this research could be conducted remotely, as done with the #active365 challenge, to further explore the notion of learning and construction of knowledge at a distance.

Methods

This study used a unique, remote approach to multiple case study research. Traditionally, case studies have been identified as a sound methodological choice for exploring a program (Baxter & Jack, 2008; Merriam, 1998), or exploring one program in a variety of contexts in the case of multiple case study methodology (Baxter & Jack, 2008). Where *program* is defined as "a set of related measures or activities with a particular long-term aim" (Program, 2021), the #active365 challenge is much like a program due to the intention to have students digitally capture physical activities using social media over the course of a semester, as a demonstration of and contribution towards an active lifestyle.

Case study research offers an opportunity for in-depth exploration of a unit of analysis within boundaries, specific to context, with flexibility in multiple methods to gather data and explore the case in meaningful ways (Merriam, 2009; Simons, 2009; Stake, 1995; Yin, 2017). Case studies are valued for their particularistic, descriptive, and heuristic nature and are explored as bounded systems (Merriam, 2009). The unit of analysis in this study were teacher experiences with the #active365 challenge in their bounded systems of secondary physical and health education classes over the course of one semester (approximately four months).

As stated above, the objectives of this study were to learn how other secondary physical education teachers might adapt the #active365 challenge to suit the needs of their classes and contexts, to understand teacher experiences regarding the benefits and challenges of student participation in the #active365 challenge, as well as the opportunity for social media challenges like #active365 to encourage physical activity as an extension of physical education. Using social constructionism framing, importance was placed on constructing knowledge through the sharing of the #active365 challenge and working to understand teacher participants' experiences.

Data Collection Methods

Instead of limiting my approach with strict and rigid methodological boundaries (Clarke & Visser, 2019), a pragmatic approach to multiple case study research allowed me to explore this research remotely through the following data sources: (a) an open-ended preliminary questionnaire for teachers; (b) teacher participant field notes; (c) teacher participant social media posts; (d) a semi-structured one-on-one phone interview with each teacher participant, conducted at the conclusion of the data collection period. The following paragraph identifies the purpose of the data sources and briefly discusses how the data contributed to this research.

First, the open-ended preliminary questionnaire for teachers was used to gather demographic information as well as information regarding social media and mobile device use, detailed in the Participants section of this manuscript. Second, within a Google Doc, teacher participants were asked to document field notes by posting screenshots of #active365 posts received from students and recording detailed notes each time #active365 was mentioned in class; this datum was to contribute information that I was unable to document due to the remote nature of this work and to fully embrace the social constructionism approach to knowledge, leveraging the voice and communication of the teacher participants' experiences. However, at the end of the data collection period, teacher participant field notes revealed only brief jottings regarding initiating the #active365 challenge with classes in September 2017; teacher field notes were not contributed to by teachers for the remainder of the semester. This is a limitation in data collection due to the nature of this remotely conducted research. Third, the social media posts were used to cross reference and supplement my interpretations of what teacher participants described in the one-on-one interviews. Finally, each teacher participant engaged in a one-on-one semi-structured interview at the end of the data collection period. While the one-on-one interview is not significantly triangulated with other data sources in this study, from a social constructionism perspective that values the interpretation of the participant and places

value on language that is shared (Burr, 2003), the one-on-one interview is a valuable and meaningful account of the teachers' experiences with their class or classes.

Participants

Teacher participants were recruited through convenience sampling to engage in the #active365 challenge with their own classes for a period of one semester (approximately four months). Emails were distributed to Alberta physical education teachers within my professional network. However, the two teacher participants that expressed interest in this study initially contacted me through direct messaging on Twitter following a conference presentation regarding the #active365 pilot study; prior to this, I did not know these individuals. Teaching secondary physical education, speaking English, and expressing interest in the #active365 challenge were the only criteria used for teacher participant selection.

Once teacher participants were confirmed, I attempted to recruit teacher participants' students to be part of this research. I recorded a video of myself explaining the study, which was privately posted on YouTube and shown to students during class time. I planned to collect student #active365 posts and engage students in a questionnaire at the end of the data collection period; these data would be used to contribute to my understanding of teacher experiences with the #active365 challenge. For example, if students did not engage in the #active365 challenge, I may have gained perspective as to why students did not participate. However, no students volunteered to be involved in the study.

Case Study A took place in an Alberta city of fewer than 70,000 people. The male teacher participant (hereinafter referred to as the pseudonym Travis) taught at a Catholic high school of approximately 950 students from Grades 9 to 12. Travis had been teaching secondary physical education for six years and involved one Grade 11 and 12 combined physical education class in the study, populated by 26 boys and two girls.

Case Study B took place in an Alberta town of fewer than 15,000 people. The male teacher participant (hereinafter referred to as the pseudonym Henri) taught at a French immersion school of approximately 200 students from Kindergarten to Grade 12. Henri had been teaching secondary physical education for three years and involved Grade 8, 9, and 10 physical education and health classes in this study. The Grade 8 class contained 12 boys and four girls, the Grade 9 class was populated by seven boys and 10 girls, and the Grade 10 class involved seven boys and four girls.

Specific to the technology used in this study, Travis indicated that he owned multiple mobile devices with photo-taking, Wi-Fi, and data capabilities, including an iPad, smartphone, and digital camera. Travis also noted that he used social media daily, predominantly through applications including Facebook, Snapchat, and Instagram. Similarly, Henri owned an iPad and smartphone which offered data and Wi-Fi capabilities, as well as accessed a variety of social media applications including Facebook, Instagram, and Twitter, 10–15 times per week.

Additionally, Travis indicated that all students in his class had access to a mobile device with photo and Internet capabilities, either owned by the student or available for

sign-out from the library, while Henri indicated all students had their own mobile device with photo and Internet capabilities. Both teachers reported that they intended to role-model the #active365 challenge with their classes in their own social media posts, as done in Taylor (2018).

Procedure

Research began in September 2017 when teacher participants were sent a comprehensive email with #active365 challenge files including an informed consent letter for the teacher, an informational letter and informed assent/consent letter for students and parents/guardians, as well as a link to a student participant recruitment video. Students were offered the opportunity to voluntarily participate directly in this research; however, students were also offered the opportunity to engage in the #active365 challenge with their teacher without being part of this research, noted in the Ethical Considerations section below.

Teacher participants were also sent a start-up guide and #active365 challenge poster. The start-up guide included step-by-step instructions as to how to initiate the #active365 challenge within the school, as well as a conversation guide for commencing the challenge with students, including information on cyberbullying. The #active365 challenge poster offered students a visual reference regarding the #active365 challenge, that teachers could hang in their hallways. Identical formatting in communications and materials were sent to participating teachers to ensure consistency in #active365 challenge baseline. Based on my experiences with the #active365 pilot study, I developed the aforementioned resources provided to teachers.

Teacher participants took on the #active365 challenge with their classes for the duration of one semester, from September 2017 to January 2018. Following preliminary emails sent and communication at the beginning of this data collection period, teachers were encouraged to independently take on the #active365 challenge in whatever direction they felt meaningful to their students and context, for the remainder of the semester. Data collection through teacher field notes intended to support teacher direction and independence with the #active365 challenge. In January 2018, I reconnected with the teachers in the study to conduct one-on-one interviews.

Ethical Considerations

When social media is used in educational research, it is important to identify ethical decisions made given the various technical nuances and possible ethical pitfalls within the use of this ever-evolving technology (Goodyear, 2017). My intention with this section of the manuscript is to identify ethical decisions made for this study.

First, approval to begin this research was granted by a university interdisciplinary committee on ethics in human research, as well as each teacher participant's principal. Additionally, informed consent was received from both teacher participants and the collection of data was authorized for publication and presentation.

Second, student participation was desirable for this research to gain additional perspective and further inform my understanding of teachers' experiences. Literature suggests there are differences between adult interpretations and youth lived experiences

with social media and that the student voice is important in gaining perspective regarding youth social media experiences (Goodyear et al., 2019; Kirk, 2019). However, no students and parents/guardians provided informed assent and consent respectively for direct involvement in this research and therefore any student-specific information or data observed during this study were not used in data analysis.

Third, prior to data collection, teacher participants were asked to offer the #active365 challenge to all students in their class, regardless of student participation in the study. During student participant recruitment, it was asked that all student and parent/guardian questions specific to the study, such as questions related to the use of data or publications following the study, be emailed directly to me. Otherwise, student questions regarding the #active365 challenge were to be directed towards the teacher; this was communicated to students, parents/guardians, and principals in letter form. These considerations were made with the intention of avoiding student feelings of obligation to participate in this research.

Fourth, to further avoid student feelings of obligation to participate in the research, during recruitment, I communicated that if students were to be involved in the study, teachers were not to be informed of which students participated in the study. Teachers were asked to include all documentation of #active365 posts and related conversations in their teacher field notes Google Doc. I planned to analyze data for students who engaged in the research and disregard data for students who did not volunteer to be part of the study; this would resemble the nature of a researcher physically situated in a classroom, recording notes about students in the study and disregarding observations made about students who did not opt into the study.

Fifth, as a researcher, I was not directly involved in public discussions on social media. This was done to avoid any interruption in the #active365 challenge and the direction that teachers chose to pursue the challenge, as well as out of respect for students and parents/guardians who did not demonstrate interest in, or informed assent/consent for the research.

Sixth, as part of the introduction to the #active365 challenge, cyberbullying was addressed. Within the start-up guide, as well as mentioned within the informed consent letters, it was indicated that any form of cyberbullying recognized by or reported to the teacher participant would involve immediate removal from the research and/or the #active365 challenge with their teacher. Following up on this condition was left to the teacher participants' discretion. Teachers did not report any issues with cyberbullying during this study.

Lastly, the hashtag used within this manuscript, #active365, was the original hashtag that inspired this work and the pilot study. The decision to use the #active365 hashtag here was due to the following reasons: (a) to keep a consistent frame of reference between conference presentations and publications; (b) the #active365 hashtag has been tagged thousands of times by a number of users and businesses displaying public posts on social media (Instagram, 2020); (c) searching #active365 on social media applications used in this study does not openly reveal the participants of this study, with the time frame of the data collection considered.

Data Analysis

As identified above, the methods of data collection included: (a) an open-ended preliminary questionnaire for teachers; (b) teacher participant field notes; (c) teacher participant social media posts; (d) a semi-structured one-on-one interview with each teacher participant. The data analyzed in this study were predominantly derived from the one-on-one teacher interviews conducted at the end of the semester; one interview lasted 35 minutes and the other lasted 55 minutes. A list of semi-structured interview questions was asked during the remotely conducted one-on-one phone interview. Interview questions were all designed and informed by my own experience with the #active365 pilot study and explored teacher experiences with the #active365 challenge; specifically, questions asked about social media use and posts received, the nature of student engagement, benefits or barriers the teachers encountered, role-modeling, and overall impressions. The interviews were audio recorded on a password-protected iPad using the application Voice Record. Interviews were transcribed verbatim and stored using password-protected Google Docs. Once transcription was complete, teacher participants were sent the transcribed interview via email for their information and were asked to identify any questions they may have regarding the data; no issues were identified by the participants.

Data were first reviewed with the purpose of identifying common words and phrases, which were then assigned codes (Bogdan & Biklen, 2007). A total of 40 codes were determined and used to organize the data. Patterns within the coded data led to the development of coded categories, which is an important step in the analysis of data (Bogdan & Biklen, 2007). Fifteen different coded categories were identified, and the data was read through for each coded category and saved as a separate document. Through comprehensive and detailed notetaking during the analysis, the 15 categories were later expressed as four main themes within the data. Once analysis of the data was complete, a debriefing letter with identified themes was emailed to each teacher participant for their information. Participants were asked to identify any errors in data interpretation; no errors were identified.

Reflexivity

As mentioned above, it is important for me to reflexively consider my position within the research, especially considering the #active365 pilot work I was directly involved in. The following paragraphs offer information about my position and perspectives regarding physical activity, physical education, and my biases towards the #active365 challenge.

Raised by a family who values an active lifestyle, I was immersed in competitive and recreational physical activities throughout my youth and played varsity basketball in university. I value and enjoy being physically active and I believe that with an individualized and contextualized approach, I can help others to find joy in physical activity as well. Due to my desire to help others and my passion for physical activity, I pursued a career as a physical and health education teacher. I had the privilege of teaching secondary physical and health education for eight years and primary physical education for one year. The #active365 challenge was an organic initiative that arose from my observations in

schools and as someone who used a smartphone and accessed social media applications regularly, I was excited for the opportunity to use technology that I enjoyed as well. While teaching full-time, this research was completed as part of the requirements for a Master's degree.

From a social constructionism perspective, my experience with the #active365 challenge provides insight to this work and contributes to my interpretations of the findings within this study. For example, when teacher participants described student #active365 posts, I reflected on my own experiences with the #active365 challenge and how I enjoyed learning new things about my students, such as the recreational activities they engaged in or the teams they played on. However, my involvement with the #active365 pilot work is also reason to explore my perspective for biases. Considering my own experiences with the #active365 challenge, I benefited both personally and professionally. Detailed in Taylor (2018), I benefited personally from role modeling daily physical activity and benefited professionally by getting to know my students better and developing stronger relationships with them, which informed my practice and supported report card comment writing. From a social constructionism perspective, I recognize the uniqueness of each context; however, due to my axiological perspectives related to helping others, I hoped that the #active365 challenge would benefit the teacher participants in this research and inspire new avenues of pedagogy, avenues that would be meaningful to them and their classes moving forward. Taking this into consideration, I also recognize that limitations and barriers identified in my research will contribute to an ongoing exploration as to how physical education teachers might support student physical activity through social media. Throughout my analysis of the data as well as in reporting results, I reflexively considered my position with this research as a voice in the construction of knowledge regarding opportunities for engaging physical education students in physical activity through social media.

Results and Discussion

Through the examination of the data from Case Study A and Case Study B, four main themes were identified: (a) social media and secondary physical education outcomes; (b) student resistance to the #active365 challenge; (c) #active365 and student/teacher communication; and (d) age or grade level and #active365 participation. Detailed below, these themes give an indication as to how teacher participants adapted the #active365 challenge to their specific context, the benefits and barriers associated with student participation, and the opportunity for student physical activity engagement outside of class time through the #active365 challenge.

Social Media and Secondary Physical Education Outcomes

In both Case Study A and Case Study B teacher participants reported receiving student photo posts demonstrating physical activity endeavours outside of class time through the #active365 challenge. In Case Study A, Travis expressed that he received "seven posts on Facebook and seven posts on Google Classroom" for a total of 14 active photo posts from 14 of his 28 students. In Case Study B, Henri received 31 active photo posts in total, where 22 posts were submitted by 10 of his Grade 8 students, and nine posts

were submitted by three of his Grade 9 students; none of his Grade 10 students chose to post photos. Across cases, physical activities that students demonstrated throughout the semester included dancing, walking, cross-training, skiing, cross-country skiing, rock climbing indoors and outdoors, biathlon, taekwondo, playing in the leaves, hockey, football, wakeboarding, volleyball, basketball, and rugby. Considering the four-month period students were given to submit #active365 posts, these data indicate there were relatively few #active365 submissions that demonstrated student physical activity outside of class. Student resistance to the #active365 challenge is discussed below as another theme that emerged from the data.

In Case Studies A and B, teachers were flexible with student submission of photos, to support all students in their class, regardless of social media use. In Case Study A, students submitted photo posts publicly on a group Facebook page, privately through Google Classroom, or showed their image or video physically to the teacher, on their device in class. In Case Study B, students submitted photos privately or publicly using Instagram, SnapChat, and Facebook applications. Google Classroom was used for private submissions only, and parents/guardians of students who did not use social media submitted photos directly to the teacher.

In Case Study A, Travis encouraged his students to self-reflect on physical activity as part of the #active365 challenge. He noted, "it started with them taking photos and being deliberate with, okay where, when am I active, what evidence do I have that I am actually in fact active…[and] how am I maintaining that?" Interestingly, following receiving student active posts, Travis then adapted the #active365 challenge to meet the needs of his class. He used #active365 as a springboard to discuss physical education curricular outcomes that he found difficult to achieve through physical activity in class and "evolved [the challenge] based on [the] needs of [his] students and the needs of [his] curriculum." Observed through his public social media question-and-answer style posts, Travis facilitated student discussion with questions regarding body image influences, consequences of living an inactive lifestyle, ways to maintain a healthy lifestyle following high school graduation, stress management methods, performance enhancing substances, and issues related to physical activity – all directly related to outcomes identified within the Alberta physical education curriculum for grades 11 and 12 (Alberta Learning, 2000). For example, outcome B20-5 states that students will "discuss the effects of performance-enhancing substances on body type and body image as a part of physical activity," which Travis embraced in a discussion regarding substance use by athletes during the Olympics. Although the #active365 challenge was originally intended to focus on demonstrating physical activity, Travis noted that the challenge "gave [him] an avenue to really deliberately…discuss and provide insight to those topics that otherwise are challenging to [demonstrate] in a [physical education] setting." Travis also suggested, "health literacy and health education [is a] component…[of] our [physical education] classes [and] one of the biggest topics and biggest units that…[get] overlooked" in Alberta physical education. Emerging health literacy conversations as part of the #active365 challenge is further discussed below.

In Case Study B, Henri noted, "I used my health class to promote [the #active365] project and I talked about it in [physical education] as well." He continued, "what I realized

a lot too, and it's helping me a lot for my teaching…is that [the students] all do individual sports." Henri indicated that he learned, "the kids that actually posted the images are really high-level athletes," and he worked to incorporate similar activities into class, informing his physical education programming. Identifying student interests in physical activity through the #active365 challenge and applying that information to course content was also found in the #active365 pilot study (Taylor, 2018).

Through the discussion in health class, Henri indicated the #active365 challenge evolved into a conversation regarding privacy settings and public exposure through images posted on social media,

> Some people discovered that some are very…active on social media, and…they were shocked about how exposed some people are. And then we talked about in health class…how visual print…can affect our lives in general later on too and the affect that it has.

Following conversation regarding the nature of public exposure through social media posts, Henri helped students to understand how account settings can help protect individuals using social media. He helped the students to understand "where these images go and…the permissions you can give for images…so that they…could come to just the teacher," and that "if you don't [change] the setting, the image can be for anybody."

Interestingly, the conversations regarding privacy and social media were inspired by the students in Henri's class, not by his curriculum, as health literacy concerning social media is nowhere to be found in the Alberta program of studies (Alberta Learning, 2000; 2002a; 2002b). While it is important that youth receive educational support to inform them of privacy settings, especially for populations who are less experienced, like the younger secondary students in this study (Feng & Xie, 2014), literature suggests that discussing social media in education should not stop at a conversation regarding privacy settings (Goodyear et al., 2019). Physical education teachers need to address issues concerning social media and topics such as peer pressure (Goodyear et al., 2019; Kirk, 2019), to help students manage the information and images they navigate online.

In Cases A and B, both teacher participants received photos demonstrating physical activity for the purpose of the #active365 challenge. Although relatively few photos were received, those posts suggest that it is possible to engage students in documenting physical activity outside of physical education class time using social media, further informing physical education curriculum outcomes. Additionally, both teacher participants in this study used social media as an opportunity to discuss health literacy, which was not an objective of the #active365 challenge, but the teachers' response to the perceived needs of their classes. Literature supports the notion that social media should be a part of health literacy discussions in physical and health education (Kirk, 2019).

Student Resistance to the #Active365 Challenge

While I hoped that students would be eager to embrace the #active365 challenge, a bias I recognized, a significant finding in this study is that students largely demonstrated a lack of engagement for posting active photos of themselves. The teachers from both case studies identified difficulty with engaging students to take active photos for the #active365 challenge.

Some of Travis's students indicated it was logistically difficult to obtain images of themselves while active and noted, "a lot of them were doing some extracurricular activities and they wanted to highlight that, but obviously if they're participating in a game or a practice, it's hard to get a photo of that," as students would not have their mobile devices with them during a football game, for example. He continued, "one of the hurdles [the students] said, 'I do all these things but it's not every day I get a photo of it.'"

Reflecting on effort invested in working to motivate students to engage with the #active365 challenge, Travis noted, "it was a little bit of a pain in the butt…like pulling teeth for some of those boys," but "they were not negative towards it." Important for consideration was the low female representation within Travis's class, where 26 of 28 students identified as male. The gender majority of Travis's class was not discussed with him; however, it may have impacted the degree to which students chose to engage with social media. Studies have shown that adolescent females are more likely to engage in social media endeavours than their male counterparts (Ahn, 2011; Feng & Xie, 2014; Sampasa-Kanyinga & Chaput, 2016; Van Kessel et al., 2016).

In Case Study B, Henri identified that he struggled to motivate students to embrace the #active365 challenge and was surprised that students were not keener to participate in the opportunity. He noted,

> The only real problem I had was to get [the students] involved…I'd say not as many as I thought would adhere to the project, as I expected a lot more of the students to want to do it…for some reason, it didn't really get on…At the beginning…it just kind of died down and even every time I brought it back, [students said], "oh not that, not that, we don't want [that]" so in a way I was a little bit shocked because I expected [the students] to want to show more images.

Henri also identified the efforts he made to promote ongoing student participation throughout the semester. He regularly reminded his students to post, demonstrated posts in class, role modeled posts on his own profiles and offered all social media applications the students asked for. Henri noted, "I brought it back a lot; I had big signs on the walls in the gym and the classroom, on the window when they come in, and still no interest in showing the images of them doing it." He continued, "which kind of surprised me because they always have their phone."

While the teacher participants and I can speculate as to why students did not fully embrace the #active365 challenge, the reasons behind Henri's and Travis's experiences with student disengagement may have been better informed had students participated in this research. Future studies embracing social media within physical education may benefit from gathering student perspective, especially considering that youth experiences and adult perception of youth experiences with social media differ (Goodyear et al., 2019; Kirk, 2019).

#Active365 and Student/Teacher Communication

Both Travis and Henri expressed a perceived benefit from engaging with some of their students online through social media. It was indicated by both teachers that the communication and relationships they shared with some students benefited when students participated online using the social media platform.

Travis noted that already strong relationships with his Grade 11 and 12 students were further encouraged when he posted photos of himself role modeling the #active365 challenge with his own child. Travis noted, "I want to model it for the [students], show them that this is what it looks like." He added, "I would post…pictures of me, pictures of my [child and me] to try and model the…type of activities and examples that…I was looking for." In response to Travis's #active365 posts, students struck up conversation in class. Travis positively reflected, "they would talk about it…I have been fortunate that I've worked with a good majority of those kids that I teach so [we] have that relationship already." Travis added, "I can talk about [my child] and then it's enhancing [the relationships] even more where you know there's a video of [my child] … [The students] would talk about stuff like that too. It's pretty sweet."

While Travis noted that the #active365 challenge further fostered already strong relationships he shared with his students, Henri also positively reflected on the relationships he felt developed with some of his students through the #active365 challenge. Henri noted,

I'd say that some of the kids that showed their images, I discovered a new, you know like a new aspect to them, and two of the girls that actually posted gained confidence and I created a better link, you know, not link, but…relationship, just because they were proud of showing this and started talking about it and were less shy to come to me.

As done in Travis's class, Henri also role modeled the #active365 challenge. Henri noted, "I did participate, at the beginning where I even just showed like, you can have a picture of your family. You know, I posted different images, I showed the images in class as well." The literature highlights the importance of role modeling desired behaviour in physical education. It is important that physical education teachers foster an active class environment as well as role model competence in that behaviour (Baghurst & Bryant, 2012; Bradford et al., 2014; Gold et al., 2012). What is particularly interesting is that many students demonstrated a lack of interest in continuing to post #active365 photos in this study, despite teacher role modeling efforts.

Both teacher participants in this research indicated that the #active365 challenge facilitated conversation with some of their students. Improved communication and relationship development between teachers and students through social media was also identified in the pilot study (Taylor, 2018) and has been found in other studies as well (Balcikanli, 2012; Chen & Chen, 2012; Krutka et al., 2017; Nowell, 2014). However, this finding must be considered alongside the relatively few #active365 posts submitted in both Case Studies A and B over the course of the semester, suggesting that improved communication occurred with a relatively small number of students in the teacher participants' classes.

Age or Grade Level and #Active365 Participation

While Travis taught Grade 11 and 12 secondary school students, Henri taught Grade 8, 9 and 10 secondary students. Two differences were noted regarding the teacher participants' experiences with the #active365 challenge: (a) some students in the younger grade levels were restricted by their parent/guardian from participating in the social media

challenge while older students were not; and (b) assigning grade points to younger students for physical education outcomes achieved through social media was perceived to be more difficult than assigning grades to older students.

While in Case Study A, Travis did not encounter any concerns from parents/guardians, in Case Study B, Henri found that a few parents/guardians would not allow their child to use a social media profile of any kind. Henri noted, "I got a few kids that don't have…also and their parents won't allow…accounts like Facebook, like social media accounts," and "there's a lot of parents that don't allow images of their kids to be posted on the [school] website or used in any means by the school."

Consistent with literature, parents/guardians of youth have been found to apply restrictions to their teens' social media consumption, including where and how often it is accessed (Daneels & Vanwynsberghe, 2017; Symons et al., 2017). However, Henri indicated that no parents/guardians expressed concern regarding the #active365 social media challenge itself. In fact, two parents/guardians who restricted their child from using social media, reached out to Henri directly to submit #active365 posts for their child, "because I said it was something for class and those parents, the two parents…sent [the posts] to me…so I got a few videos like that."

Where assigning grades are concerned, in Case Study A, Travis assigned grades to students who demonstrated the achievement of outcomes through social media, which was also done in the pilot study (Taylor, 2018). Reflecting on the student contribution to posts regarding body image on social media, Travis detailed, "essentially everybody…commented on that topic," and when students provided written "proof" of their knowledge regarding those outcomes, that "set [him] up and set the stage for [him] to really dig deep and get evidence…and actually…cover [his] tracks on achieving outcomes." Travis indicated, "it was a really good opportunity for me to say yes, [a student] has achieved a lot of these outcomes because I have all this evidence here," and "they would receive a grade for that." Travis assigned grades to students for outcomes achieved through social media; however, exactly how Travis assigned those grades was not discussed in the interview. Literature suggests that social media can be used in a variety of subject disciplines and can offer pedagogical opportunities (Al-Dheleai & Tasir, 2017; Daniels & Billingsley, 2014; Krutka et al., 2017), including opportunity for students to demonstrate educational outcome understanding (Graham, 2014), which informs assessment in quality physical education programs (Penney et al., 2009).

In Case Study B, Henri expressed that he found difficulty in assigning student grades for #active365 posts. He noted, "At first that's how I presented it, that it would be part of their report card," however concerning grade input, "the way it has to be set up so that [it is] extracurricular and not everybody does it, is more complicated than anything else." Henri added, "it's hard to give [students] marks for something that's done outside of school and that's not mandatory." Henri also noted that the students who submitted #active365 posts were already top mark earning students who did not need improvement in their grade. Henri indicated, "it requires a lot of extra work and fine tuning for what it's going to give, and those kids don't need the extra grades anyways." Mentioned above, social media platforms can be used to further educational opportunities; however, literature

that identifies differences between younger and older secondary student assessment when assigning grades for course work demonstrated through social media is lacking.

While assigning grades for curricular outcomes demonstrated through social media was perceived as difficult for Henri with his Grade 8 and Grade 9 students, Travis did not indicate any difficulty assigning marks for his Grade 11 and Grade 12 students. Assessment was not discussed at length with teacher participants; however, it is important to note that when students receive grade points for participation in an opportunity similar to the #active365 challenge, quality physical education requires directly linking pedagogy, curricular objectives, and assessment (Penney et al., 2009).

Conclusion

The objectives of this research were to explore the experiences of secondary physical education teachers' use of the #active365 challenge in their classes and to better understand: (a) benefits and barriers of student participation, (b) how the #active365 challenge might be adapted in different contexts, and (c) opportunity for student physical activity engagement using the #active365 challenge.

A significant finding in this research was the general lack of engagement students demonstrated regarding posting active photos for the #active365 challenge throughout the semester. While teachers were happy to role model physical activity with their own posts and felt benefits of improved communication and relationships with some of the students who posted, students demonstrated a general lack of interest in continuing the #active365 challenge with posts that depicted physical activity efforts outside of class.

Another important finding in this research was how teachers used the #active365 challenge as a launchpad to engage students in health literacy conversations. While the #active365 challenge was intended to focus on demonstration of student physical activity efforts outside of class, teachers were encouraged to explore #active365 in whatever way they felt would be most meaningful in their specific context; interestingly, both teachers naturally navigated towards health literacy conversations.

Moving forward, related research regarding student involvement in social media as part of physical education programming may benefit from exploring opportunity for documenting or discussing physical and health literacy, directly related to the curriculum. Additionally, there is a need for further empirical research related to how physical education teachers might support student physical activity online using social media applications; particularly, an exploration as to how social media challenges can *motivate* all students to be active outside of class would be meaningful. This is an important area of exploration especially considering online physical and health education programming as well as the teaching modality adjustments affected by the COVID-19 pandemic. Future related research should also look to involve student perspective in data collection methods due to inconsistencies between student experience and adult perceptions of student experiences with social media (Goodyear et al., 2019; Kirk, 2019). Additionally, given the emerging nature of health literacy conversations in this research and the absence of social media-related outcomes in the curriculum used (Alberta Learning, 2000; 2002a; 2002b),

further work needs to be done to update curricula and incorporate current literature in the writing of curricula in Alberta.

There are important limitations to consider for this study. First, no students in either of the case studies participated directly in the research, therefore student perspective was, at best, assumed by their teachers. As mentioned above, this is an area of opportunity moving forward for studies looking to achieve physical education curricular outcomes through social media. Second, one of the two case studies investigated in this research involved predominantly male students, which may have influenced the degree to which students engaged in social media. Third, due to the remote nature of this research and incomplete teacher participant field notes documented, data was primarily drawn from one-on-one interviews with teacher participants. While the interviews offer strong accounts of the teacher participants' experiences, additional efforts to collect data for the purpose of triangulation would be desirable moving forward. Fourth, I had established a professional relationship with the teacher participants in this research prior to this study, as they received information regarding the #active365 challenge at a conference presentation regarding the pilot study.

Finally, the two case studies detailed in this report are not generalizable; however, these results can inform physical education teachers who are eager to use social media technology in their classes. This research suggests there is opportunity for engaging secondary students in the achievement of physical education curricular outcomes using social media, that teachers may benefit from improved communication with students who participate, and that it may be easier to engage older secondary students in related work. Additionally, results from this work indicate that physical education teachers might anticipate student resistance to social media challenges similar to #active365 and should make related challenges optional to students. While all students in this study had access to mobile devices, teachers must be aware of and sensitive to their own students' access to technology and offer multiple modes of submissions (email, showing work on mobile devices in class, signed notes from parents) to support students. Additionally, to further support students and their varying comfort levels with social media, teachers should encourage public or private submission of posts or other content. Furthermore, based on the pilot study as well as reasons unknown to teachers for student disengagement in this research, I encourage teachers to invite student feedback and adjust the approach to social media use in classes accordingly; social media is constantly evolving and new applications such as TikTok should be explored and discussed with students. Finally, including social media in health literacy discussions in physical education classes is encouraged.

Acknowledgements

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