

Exploring Social Media and Student Engagement in Physical Education: A Multiple

Case Study Approach

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A Thesis submitted to the School of Graduate Studies in partial fulfillment of the
requirements for the degree of:

Master of Physical Education/School of Human Kinetics and Recreation

Memorial University of Newfoundland

January 2019

St. John's Newfoundland and Labrador

Abstract

Purpose: This study examined the benefits and challenges of a social media program to demonstrate student physical activity and literacy outside of physical education (PE) class time. **Method:** A multiple case study approach was used to identify the experience of two secondary PE teachers and their use of a social media program. **Results:** Based on the experience of the teachers, four main themes were identified following analysis of the data: a) social media can support the achievement of secondary level PE outcomes; b) social media can help improve student/teacher communication and relationships; c) students can demonstrate resistance to social media program adherence; and d) age or grade level can affect social media student participation. **Discussion/Conclusion:** Specifics regarding achieving PE outcomes through a social media extension of the classroom are examined. Benefits to the teacher and student are discussed and include improved communication and relationships between student and teacher, improved student grades, an opportunity for teachers to improve role modeling, student opportunity to actively use typically sedentary behaviour encouraging technology, and student opportunity to see positive health communication through social media. Challenges regarding running a social media program within PE are discussed and include student resistance to social media program adherence, parental resistance to student social media involvement, and difficulty in grade justification for younger secondary students. Suggestions are made for PE professionals looking to incorporate social media within their PE programs.

Acknowledgements

I would like to thank my thesis advisors Dr.'s Erin Cameron and Linda Rohr for their mentorship and work with my research and thesis, my committee members for guiding me and pushing me to do my best, my research participants for their dedicated work towards this study, and my wonderful husband for supporting me with patience and encouragement throughout this journey.

Table of Contents

Abstract.....	ii
Acknowledgements	iii
Table of Contents	iv
Introduction	1
Literature Review	2
Improved Task Efficiency and Convenience: A Culture of Inactivity	3
Twenty-first Century Communication: Globally Connected, Locally Sedentary	6
The Popularity of WMD and Social Media	8
WMD and Social Media in Education	10
Screen Time Facilitated Physical Activity.....	15
Screen Time and Harmful Messages	19
Methodology/Methods	21
The #active365 Pilot – My Teaching.....	21
Qualitative Approach - A Multiple Case Study	29
Research Design	32
Participant recruitment	32
Data collection	33
Teacher preliminary questionnaire.	34
Public social media posts.....	35
Teacher participant field notes.	35
Interview with the teacher participant.	35
Thematic Analysis	36

Social Media in PE

Manuscript.....	38
Literature Review	39
Popular Technology and Sedentary Behaviour	39
Social Media and WMD Use in Education.....	40
Screen Time Facilitated Physical Activity in PE.....	41
Method.....	42
Research Design	42
Procedure	43
Participants.....	44
Data Collection and Analysis	45
Results	46
Social Media Supports Secondary Level PE Outcomes	47
Student/Teacher Communication and Relationship Improvements	50
Student Resistance to School-Based Social Media Programs	51
The Affect of Age or Grade Level on Social Media Student Participation.....	52
Discussion.....	53
Recommendations and Final Thoughts	58
References	60
Summary.....	67
Limitations	70
Moving Forward	71
References	72
Appendix A – Teacher Participant Consent Form	82

Social Media in PE

Appendix B – Letter for Principal	90
Appendix C - #active365 Start Up Guide.....	94
Appendix D - #active365 Program Poster.....	101
Appendix E – Teacher Participant Preliminary Questionnaire	102
Appendix F – Teacher Participant Interview Guide.....	104
Appendix G – Recruitment Letter for Teachers	108
Appendix H – Student/Parent Informational Letter	110
Appendix I – Teacher Participant Letter for Transcribed Interview	112
Appendix J - Teacher Participant Letter for Data Themes.....	114

Introduction

Every year more Canadians use wireless mobile devices (WMD) to connect to the Internet (Canadian Radio-television and Telecommunications Commission, 2016). In a globalized world where shift work, schooling, and individual schedules vary throughout all generations, millennials use WMD and social media to flexibly communicate and stay connected with their peers despite differing individual schedules (Ahn, 2011; Botterill, Bredin, & Dun, 2015). While increased communication is beneficial, there is growing concern that youth are increasingly sedentary and more frequently in front of a computer screen, which negatively impacts their physical and mental well-being (Marques, Calmeiro, Loureiro, Frasilho, & de Matos, 2015; Mitchell, Pate, & Blair, 2012). Furthermore, the misleading body ideals construed through media negatively impact youths' self-esteem, body image, and mental health (Tiggemann & Miller, 2010; Tiggemann & Slater, 2013; Tiggemann & Zaccardo, 2015).

Despite these concerns, some researchers have argued that schools and teachers could play a critical role in helping to use WMD or social media in a meaningful way in order to better engage students in their education (Casey, 2013; Cochrane & Bateman, 2010; Graham, 2014; Nowell, 2014; Wallis, 2014). Some argue it is even more important in physical education (PE) settings to find new ways to use WMD and social media so youth can learn to use technology in healthy ways, as well as be educated on healthy behaviours through a more culturally-relevant tool for millennials (Van Kessel, Kavanagh, & Maher, 2016). This research seeks to contribute to the literature regarding how social media can be meaningfully used in a PE setting. The research question for this study asked: *How can PE teachers meaningfully engage students to be physically active as part*

of a healthy, active lifestyle using WMD and social media? Two main objectives were targeted: first, to understand the benefits and barriers of PE student participation with WMD and social media as an extension of the PE classroom; and second to determine how WMD and social media initiatives can engage students to lead healthy, active lifestyles outside of class.

In the pages that follow you will find my thesis, which includes: a) a review of the literature with regards to how WMD and social media are affecting today's youth; b) a detailed overview of my research (i.e., research methods, process, data collection, analysis methods, ethical considerations, and knowledge translation); c) a chapter manuscript formatted to be submitted to the *Journal of Teaching in Physical Education* for publication, which includes the results, discussion, and conclusion for my research; d) summary; e) references; and f) appendices. A manuscript style thesis has been used for the purpose of presenting this research in order to maximize opportunity for publication of results (Ahern, 2012).

Literature Review

Prior to beginning this research, an extensive literature search was conducted to identify key themes in the literature. Databases used to identify literature included PubMed, MEDLINE, SocioINDEX, EducationSource, SPORTDiscus, PsycINFO, and ProQuest. Each topic was identified using a combination of key search terms, such as: social media, youth, teen, physical education, physical activity, health, smartphone, technology, app, body image, and exergame. Literature published in the English language within the past twenty years was reviewed. While empirical research was the

main focus, grey literature and hand searches (i.e., reference lists) were also conducted to identify any other relevant literature.

From this review of literature, five main themes were identified. The first theme highlights the negative consequences of how technology has encouraged a culture of inactivity, where improved technological efficiency and invention have started requiring less and less physical energy from humans. The second theme identifies how contemporary social-cultural contexts are promoting innovative forms of communication but simultaneously facilitating sedentary behaviour. The third theme examines the use of WMD and social media by teens and adults and the benefits and barriers of incorporating WMD and social media into educational settings, specifically in PE. The fourth theme highlights how current technology can be used to facilitate physical activity. The last theme explores the negative impacts of social media on the mental health of youth and a discussion as to why it is imperative that youth develop the necessary skills to navigate through the media's mixed messages regarding health. The following section identifies research in these four key areas.

Improved Task Efficiency and Convenience: A Culture of Inactivity

Over the course of the past century a culture of sitting and inactivity has slowly evolved with improvements in technology. As technology advances, robots and other automated devices are replacing jobs due to the increased value of convenience, comfort, and time efficiency (Warde, 1999). For example, human operated assembly lines have become mechanized and automated. Certainly advances in technology have improved the quality of life for some individuals, reducing excessive strain on the body or improving productivity (Warde, 1999). These privileges however are often linked to

increases in sedentary behaviour. The invention of the desktop computer proved that the use of processing machines could be programmed and articulated to be used in a variety of ways from large scale jobs to finely refined tasks. Today, a variety of occupations require the use of desktop computers on a daily basis. Twenty first century urban professionals now find themselves sitting in front of their computers for hours on end, where the most active part of their day is moving to and from the office.

Where dial up connections were initially the sole method of connectivity to the Internet, society is now wirelessly connecting and instantly accessing the same content to a much greater extent and depth than ever before. Computers are replacing much of the personally programmed activity both within and outside of the household, from gaming and calling friends to controlling the thermostat, ordering groceries, watering the lawn, dimming the lights, and parking the car. The cell phone is now a smartphone, a WMD that offers an almost infinite number of possibilities that most often fits into a pant pocket. Individuals can access this technology from essentially everywhere, having constant access to the Internet. However, smartphones are often associated with inactive behaviours (Barkley & Lepp, 2016).

Every year, more people are using WMD to connect to the Internet (Canadian Radio-television and Telecommunications Commission, 2016; Ofcom, 2016). On that mobile device, millennials are connecting and communicating regularly with each other, often through social media (Ahn, 2011). Marques et al. (2015) notes that this time spent engaging with an illuminated screen may actually be negatively impacting the mental and physical well being of our youth (Marques et al., 2015).

The issue is not that we have endless technology possibilities; rather the physical effects associated with the increased time spent staring into these screens and the lack of energy expenditure that goes along with it are critical societal issues (Marques et al., 2015). Sedentary behaviour has been defined by a number of different academics both subjectively and objectively, however is generally considered to be behaviour that involves “low levels of energy expenditure” during waking hours (Kang & Rowe, 2015, p. 106). Youth are spending far more than the maximum recommended two hours per day engaging in sedentary behaviour (Colley et al., 2011). According to LeBlanc et al. (2015), Canadian youth ages 9-11 are spending on average 8.5 hours per day inactive with 45% accumulating more than 2 hours of screen time daily. Additionally, Leatherdale and Ahmed (2011) found that Canadian students from grades 6 to 12 are averaging 7.8 hours of screen time per day. Unfortunately, screen-focused-hours are often spent sitting still and are positively correlated with a decrease in both mental and physical wellness (Marques et al., 2015; Mitchell et al., 2012). Barkley and Lepp (2016) identify that 87% of the university-aged millennials in their study report that the behaviour they most often demonstrate while engaging with their smartphones is sitting. As a result of increased screen time, research has highlighted how youth are experiencing increased headaches, feelings of irritability, depression, and nervousness (Marques et al., 2015). Additionally, individuals who engage in more screen time also score lower on cardiorespiratory fitness tests (Mitchell et al., 2012). Especially within the last decade, inactivity is being attributed to an increase in chronic diseases (Egger & Dixon, 2009). Kenney and Gortmaker (2017) reveal that in their American study of more than 24,000 high school students, screen time was positively related to physical inactivity and

consumption of sugary drinks. Inactivity has also been linked to stress and an inflammatory response at the cellular level, indicating that a lack of physical activity may contribute to the development of a variety of chronic diseases (Egger & Dixon, 2009). Instead of actively engaging and communicating with neighbouring youth, today's younger generations seem to be sitting down to activate their screens.

Twenty-first Century Communication: Globally Connected, Locally Sedentary

Today, people are engaged in tasks around the clock and at all hours; some individuals engage in shift work for their occupation, youth are involved in extracurricular activities that fall outside of school hours, and businesses operate in multiple time zones, making it more difficult for friends and families to connect in person due to personal schedule restraints (Warde, 1999). As schedules grow further apart and individuals see less of each other, more demand is placed on finding alternate pathways for human connection and communication even when individuals are not together (Botterill et al., 2015). Part of the solution to our difficulty of communicating with our fragmented schedules is a mobile device that allows for connectivity on demand, with convenience determined by the user (Botterill et al., 2015; Warde, 1999). Today we live in a society where mobile communication technology is being used more than ever before (Canadian Radio-television and Telecommunications Commission, 2016; Ofcom, 2016). The Canadian Radio-television and Telecommunication Commission (CRTC) has identified that Canadians are showing consistent trends in favour of acquiring, using, and spending money on mobile services and devices (such as smartphones and tablets) for the purpose of communication and connectivity (Canadian Radio-television and Telecommunications Commission, 2016). Specifically, the CRTC details that 73% of

Canadians over the age of 18 own a smartphone and those under the age of 30 are spending three times the amount of any other age population in the country on their mobile services (Canadian Radio-television and Telecommunications Commission, 2016). Furthermore, Canadians increased their mobile data usage by 44% between 2014 and 2015, suggesting they are accessing more information on the go (Canadian Radio-television and Telecommunications Commission, 2016). The increasing tendency to use WMD such as smartphones in Canada is mirrored by other developed countries around the world.

Statistics and findings with regards to WMD and social media use around the world are important to consider as mobile connectivity transcends physical barriers and boundaries. Social media and WMD use is an internationally connected phenomenon where one can connect, befriend and follow individuals from all around the world. While general WMD trends are reported by the CRTC in Canada, Ofcom looks at WMD and social media trends specific to youth in the UK in far greater detail. It is important to consider statistics from other first world countries as this information may give more insight as to what is happening or could happen in Canada in the near future. According to the CRTC (2017), smartphones play an increasingly important role as more than 85% of Canadians who own a smartphone are using the WMD to access the Internet. In Canada, almost 100% of 15-24 year-old millennials own a smartphone or use the Internet on a daily basis (Statistics Canada, 2018). It is no wonder that today's teens are so focused on their mobile devices, considering that they have grown up in a world that is constantly connected.

The Popularity of WMD and Social Media

Walker (2013) identifies a mobile device as including such functionalities as Internet, phone capabilities, camera, email, text messaging, along with a variety of organizational and computational applications (also known as “apps”) which include a calculator and calendar. Walker (2013) also notes that the additional downloaded apps and the way mobile devices are used is largely based on the motivation of the user. The CRTC (2016) notes that smartphone users spend the majority of their time on their devices browsing the Internet, receiving or sending emails, texting, or accessing social media. Teens and young adults use smartphones to access, post, and share content for up to five hours per day, claiming that when it comes to communicating, their phones are paramount (Ofcom, 2016). Today, while waiting in line at the grocery store for example, an individual can pay their home utilities bill, check the status of their home security system, or message a friend before engaging with the cashier. Similarly, teens might play a game or comment on friends’ photos through social media. According to Makinson, Hundley, Feldhaus, and Fernandez (2012) the individually determined connectivity is giving reason for many university students to say that their smartphone activities makes life easier, allowing them to keep in better contact with their social circles; a sentiment that Clark, Algoe and Green (2017) identify as being positively correlated to positive associations of well-being through the interpersonal-connection-behaviours framework.

Statistics show that while smartphone use is increasing annually, social media use is also becoming more prevalent (Ofcom, 2016). Social media or social networking applications such as Twitter, Facebook, and Snapchat are platforms that enable sharing and networking between users (Ofcom, 2016). Applications such as Snapchat allow for

quick communication between parties anywhere in the world, a technological advantage that Warde (1999) would generalize as a “time-shifting device”, meaning a device that does not place instantaneous demand on a user like the immediacy a phone ring does (p. 3). Messaging within these applications, as well as other social media sites such as Facebook and Twitter, allows individuals to receive communication from others when it is convenient. Social media communication can include messaging, sharing links, as well as photos, many of which interactions take place while multitasking with other demands in the physical world (Botterill et al., 2015). The popularity of social media has increased significantly over the course of the past decade. In a smaller American study of one hundred students, Agosto and Abbas (2016) found that 98% of high school students owned a cell phone and 87% accessed social media sites once per week or more. Comparably, Statistics Canada (2018) states that 96% of 15-24 year old Canadians are using social media sites and applications on their devices. Further, Ahn (2011) found that 77% of American teenagers within the 15-17 age range use social media and more so females than males. Teenage girls in Australia are also frequently accessing social media, especially on WMD (Van Kessel et al., 2016). Additionally, Sampasa-Kanyinga and Chaput (2016) found that Canadian adolescent girls are more likely to use social media and for longer bouts of time than boys. Van Kessel et al. (2016) note that Australian students suggest Facebook is still used by many, but that other applications such as Instagram are gaining popularity and are favoured by those who have an Instagram account. Van Kessel et al. (2016) also echoed findings in the UK that suggest Twitter is decreasing in popularity. Based on the literature, teenagers and young adults

all over the world own WMD technology and are engaging more frequently in social media.

WMD and Social Media in Education

While the research that follows focuses primarily on secondary students (grades 7-12), it is important to highlight the literature on WMD and social media usage in post-secondary (university) educational contexts, as much can be learned and applied between the two when considering the use of WMD and social media in education. With additional literature to reflect on, procedures as to how teachers may adopt WMD and social media into an educational context can be better informed. Furthermore, statistics from countries around the world are often grouping millennial technology use together, where high school aged individuals and university students are jointly categorized (Canadian Radio-television and Telecommunications Commission, 2016; Ofcom, 2016; Statistics Canada, 2018).

Whether in their own homes or at school, regardless of Internet access in one spot or on the go, secondary students are finding a way to engage in technology and communicate with friends through digital media (Ahn, 2011). Secondary students are so interested in communicating, microblogging, and producing their own content online that quite often it consumes their time and distracts them from their studies (Nowell, 2014; Waycott, Bennett, Kennedy, Dalgarno, & Gray, 2010). Post-secondary students demonstrate some of the same behaviour, leaving educators understandably frustrated when studies show that young college student's peak media usage time on WMD and computers is between 11am and 9pm, dominating much of the typical academic day (Botterill et al., 2015). Students are multitasking with texting, talking, and activity on

social media, where one third of the total time spent on media takes place while on university campus (Botterill et al., 2015). Meaning, when students should be paying attention in class, they may actually be focusing on their devices instead. Hawi and Samaha (2016) note that 44% of university students agree that their smartphones provide a distraction from school work and lectures. Additionally, Alt (2015) suggests that students may feel a fear of missing out on what is happening in the world, which encourages their social media use at school.

Walker (2013) notes that many secondary schools often have strict policies regarding WMD use on campus. In classrooms, WMD can be used for cheating, cyberbullying, and disturbing other students (Walker, 2013). While cheating and providing distractions are tangible actions that take place in the physical classroom environment, the destructive actions of cyberbullying are communicated in the virtual world, causing schools fear of accountability and responsibility if cyberbullying were to take place during class time (Walker, 2013). Popular social media sites such as Facebook offer a public domain where individuals who post a statement can communicate with many people at one time, providing a platform that some students are indicating facilitates cyberbullying (Walker, 2013). However, in one study when a student was asked whether or not to ban WMD in schools to help prevent cyberbullying, they opted to keep their devices for learning purposes (Walker, 2013). Evidence has illustrated that students are so engaged in WMD and social media that they are identifying WMD use in schools as a benefit that outweighs the cost.

While cheating, causing disruption, and cyberbullying are all drawbacks of using WMD and social media in class, Inan and Lowther (2010) indicate that the older a

teacher gets the less computer proficient they are, suggesting more established teachers may find it difficult to keep up with what students are engaged and interested in online. Even at the university level, Reed (2013) indicates that younger university students demonstrate use of WMD and social media more than older university students. Further supporting the argument against the use of WMD in education, Philip and Garcia (2013) caution that while many students may be keen to adapt new and popular technologies into their education, not all students will necessarily appreciate this move. Simply adding new technological devices to the classroom will not automatically improve educational instruction and engage learners, which some individuals seem to assume (Philip & Garcia, 2013). Teaching is a profession that must grow and adapt as knowledge and innovation develop so educators can encourage today's youth to be successful in the future (Marciano, 2015). As Marciano (2015) so accurately states, "as technology and social media continue to evolve at a rapid pace, our work [as educators] must continue to evolve as well" (p. 78).

The unsupportive opinions regarding integration of WMD and social media into schools and classrooms is however challenged by a number of educators who advocate for adopting this technology to further engage their students (Casey, 2013; Nowell, 2014; Wallis, 2014; Marciano, 2015). For those that are given the opportunity to do so, some students suggest there are educational benefits to using their mobile devices (Walker, 2013). Students appreciate being able to use their WMD to set reminders for themselves to complete homework, take photos of notes in class, look up related information to the lecture much faster than on a laptop, as well as use video calls to complete group work remotely (Walker, 2013). A number of academics also advocate for and have shown the

benefit of capturing the attention of students in their learning by using social media as a pedagogical tool in both high school and university (Casey, 2013; Cochrane & Bateman, 2010; Marciano, 2015). Research shows that students of music, architecture, landscaping, and performing arts are effectively utilizing social media and WMD to demonstrate learning within their specific courses (Cochrane & Bateman, 2010). Wallis (2014) argues that giving students the opportunity to document, develop, and share information using social media applications, such as Instagram, involves and engages students in the design of their own learning in a meaningful way. In the best interest of today's youth it is important educators navigate how to incorporate social media into education (Balcikanli, 2012). Academics confirm that social media use in class encourages student participation and engages students in course material (Casey, 2013; Wallis, 2014). Additionally, some students indicate they are eager to use social media for communication and community building opportunities and would like to do so within an educational context (Reed, 2013; Rohr & Costello, 2015). Reed (2013) states that "...the use of social media (and Twitter in particular) can positively impact upon various elements of teaching, learning and the student experience" (Conclusion section, para. 1). Some PE teachers have professionally developed and benefited their students by using social media to exchange and build upon ideas for class (Goodyear, Casey, & Quennerstedt, 2018). Graham (2014) points out that social media provides an opportunity for educators to actively engage students in course matter, encouraging students to spend more time studying the subject, ultimately improving student learning and understanding as to how to problem solve in that area. Van Kessel et al. (2016) adds that educational work involving social media should focus on WMD use, specifically

smartphones, as the Australian teenage girls in their study were keen to access social media by using their phones specifically.

Sibley and McKethan (2012) identify that in comparison to other subjects and faculties, physical education (PE) typically lags behind in technological innovation. There are however a number of technological resources adaptable to PE, such as pedometers, heart rate monitors, accelerometers, video games, and WMD (Krause, Franks, & Lynch, 2017). Additionally, some studies show that PE teachers can professionally develop and benefit their students by using technology such as social media to exchange and build upon ideas for class (Goodyear et al., 2018). To enhance education for twenty-first century students, PE teachers need to integrate current technology into classes and demonstrate competence through role modeling (Krause et al., 2017). Balcikanli (2012) notes that social media applications can effectively engage undergraduate PE students and enhance: (1) peer feedback, (2) student/teacher communication outside of the classroom, (3) course topic clarification, and (4) sharing of course material. Balcikanli (2012) points out that when students engage in course material outside of class, they demonstrate the ability to independently learn a skill that is of importance. Van Kessel et al. (2016) also indicate that students appreciate the opportunity to set physical activity goals and compete in a friendly manner with classmates through social media. A major benefit of using WMD in PE is to log physical activity, where the technology can be used both inside and outside of class, facilitating easy electronic submission of work (Sibley & McKethan, 2012). Sibley and McKethan (2012) identify that access to additional information outside of the physical class, engaging in an activity that is more interesting to students, and finding ways to use

popular technology to encourage physical activity are all benefits of bringing WMD and online technology into PE. Additionally, teachers are inquiring as to how these technological integrations can provide more creative assessment methods (Krause et al., 2017). As supported by Sibley and McKethan (2012), one benefit of bringing technology into PE is the opportunity to teach and encourage students to use familiar technology in “ways that support increased physical activity” (p. 13).

Despite initial efforts not to allow WMD, teachers are identifying benefits and are finding creative ways to allow students to use technology in class (Walker, 2013). By engaging students in popular technology, educators have the opportunity to address how to acceptably and respectfully integrate technology into everyday life. After all, if WMD and social media applications are being used more than ever before, millennials need to learn how to be responsible citizens that understand when to pick up and put down their smartphones (Pistilli & Cain, 2016). Pistilli and Cain (2016) suggest that proper direction and guidance regarding WMD use can set today’s students up for success as tomorrow’s professionals.

Screen Time Facilitated Physical Activity

While many researchers have correlated screen time and sedentary behaviour, others are highlighting different ways that screen time can be used to encourage physical activity (Cowdery, Majeske, Frank, & Brown, 2015; Nigg, Mateo, & An, 2017; O’Loughlin, Dugas, Sabiston, & O’Loughlin, 2012; Staiano, Beyer, Hsia, Katzmarzyk, & Newton Jr, 2017; Xian et al., 2017). Cummiskey (2011) notes that WMD provide an opportunity to promote physical activity around the clock. A number of applications encourage physical activity as opposed to sedentary activity. Applications such as Map

My Run provide statistics and coaching during physical activity, while applications like 7 Minute Workout encourage individuals to be active regardless of available resources or major time constraints. Other applications such as Strava allow individuals to compete with other runners and cyclists on specific routes in a number of different countries, taking advantage of the competition aspect to motivate individuals to be physically active, something Van Kessel et al. (2016) can attest to being beneficial for engaging students.

While the focus of a number of physical activity applications is to provide workout data, exergames provide a video gaming experience with the benefit of physical activity. O'Loughlin et al. (2012) identify exergames as an excellent method of engaging individuals in screen time based physical activity, noting that exergames offer physical activity opportunities such as dancing games, virtual biking, sport simulation, as well as balance board simulation. Exergames are available for gaming consoles such as Nintendo Wii as well as on smartphones and other WMD (Cowdery et al., 2015; O'Loughlin et al., 2012). *Zombies, Run!* is an exergame that encourages participants to be physically active while playing a video game, in this case with the aim to avoid attacking zombies (Cowdery et al., 2015). Participants in an exergame study involving *Zombies, Run!* showed greater intrinsic motivation to be physically active and continued participation throughout the changing seasons with the use of exergames (Cowdery et al. 2015). *Pokémon GO* is another example of an exergame where users work to catch Pokémon and train them to become fighters (Nigg et al., 2017). The user navigates through “real-world streets and pathways” catching Pokémon and collecting goods, simulated by the device’s camera through the in-app experience (Nigg et al., 2017, p. 37).

The results of a pilot study in Hawaii found that Pokémon Go participants (n=628) experienced on average an additional 50 minutes of moderate to vigorous physical activity per week and reduced sedentary time by approximately 30 minutes per day (Nigg et al., 2017). Furthermore, Xian et al. (2017) noted that although their study sample size was small (n=167), more than 85% of participants noted an increase in physical activity by playing Pokémon Go. While individuals who typically run, bike, or walk regularly may not experience great benefits from Pokémon Go, individuals that are typically sedentary and less physically active can benefit most from playing the game (Xian et al., 2017). Staiano et al. (2017) found that with participation in a dance exergame, the adolescent girls in their study demonstrated increased intrinsic motivation to play exergames as well as demonstrated decreased screen time outside of exergaming. Exergames discourage the typically sedentary behaviour of regular video game playing by encouraging healthy active behaviour and providing an opportunity for individuals to engage in the physical activity needed to help users meet regular physical activity recommendations (Nigg et al., 2017; O'Loughlin et al., 2012).

As Whitehead (2010) notes, it is imperative educators find a variety of ways to encourage youth to identify and find joy in different forms of physical activity to ensure they develop as physically literate individuals. Physical literacy refers specifically to the confidence, competence, and motivation for individuals to be active throughout their lifecourse (Whitehead, 2010). If playing exergames on WMD can give rise to feelings of intrinsic motivation to be physically active (Staiano et al., 2017), a variety of technological avenues should be seriously considered in aiding in the development of physically literate twenty first century learners.

With this in mind, social media need not be overlooked in the opportunity to facilitate physical activity (Rote, Klos, Brondino, Harley, & Swartz, 2015). Rote et al. (2015) compared the physical activity output of females in a “Standard Walking Intervention” group to a “Facebook Social Support Group” (p. S22). Rote et al. (2015) found that walkers in the Facebook group took 136% more steps than their baseline count while those in the standard group improved their baseline count by 80% over the course of 8 weeks. The closely networked social support available within a 5-10 person Facebook group may encourage individuals to be more physically active when initiatives are put into place (Rote et al., 2015). In a separate study, Zhang, Brackbill, Yang, and Centola (2015) found that their university student participants were more likely to sign up for a greater number of fitness classes and sustain significantly more self-reported physical activity when social media and peer networking were available, in comparison to groups without peer viewing privileges. In this study, Zhang et al. (2015) explains that the main form of peer influence within the social media group was the immediate information provided regarding peer physical activity behaviour. Additionally, Van Kessel et al. (2016) indicate that viewing others’ progress and competing with peers online is a desirable aspect of using social media within a PE context. Sibley and McKethan (2012) support this notion and identify that students benefit from sharing progress or recruiting competition between each other when using workout prescription and orienteering applications within PE class. There are a variety of activity platforms that facilitate a competitive social media experience with wearable health-tracking technology, providing students and physical educators with individual, quantifiable activity data (Williamson, 2015). While Williamson (2015) does not advocate for the

direction towards a data driven PE environment, perhaps this technology can compliment the work of PE teachers and better inform them of student activity levels (Casey, Goodyear, & Armour, 2017).

By engaging students in popular technology, PE teachers have the opportunity to address how to integrate new, culturally relevant devices and applications into everyday life in a way that supports student physical activity (Sibley & McKethan, 2012). Cowdery et al. (2015) suggest that as smartphones continue to grow in popularity, it is important that health promoters understand how to use this captivating technology to encourage healthy behaviours. Additionally, by adopting popular technology physical educators have the opportunity to address health related messages communicated through social media as well (Kirk, 2019).

Screen Time and Harmful Messages

While screen time and sedentary behaviour are a major concern (Kenney & Gortmarker, 2017; Marques et al., 2015; Mitchell et al., 2012), an additional concern with social media is the content young people are accessing and its potentially harmful impact (Carrotte, Prichard, & Lim, 2017). Through social media trends such as #fitspo, society is being saturated with the message that “healthy” women are generally thin or athletic and “healthy” men are muscular (Carrotte et al., 2017). Good health is revealed by the body’s packaging, which is unfair, not necessarily true, and requires attention (Tinning & Glasby, 2002). The media messages that if you do not look like the ideal male or female that they communicate, you are unfit, unhealthy, and unattractive (Metzel, 2010). The Internet, one major avenue for twenty-first century media consumption, is guilty for having a positive correlation with consumer feelings of body image self-consciousness,

surveillance, and dissatisfaction (Tiggemann & Miller, 2010; Tiggemann & Slater, 2013). Specifically, Tiggemann and Miller (2010) found a positive correlation between teenage girls use of Facebook, a desire for body thinness and lack of satisfaction of current body weight. Girls especially are showing concern with their own appearance when they compare themselves to others they see on social media (Tiggemann & Slater, 2013). Ahadzadeh, Pahlevan Sharif, and Ong (2017) add that the presence of idealized photos on social media sites such as Instagram leads those viewing to feel body image dissatisfaction, even for individuals with high self-esteem. Comparing oneself to others' manicured social media photos is something that Manago, Ward, Lemm, Reed, and Seabrook (2015) indicate can lead to increased body consciousness and feelings of inadequacy. For example, Sutin and Terracciano (2013) found that non-obese individuals who perceived being discriminated against for their weight were two and a half times more likely to become obese than individuals who did not perceive discrimination based on their weight. The media's portrayal of a "perfectly" thin or muscular body can lead to self-objectification and has been associated with feelings of body inadequacy (Manago et al., 2015). Metzel (2010) adds to this issue by acknowledging that individuals who appear overweight, regardless of inner health, are often judged by their peers as lacking self-control, being uneducated, or unmotivated. Furthermore, Añez et al. (2016) identify that body dissatisfaction may actually discourage individuals from engaging in physical activity.

Steps need to be taken to help today's youth understand what it means to be healthy and be able to identify healthy behaviours, information and images when it comes to media consumption (Kirk, 2019). Health promoters and PE teachers have an important

role to play in educating students and encouraging positive and active use of technology, screen time, and social media. PE teachers especially need to address issues concerning health messages communicated through social media to help students manage the information and images they receive (Kirk, 2019).

This research aimed to identify how PE teachers can meaningfully engage students to be physically active as part of a healthy, active lifestyle using WMD and social media. Through this research, two main objectives were targeted: a) to understand the benefits and barriers of PE student participation with WMD and social media as an extension of the PE classroom; and b) to determine how WMD and social media initiatives can engage students to lead healthy, active lifestyles outside of class. Through the #active365 program this research explored how PE teachers can engage students in physical activity through the use of WMD and social media.

Methodology/Methods

This study employed a multiple case study approach with the goal of developing a greater understanding as to how PE educators can engage students through WMD and social media to demonstrate physical activity outside of the classroom. Social media and WMD engagement was measured through the #active365 program.

The #active365 Pilot Study– My Teaching

Throughout my seven years educating grades 10, 11 and 12 secondary students, I have noticed an ongoing trend in WMD and social media interest. Like many educators, I initially made every effort to dismiss WMD in my class as it provided an obvious distraction to my students. In September 2016, without planning any formal research, pilot study, or thesis in the long term, I became determined to discover how I might use

this technology to further engage students in my PE class. I started asking my students what so intently captured their attention on their WMD. Many students replied that they enjoyed communicating online via social media; they messaged friends, commented on photos, or posted “selfies” (self-portraits.) Similar to the rationale of Wallis’ (2014) work using “selfies” in the library, I considered that perhaps students could take pictures of themselves being active outside of class, demonstrating PE outcomes for improved grades.

My first step in actualizing a plan to assign grades to students for documentation of physical activity outside of the class through “selfies” (the #active365 program) was to search the PE curriculum for specific outcomes that backed this intention. When student grades are concerned, it is imperative that outcomes are supported within the respective program of studies. Within the PE 10 (the grade 10 level PE course in Alberta) curriculum, specific outcome D10-1 states that students will “demonstrate a commitment to an active lifestyle through participation in and out of class” (Alberta Learning, 2000, p. 29). Within the PE 20 and 30 curriculum (the grade 11 and 12 level PE courses in Alberta, respectively) specific outcome D20-1 and D30-1 state that students will “model an active lifestyle” (Alberta Learning, 2000, p. 29). My PE department would evaluate our students with regards to these outcomes by identifying student demonstration of understanding for rules and guidelines, appropriate behaviour within an activity, as well as preparedness for class. For example, if a student attended a badminton class in a timely fashion, prepared with appropriate clothing and footwear to be active in, demonstrated the ability to start a game with a peer, correctly alternated sides within the match, accurately kept score, demonstrated sport specific movements and shook hands at

the end of the match, we would determine that the student would likely be successful in attempting to play badminton outside of class as one opportunity to be active as part of a healthy lifestyle. However it is difficult to determine whether a student will actually take the opportunity to be active outside of class and it is naturally quite difficult for a PE teacher to witness this behaviour. If students were to partake in an opportunity or challenge to capture images of themselves being active outside of class, I determined that this would then allow me to better evaluate my students with regards to outcomes D10-1, D20-1, and D30-1 in PE classes 10, 20 and 30 respectively as it would give me a window to see what my students are actually choosing to do in their own time. Furthermore, by demonstrating these learning objectives, students would also be providing a glimpse into their physical literacy journeys; the images would capture a moment that represented their competence to identify physical activity opportunities in the community, as well as their motivation and confidence to engage in those physical activity opportunities.

The #active365 program was not mandatory within my class for a number of reasons. First, each student was already scheduled to be active for 90 minutes within PE class, Monday through Friday. Ninety minutes of activity time more than satisfies the 60 minutes of recommended daily activity time for children and youth ages 5-17 (Canadian Society for Exercise Physiology, 2018). While PE 20 and PE 30 courses are optional in Alberta, PE 10 is a required course in order to earn a high school diploma (Alberta Education, 2017). As a result, there are a variety of student opinions with regards to daily physical activity where some feel they receive enough exercise during class and others enjoy engaging in more. The second reason I decided to make the challenge optional was that many students already had other extracurricular commitments such as

fine arts practices and rehearsals; I did not want to add additional stress to these individuals as they were already getting their recommended dose of physical activity within PE class. Third, I wanted to determine how many students would engage in the challenge with a positive incentive only; I did not want students to participate in the opportunity because they wanted to avoid losing marks. Lastly, if some students did not own a WMD, I did not want to pressure those individuals to feel they had to acquire one. I wanted to further engage students in my PE class by having them use the WMD and social media applications that many of them seemed to already have and love, a benefit for the students interested and at no cost to the students who were not interested.

Once I identified the curricular support for the opportunity, I looked to the evaluation assessment rubric that guided my PE department. Our program involved one teacher with the same student group throughout the semester, alternating different activities and units weekly. At the time, assessment for each unit was split up into four sections: (1) attitude and effort, (2) knowledge, (3) skill, and (4) personal and social responsibility. For each submission or “selfie” that I received, that student received a 5% mark boost within their attitude and effort grade to a maximum of 25% boost per unit, or one submission per day. The student’s effort outside of class and positive attitude towards physical activity as part of a healthy active lifestyle fit within our rubric guidelines, justifying the grade improvement. Students could decide for themselves what they would like to engage in for their additional physical activity, which could empower and motivate students to be active by fostering feelings of independence and control (Sibley & McKethan, 2012). For example, during a football unit a student might submit two photos of themselves being active in a dance class on two different days of the week.

When inputting their grades into the system, I would note in my digital grade book that the student received a 10% bonus for their activity outside of class on top of their existing attitude and effort grade for the football unit. This allowed for clarity between the student, parent, and teacher where one would just subtract 10% from the student's attitude and effort mark to find out the original football attitude and effort grade for that student during the unit.

After determining the support in the curriculum as well as deciding how to integrate improved grades into the students' quantitative assessment, I approached my administration for support. Following administrative approval, I signed up for a Twitter account. I decided that if I could demonstrate daily physical activity by engaging in the #active365 program myself, I could be a better role model for my students as well as give my students a better idea as to what their submissions might look like, which according to Cochrane and Bateman (2010) is something that students appreciate with online educational work. Next, I drafted an assignment and introduced the #active365 program to my PE 10 and PE 30 classes. Requirements of a submission for the #active365 program included: (1) following me on Twitter, (2) submitting a "selfie" depicting physical activity as well as a short description to describe the activity if it was not otherwise obvious in the photo, (3) including "#active365" in the description of the post, and (4) according to an honours system, being active for 20 minutes or more. I asked students to follow me on Twitter so that they would be alerted to my daily posts as well as any time I would congratulate a student on their posts, all of which shows up on a Twitter "feed" or blog. The honours system was used for student accountability because even if students worked to merely pose for a photo and were not active for 20 minutes,

for example holding their dog's leash while outside, they still demonstrated knowledge and identified an opportunity where they could engage in activity as part of a healthy lifestyle outside of class. Twenty minutes was determined as the requirement for activity due to the Canadian guidelines that indicate individuals over the age of 18 should engage in at least 150 minutes of physical activity per week; 150 minutes divided by 7 days per week is approximately 20 minutes. Statistics Canada (2015) reports that 82% of Canadian adults ages 18-79 and 92% of youth ages 5-17 do not meet the recommendations for daily physical activity, making this important work in encouraging students to find time to be active within their daily lives. Once finished their PE course, my hope was that students would understand physical activity contributions to a healthy active lifestyle throughout the majority of their life. Lastly, the reason why the challenge is named with a pound sign or a "hashtag" is for functionality within the social media applications. A student can type "#active365" into the search menu of a social media application and find all the posts with that description, allowing students to see others who are participating in the challenge, hopefully encouraging and subconsciously giving them permission to do the same.

I engaged my students in the #active365 program within three separate semesters and five different classes. With the first semester, I received a total of 18 #active365 posts, where 4 of my PE 30 students (12%) and 6 of my PE 10 students (25%) engaged in the social media challenge and received "bonus marks". My hope was to engage more students moving forward, so I started having conversations with my students about social media use. I asked my students to indicate which applications I could use to best engage students in the #active365 program. From casual conversations the main feedback I

received was that some students had no interest in using Twitter and would prefer to use other social media applications such as Instagram and Snapchat to engage in the challenge.

In February 2016, with a new semester and PE 10 class of 24 students, I signed up on Instagram and Snapchat. I made two changes to the original #active365 program assignment. First, I limited the number of possible submissions for one activity type to ten, meaning if a student played high level hockey every day after school, they would only receive bonus marks for a maximum of 10 hockey related submissions. I made this change to encourage students to find more ways to be active on their own time, to show me what they might do on their days off or what they do to stay active during their off season, for example. Second, I indicated I would take screenshots of student's submissions to hold them accountable for their work as well as for the purpose of their assessment. While photos on Instagram and Twitter stay in a messaging stream or are present as part of one's profile online, photos on Snapchat are only visible the first time an individual looks at the photo, after which point they are deleted. By the end of the semester I had received 81 submissions from 12 of 24 students (50%) in the class, with the majority of submissions submitted via Snapchat. Again, I asked students who did not engage in the program why they chose not to and received responses including: (1) they did not own a WMD to take photos with, (2) they did not like to engage with social media, (3) they only had a Facebook account, which I did not offer in the #active365 program, and (4) they felt they received more than enough physical activity within PE class. With regards to the students who opted not to engage in the #active365 program,

Van Kessel et al. (2016) notes that students may be reluctant to be leaders or demonstrate leadership among their peers as it may be perceived as “uncool” to do so.

In September of 2016, I attempted the #active365 program for only two months with a new group of students, specifically two classes of PE 10. There is reason to believe that something like the #active365 program may find the most momentum at the beginning of a semester, as Van Kessel et al. (2016) note, the “novelty wears off” (p. 7). Additionally, in appreciation of the previous semester’s student feedback, I added a Facebook account to the profile list. Furthermore, I placed more emphasis on students posting with peers and encouraged students to borrow a WMD from the library if they did not own one themselves, and email submissions to me if they were not comfortable using social media. In two months I received 90 submissions from 10 of 59 (17%) students. I received the majority of #active365 program submissions through Snapchat and as private messaging on Instagram, however absolutely no submissions through Facebook.

Due to my students’ demonstrated interest to use social media as an extension of our PE class, I wanted to share this work and therefore presented the aforementioned information at three separate health and physical education conferences in 2016 and 2017. Additionally, I decided I would like to determine if other PE teachers might find success in engaging students to be active using WMD and social media as well. The above mentioned #active365 program is what I intended for the teacher participants in this research to replicate with their own classes, with an open invitation to develop the program as they would see fit.

Qualitative Approach - A Multiple Case Study

According to Yin (1994), a “case study is an empirical inquiry that investigates a contemporary phenomenon within its real-life context” (p. 13). A case study can be based upon a variety of situations, to name a few: a single person or group of people, an event, policy, condition, program, or a certain phenomenon or way of doing things (Baxter & Jack, 2008; Merriam, 1998). Case studies narrow in on a condition, group, or situation that exists within a definable boundary, focusing the researcher’s time, energy, and attention (Merriam, 1998). A qualitative case study allows for freedom, does not require a specific, one-way, defined method of data gathering (Merriam, 1998) and allows the researcher to grow, expand, and refocus their attention where the research takes them within the specific context that they are researching (Bogdan & Biklen, 2007). Case studies can be defined as particularistic, descriptive, and heuristic; “particularistic” referring to a focused scope within the study, “descriptive” referring to a study that is rich in illustration or report, and “heuristic” meaning that it is made sense of by the reader (Merriam, 1998). In consideration of ensuring that a case study is descriptive, Baxter and Jack (2008) confirm that gathering data from a number of sources improves the quality of that data and helps to explain the program or phenomenon when analyzed collectively. The more detail that a researcher can gather and accurately illustrate to the reader, the more valuable and meaningful the researcher’s findings become. As a reflection of the researcher’s detailed and comprehensive writing, readers should almost feel as though they were a part of the situation and could apply those understandings to their own work (Baxter & Jack, 2008). While the researcher ensures that they observe and communicate the details within the context of the research, Baxter and Jack (2008) caution that the

researcher not get lost or side tracked by the abundance of details collected and warn that focusing in on how the research answers the research questions is key.

It is both the broad and fine characteristics of case studies that made this research method best suited for this study. Merriam (1998) identifies that case studies are particularistic in that they are specific to a certain situation or event and can bring awareness to a general problem by focusing on that particular situation or event. Furthermore, Baxter and Jack (2008) add that within case studies, it is important that the researcher describe the program as well as the context in which it takes place. For example, in this study the #active365 program was used to explore how PE teachers can use WMD and social media in an attempt to engage students to lead healthy, active lifestyles. Once the #active365 program was introduced and set up by teacher participants, the open-ended nature of the case study approach allowed the teacher participants to take the experience in a direction that was meaningful to their specific contexts and perceived student need.

Different from other forms of research, case studies can focus on one program within a certain context or one program in a variety of different contexts, the latter considered a multiple case study approach (Baxter & Jack, 2008). Multiple case studies provide an opportunity where similarities and differences in running a program can be compared (Baxter & Jack, 2008). Additionally, Merriam (1998) identifies that a multiple case study is “in fact, a common strategy for enhancing the external validity or generalizability” of a study’s findings (p. 40). Baxter and Jack (2008) note that the “evidence created from this type of study is considered robust and reliable” (p. 550).

Through multiple case study methodology, PE student engagement in WMD and social media was explored in different contexts through the #active365 program. The experiences of two teachers participating in the study, as opposed to one, allowed for richer results and better understanding for how WMD and social media can be used within different PE contexts.

As mentioned earlier, a case study looks to use a variety of data sources to explore an occurrence or program specific to its context (Baxter & Jack, 2008). Each data source can provide specific detail and is “one piece of the puzzle”, helping to inform the researcher as to why a program is or is not successful within its context (Baxter & Jack, 2008, p. 554). Specific data sources that were used to explore student engagement in WMD and social media in PE via the #active365 program included: a) an open-ended preliminary questionnaire for teachers requesting demographic information regarding the teacher and the school; b) publicly posted information or images from social media sites used by teacher participants; c) teacher participant field notes which indicated the commencement of the #active365 program with their respective classes; and d) a one-on-one teacher participant phone interview conducted at the conclusion of the data collection period. In the analysis of the data following the study, patterns and similarities were looked at between cases. Additionally, differences were analyzed and suggestions were made as to why those differences may have occurred.

Qualitative research and case studies in particular are focused on gathering data where researchers use a context-sensitive lens to view the work and their participants within their environment (Bogdan & Biklen, 2007). One potential drawback regarding any observational research is the notion of the “observer effect” or “Heisenberg effect”

where individuals who know they are being observed act differently than they otherwise would if they were not being observed (Bogdan & Biklen, 2007). One beneficial aspect of the #active365 program is that students were never directly observed by the researcher in real-time. All observational data was communicated by the teacher participants to the researcher, informed by the #active365 program posts that were either posted publically on social media or sent directly to the teacher. The researcher never observed the students in real-time.

Students are engaging in WMD and social media and the trend to do so is only increasing from year to year (Ofcom, 2016). The #active365 program looked to implement an opportunity for students to gain grade improvement by incorporating their WMD and social media use into PE, demonstrating their physical activity habits outside of the class and ultimately helping the educator to better assess students with regards to related specific outcomes. Inherently heuristic in nature, case studies allow the reader to confirm what they already know as well as potentially bringing about new understanding to an identified problem or issue (Merriam, 1998). The multiple case study approach was the best way to look at different opportunities to better understand how PE students can be engaged in WMD and social media through the #active365 program within different educational contexts.

Research Design

Participant recruitment. Two secondary PE teachers were recruited through convenience sampling to engage in the #active365 program with their own classes for a period of four months (Appendix G). Emails were distributed to teachers throughout Alberta, however the two teacher participants that engaged in the study personally

contacted the researcher and indicated interest following conference presentations regarding the #active365 pilot study. Teaching secondary PE, speaking English, and expressing interest in the #active365 program were the only criteria used for teacher participant selection. As mentioned by Sibley and McKethan (2012) it is important to ensure that the use of online material and online communication between teachers and students is supported by the governing policies of the school; the two teachers who opted to participate in the #active365 program confirmed their participation with their school administrators.

Data collection. With approval from the Memorial University Review Board, Interdisciplinary Committee on Ethics in Human Research, my thesis approval committee, and from each teacher's principal, data collection commenced in September 2017. To start the #active365 program, teacher participants were sent a comprehensive email with files including: an informed consent letter for the teacher and students (Appendix A), informational letter for the principal (Appendix B), as well as a start-up guide (Appendix C) and easy to edit program poster (Appendix D). The start-up guide included links to YouTube videos demonstrating how to set up various social media accounts, instructions as to how to setup the #active365 program within the school, as well as a conversation guide for commencing the program. The easy to edit program poster allowed teachers to advertise their participation in the #active365 program with their class within the school. The poster included details such as teacher social media profile usernames as well as requirements and instructions for the #active365 program itself.

Sibley and McKethan (2012) identify that it is important for the teacher participant to let parents know that WMD and social media will be used for educational purposes. This was an important consideration for the #active365 program; parents were informed about student participation in educational activity online. An informational email for parents was written by the researcher and sent to the teacher participants to distribute to all of their students' parents via email; parents were asked to direct questions regarding the study specifically to the researcher however identified that students could engage in the #active365 program with their teacher without being part of this research (Appendix H). Identical formatting in communications and materials were sent to both participating teachers to ensure the information provided was consistent and that all schools started with the same resources for the #active365 program. Ensuring that each school received the same opportunity and information provides trustworthiness within the results, knowing that however the #active365 program work unfolded, it initially started from the same baseline point. Once the #active365 program started, communication between the researcher and teacher was done via email and involved reminders to ensure the teacher questionnaire and consent form were completed. Once materials were distributed and teachers indicated a solid understanding as to how to conduct the #active365 program, teachers were encouraged to engage in their work with their classes right away. All teacher participant instructions can be found within the #active365 start up guide (Appendix C).

Teacher preliminary questionnaire.

At the commencement of the study, teachers were asked to complete an open-ended teacher preliminary questionnaire (Appendix E.) This questionnaire provided

demographic details such as name, classes taught, years of experience and experience with social media. The purpose of this questionnaire was to gather data regarding the educator as well as to get a better understanding of their prior use of social media.

Public social media posts.

Throughout the study, teacher participants posted content demonstrating #active365 program participation through one or more social media sites. Activities depicted through teacher participant photo posts were analyzed and used in data collection. Publicly posted information such as questions asked by teachers on social media sites were also observed and included in data collection.

Teacher participant field notes.

Through the duration of the #active365 program, teacher participants were asked to keep field notes and document anytime the #active365 program was mentioned in their classes, as well as when they received posts, or had related conversations with students. Teacher participants however solely used their field notes to document the commencement of the #active365 program with their class or classes; notes were not kept by either teacher participant as the semester continued.

Interview with the teacher participant.

Due to geographic distribution, teacher participants were interviewed by phone at semester's end to explore their opinions, findings, desire to continue, issues, successes, effects on relationships with students, and any other topics that emerged. A pre-approved list of semi-structured interview questions were asked during each teacher participant's interview, lasting between 35 to 55 minutes (Appendix F). Questions were designed by the researcher with the pilot study in mind. Interview questions related to the social

media platforms used, student engagement with social media and WMD use, as well as lessons learned moving forward. The interviews were audio recorded on a password-protected iPad using the application Voice Record and were later transcribed verbatim and stored using password-protected Google Docs.

Thematic Analysis

Teacher participant field notes, preliminary teacher participant questionnaire results, as well as transcribed interview data was combined and analyzed together. Data was read through and reviewed by the researcher to identify common words and phrases, which were then assigned codes (Bogdan & Biklen, 2007). A total of 40 codes were identified and used to organize the data. Patterns within the coded data led to the development of coded categories, which Bogdan and Biklen (2007) note is an important step in the analysis of data. Fifteen different coded categories were identified which include: a) program set up; b) information regarding setting, context, or demographics; c) curricular outcome support; d) teacher role modeling; e) student physical activity; f) teacher and student WMD use; g) outside impressions and involvement from staff, parents, administration, or the greater public; h) teacher perception of student attitude and benefits; i) teacher social media use; j) student social media posts; k) benefits to using social media; l) applications used for social media posts; m) challenges to using social media; n) public versus private posts; and o) teacher desire to repeat or change the program moving forward. All of the data was then copied and pasted into 15 separate documents. In each document, the data related to one specific category was highlighted and analyzed together. Through comprehensive and detailed notetaking during the analysis, these 15 categories were later expressed as four main themes within the data.

Teacher participants were emailed a debriefing letter with the transcribed interview as well as a debriefing letter with themes identified (Appendix I and J).

When conducting qualitative research, it is important that researchers produce work that is trustworthy (Shenton, 2004). Shenton (2004) echoes the importance of Guba's (1981) constructs regarding four aspects of trustworthiness in qualitative research: credibility, transferability, dependability, and confirmability. This study has demonstrated all four criteria in attempt to meet qualitative research standards. First, credibility is demonstrated in this study through member checking where research participants were asked to review transcribed interview data as well as results and themes following data analysis. Additionally, credibility is demonstrated through data triangulation where more than one case study was examined to explore the research question and a number of data sources were used in data analysis. Second, in the interest of transferability, two case studies were examined using the same methods within different PE contexts and boundaries (Shenton, 2004). The results from the case studies in this research were compared with each other during data analysis in order to inform themes and recommendations for physical educators looking to engage students with social media and WMD in the future. Third, this study demonstrates dependability through the description of the research design and the details provided regarding the gathering of data (Shenton, 2004). Last, confirmability is demonstrated in this study through data triangulation practices as well as the researcher's objectivity in describing the challenges presented by participants in this study.

Manuscript

I will be submitting this manuscript to the *Journal of Teaching in Physical Education*.

Exploring Social Media and Perceived Student Engagement in Physical Education: A Multiple Case Study Approach

Purpose: This study examined the benefits and challenges of introducing a social media program to demonstrate student physical activity and literacy outside of physical education (PE) class time. **Method:** A qualitative, multiple case study approach was used. **Results:** Four main themes were identified: a) social media can support the achievement of secondary level PE outcomes; b) social media can help improve student/teacher communication and relationships; c) students can demonstrate resistance to social media program adherence; and d) grade level can affect social media student participation. **Discussion/Conclusion:** Benefits to the teacher and student are discussed along with challenges regarding running a social media program within PE. Suggestions are made for PE professionals looking to incorporate social media within their PE programs.

Keywords: social media, physical education, secondary students, physical activity, technology

Every year more people are using wireless mobile devices (WMD) to connect to the Internet (Canadian Radio-television and Telecommunications Commission, 2016). In

a globalized world where shift work, schooling, and individual schedules vary throughout all generations, millennials are using WMD and social media to flexibly communicate and stay connected with their peers despite differing individual schedules (Ahn, 2011; Botterill, Bredin, & Dun, 2015). While increased communication is beneficial, there is growing concern that youth are increasingly sedentary and more frequently in front of a computer screen, which has shown to negatively impact their physical and mental well being (Marques, Calmeiro, Loureiro, Frاسquilho, & de Matos, 2015; Mitchell, Pate, & Blair, 2012).

Despite this concern, some researchers have argued that schools and teachers could play a critical role in helping to use WMD or social media in a meaningful way to better engage students in their learning (Casey, 2013; Cochrane & Bateman, 2010; Graham, 2014; Nowell, 2014; Wallis, 2014). Some argue it is even more important in physical education (PE) settings to find new ways to use WMD and social media so that youth can use this new technology in healthy ways, as well as be educated on healthy behaviours (Van Kessel, Kavanagh, & Maher, 2016).

Literature Review

Popular Technology and Sedentary Behaviour

According to an international study conducted by LeBlanc et al. (2015), youth ages 9-11 are spending on average 8.6 hours per day inactive with 54% getting more than 2 hours of screen time daily. Additionally, Leatherdale and Ahmed (2011) found that Canadian students from grades 6 to 12 are averaging 7.8 hours of screen time per day. Unfortunately, screen-focused-hours are most often spent sitting still and are being positively correlated with a decrease in both mental and physical wellness (Marques et

al., 2015; Mitchell et al., 2012). Kenney and Gortmaker (2017) reveal that of more than 24,000 American high school students, screen time was positively related to physical inactivity. Furthermore, Barkley and Lepp (2016) identify that 87% of university-aged millennials are sitting down while engaging with their smartphones.

With this in mind, consider that almost 100% of Canadians aged 15-24 own a smartphone or use the Internet on a daily basis and 96% access social media sites (Statistics Canada, 2018). Social media or social networking sites are “websites and/or applications that enable users to create or share content”, allowing them to “participate in social networking” (Ofcom, 2016, p. 178). Considering that social media and WMD are so popular, the question regarding whether schools should be avoiding these technologies or embracing them is of particular interest.

Social Media and WMD Use in Education

Whether in their own homes or at school, regardless of Internet access in one spot or on the go, teenagers engage with technology and communicate with friends through digital media (Ahn, 2011). However, secondary students are so interested in engaging online that quite often it consumes their time and distracts them from their studies (Nowell, 2014; Waycott, Bennett, Kennedy, Dalgarno, & Gray, 2010). Some secondary schools indicate that they discourage or ban WMD use on campus due to concerns with classroom disruption and inappropriate use such as cyberbullying and cheating (Walker, 2013). Inan and Lowther (2010) add that older teachers are typically less computer proficient and may find it difficult to keep up with what students are engaged in online. However, as Marciano (2015) states, “as technology and social media continue to evolve at a rapid pace, our work [as educators] must continue to evolve as well” (p. 78).

The unsupportive opinions regarding integration of WMD and social media into schools and classrooms is however challenged by a number of educators who advocate for adopting this technology to further engage their students in course material (Casey, 2013; Marciano, 2015; Nowell, 2014; Wallis, 2014). Wallis (2014) argues that giving students the opportunity to document, develop, and share information using social media applications, such as Instagram, meaningfully involves students in the design of their own learning. Research has shown that students of music, architecture, landscaping, and performing arts are effectively utilizing social media and WMD to demonstrate learning within their specific courses (Cochrane & Bateman, 2010). However, given the physical inactivity associated with screen time (Kenney & Gortmaker, 2017), activity courses such as PE could integrate technology to capture student attention as well as encourage physically active behaviour (Sibley & McKethan, 2012).

Screen Time Facilitated Physical Activity in PE

With twenty-first century learners, PE teachers need to demonstrate competence in the integration of technology within their classes and role model that integration (Krause, Franks, & Lynch, 2017). Some PE teachers have found professional development opportunities through social media and as a result have accessed ideas to engage students in class (Goodyear, Casey, & Quennerstedt, 2018). Another benefit of bringing technology into PE is the opportunity to teach and encourage students to use the technology already familiar to them in “ways that support increased physical activity” (Sibley & McKethan, 2012, p.13). There are a variety of activity platforms that facilitate a competitive social media experience with wearable health-tracking technology, providing students and physical educators with individual, quantifiable activity data

(Williamson, 2015). While Williamson (2015) does not advocate for the direction towards a data driven PE environment, perhaps this technology can compliment the work of PE teachers and better inform them of student activity levels (Casey, Goodyear, & Armour, 2017). Studies by Sibley and McKethan (2012) and Van Kessel et al. (2016) add that viewing others' behaviours and activities can be a desirable aspect of using social media and other applications within a PE context. By engaging students in popular technology, PE teachers have the opportunity to address how to integrate new, culturally relevant devices and applications into everyday life in a way that supports physical activity (Sibley & McKethan, 2012). As Whitehead (2010) notes, it is imperative that educators find a variety of ways to encourage youth to identify and find joy in different forms of physical activity to develop as physically literate individuals.

The purpose of this research was to identify how PE teachers can meaningfully engage students to be physically active as part of a healthy, active lifestyle using WMD and social media. Through this research, two main objectives were targeted: a) to understand the benefits and barriers of PE student participation with WMD and social media as an extension of the PE classroom; and b) to determine how WMD and social media initiatives can engage students to lead healthy, active lifestyles outside of class.

Method

Research Design

This study used a multiple case study approach to detail the experiences of two Alberta secondary PE teachers and their use of WMD and social media as an extension of their secondary PE classes. Both teacher participants used a program called #active365 as an introductory guideline to explore how WMD and social media might encourage

students to lead active lifestyles as well as give educators insight to the physical literacy journeys students take outside of the classroom. The #active365 program was designed by the primary researcher and piloted within her own PE classes prior to this study. The #active365 program asks students to take photos or “selfies” (self-portraits) of themselves being active and to post those photos on social media as a way to further demonstrate active lifestyle PE curricular outcomes and to earn additional grades. With each post, students were asked to provide the hashtag #active365 as well as describe the activity portrayed in the photo. Students could choose whether to post their photos publicly or send their active photos privately to their teacher through social media platforms.

Once the #active365 program was introduced and set up, the open-ended nature of the case study approach allowed the teacher participants to take initiative in a direction that they felt most meaningful to their students and specific context. Within each case study, students were never directly observed by the researcher. All observational data was communicated between the students and teachers as they navigated through the #active365 program together; observations were then communicated to the researcher by the teacher participant.

Procedure

Approval to begin this research was granted by the Memorial University Review Board, Interdisciplinary Committee on Ethics in Human Research, and from each teacher participant’s principal. Research began in September 2017 when teacher participants were sent a comprehensive email with #active365 program files including: an informed consent letter for the teacher and students, informational letter for the principal, as well as a start-up guide and easy to edit program poster. An informational email for parents was

distributed by the teacher participant to all of their students' parents via email; parents were asked to direct questions regarding the study specifically to the researcher however identified that students could engage in the #active365 program with their teacher without being part of this research. Additionally, the start-up manual included links to YouTube videos demonstrating how to set up various social media accounts, instructions as to how to setup the #active365 program within the school, as well as a conversation guide for commencing the program. Identical formatting in communications and materials were sent to both participating teachers to ensure consistency in #active365 program start-up. All resources were developed by the researcher, based on previous experience using the the #active365 program within her own classes.

Participants

Teachers were recruited through convenience sampling to engage in the #active365 program with their own classes for a period of approximately four months. Emails were distributed to teachers throughout Alberta (AB), Canada, however the two teacher participants that engaged in the study personally contacted the researcher and indicated interest following conference presentations regarding the #active365 program. Teaching secondary PE, speaking English, and expressing interest in the #active365 program were the only criteria used for teacher participant selection.

Case Study A took place in an Alberta city of less than 70,000 people. The male teacher participant (hereinafter referred to as Teacher Participant A) taught at a Catholic high school of approximately 950 students from grades 9-12. Twenty-eight students populated the single class he used to engage within this study. Teacher Participant A had been teaching secondary PE for 6 years and involved a grade 11 and 12 combined PE

class in the study; the PE 20/30 class was populated by 26 males and 2 female students. The low female representation within this class was not discussed with the teacher participant, however it may have impacted the degree to which students chose to engage with social media. A number of 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).

Case Study B took place in an Alberta town of less than 15,000 people. The male teacher participant (hereinafter referred to as Teacher Participant B) taught at a French immersion school of approximately 200 students from kindergarten to grade 12. Teacher Participant B had been teaching secondary PE for 3 years and involved grade 8, 9, and 10 PE and health classes in the study. His grade 8 class contained 12 boys and 4 girls, his grade 9 class was populated by 7 boys and 10 girls, and his grade 10 class involved 7 boys and 4 girls.

Data Collection and Analysis

Data collected for this research included: a) an open-ended preliminary questionnaire for teachers; b) publicly posted information or images from social media sites used by teacher participants; c) teacher participant field notes; and d) a one-on-one phone interview conducted at the conclusion of the data collection period.

A pre-approved list of semi-structured interview questions were asked during each participant's interview which lasted between 35 to 55 minutes each. Questions within the interview related to the social media platforms used, student engagement with social media and WMD use, as well as lessons learned moving forward. Interview questions were designed by the researcher and guided by her own experience with the

#active365 program. 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. Data was read through and reviewed by the researcher to identify common words and phrases, which were then assigned codes (Bogdan & Biklen, 2007). A total of 40 codes were identified and used to organize the data. Patterns within the coded data led to the development of coded categories, which Bogdan and Biklen (2007) note is an important step in the analysis of data. Fifteen different coded categories were identified. 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.

The data from this research was analysed using a situated learning theoretical framework (Lave & Wenger, 1991), similar to what Kirk and Kinchin (2003) describe regarding the need for sports in PE and the community of practice of sport to be much like one another in order to transfer learning and engage individuals in the long term. This study extrapolates Kirk and Kinchin's (2003) rationale by identifying that students embrace social and situational contexts of a variety of activity opportunities outside of school, which Lave and Wenger (1991) define as legitimate peripheral participation, as part of the PE experience through the #active365 program.

Results

Through the examination of the data from Case Study A and Case Study B, four main themes were identified: a) social media can support the achievement of secondary level PE outcomes; b) social media can help improve student/teacher communication and relationships; c) students can demonstrate resistance to social media program adherence; and d) age or grade level can affect social media student participation. These themes give an indication as to the benefits and barriers potentially associated with using WMD and social media as an extension of a secondary level PE class.

Social Media Supports Secondary Level PE Outcomes

In both Case Study A and Case Study B teacher participants reported observing a number of student photo posts demonstrating physical activity endeavours outside of class time. Teacher Participant A expressed that “[students] are going to have screen time...[and] these devices on them, [so] let’s try to turn the switch and say hey, we can get you active as well...and change that culture a little bit.” In his grade 11 and 12 PE 20/30 split class, Teacher Participant A received 14 active photo posts from 14 of the 28 students. Teacher Participant B received 31 active photo posts in total, where 22 posts were submitted by 10 of his grade 8 students, and 9 posts were submitted by 3 of his grade 9 students. None of Teacher Participant B’s grade 10 students chose to post photos. Activities that students demonstrated 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. Each activity was considered its own community of practice with real-world contexts that students demonstrated emersion in through photo posts (Lave & Wenger, 1991). In Case Study A students submitted photo posts publicly on a group Facebook page, or privately

through Google Classroom. In Case Study B students submitted photos privately or publicly using Instagram, SnapChat, and Facebook applications; Google Classroom was used for private submissions only.

Interestingly, in Case Study A, the teacher participant took the opportunity to engage his grade 11 and 12 students in working to achieve a variety of additional secondary level PE outcomes as well. Along with asking for photo submissions that demonstrated student physical activity behaviour outside of class (outcome D20-1 and D30-1), the teacher participant also posted questions regarding body image influences (outcome B20-4 and B30-4), consequences of living an inactive lifestyle (outcome B20-7 and B30-7), ways to maintain a healthy lifestyle following high school graduation (outcome D30-2), stress management methods (outcome D20-8, D30-8), performance enhancing substances (outcome B20-5, B30-5), and issues related to physical activity (outcome C30-2 and D20-9) (Alberta Learning, 2000). For example, with regards to the outcomes relating to body image influences, Teacher Participant A asked how his students define body image, what ways body image can be influenced, as well as how body image can influence the activities individuals participate in. Teacher Participant A noted that the #active365 program “gave [him] an avenue to really deliberately...discuss and provide insight to those topics that otherwise are challenging to [demonstrate] in a PE setting” where “health literacy and health education [is a] component...[of] our PE classes [and] one of the biggest topics and biggest units that...[gets] overlooked” in Alberta PE. Teacher Participant A first introduced the grade 11 and 12 secondary level PE outcome related question in class and then asked students to respond to it with their opinions and thoughts using social media platforms. With the development of his social

media program to include the additional aforementioned PE outcomes, all 28 of his students posted via comment or photo at least once, prior to the end of the semester. Teacher Participant A found with his question and comment style posts that social media engagement with students provided a strategic opportunity to connect with his students, and to “dig deeper” into topics and issues associated with “health and PE” outcomes that he identified as “tough to achieve through physical activity in [the] gymnasium”, such as outcomes related to performance enhancing substances. Teacher Participant A found that students responded with more detail than a “yes” or “no” answer when he continued to provide feedback and “push their thinking”. Furthermore, he included and referenced current events for online conversations, such as the 2018 Olympics, when discussing topics such as performance enhancing substances. When students responded to these questions, they provided written “proof” of their knowledge regarding those outcomes; this made it easier for Teacher Participant A to identify that a student had achieved a specific PE outcome if asked by an administrator or parent. Teacher Participant A noted, “this [social media] platform set me up and set the stage for me to really dig deep and get evidence based...information and actually...cover my tracks on achieving outcomes.” Teacher participant A indicated that he awarded students with marks for demonstrating PE outcomes achieved through his social media program.

In contrast, Teacher Participant B did not award students with improved grades for participation in the social media program. Teacher Participant B indicated that the students who submitted #active365 posts were already top mark earning students who did not need improvement in their grade. Teacher Participant B also noted, “it’s hard to give [students] marks for something that’s done outside of school and that’s not mandatory”.

However, when he introduced the social media program to his students, Teacher Participant B indicated that the conversation provided an avenue for students to learn more about healthy Internet usage and how the public or private permissions given on posted images can determine who can see that post. Teacher Participant B specified this information with his students during health class when discussing how “visual print...can affect our lives in general later on”, educating students on “the permissions you can give images...so that they don’t actually go everywhere” on the Internet.

Student/Teacher Communication and Relationship Improvements

Both case study teacher participants expressed a perceived benefit from engaging with their students online through social media. It was indicated by both Teacher Participant A and B that the relationships they share with students benefited when a student participated online using the social media platform due to enhanced or improved communication. Teacher Participant A noted that already strong relationships with his PE 20/30 students were “enhancing even more” when he posted photos. Furthermore, he expressed that sharing activity posts that included his daughter would “invoke conversation” and naturally allowed related dialogue between him and his students. Through photo posts, Teacher Participant B expressed that he learned many of his students are “really high level athletes” who participate in “individual sports” or activities. He noted that this information helped to inform his practice regarding the different activities he will plan within PE class moving forward. Additionally, Teacher Participant B mentioned specifically that two of his students were less shy to communicate with him during class as he perceived “gained confidence” and excitement, “because they were proud of showing [their photo]...to [him]”. Furthermore, he felt that

for “some of the kids that showed their images”, he “discovered a new...aspect to them” and that it “created a better...relationship”. Teacher Participant B expressed that the #active365 program “was a good way to have [students] communicate what they are doing [but]...the only real problem...was to get them involved.”

Student Resistance to School-Based Social Media Programs

Both Teacher Participant A and B found it a challenge to initially engage students in their social media programs. They indicated that a great deal of energy was required in the attempt to sustain student participation throughout the semester as well. Teacher Participant B noted “I brought it back a lot”, indicating he reminded students to post often when he saw them in class and that he posted “big signs on the walls in the gym and the classroom” regarding the #active365 program. Additionally, Teacher Participant B mentioned that he expected much more interest on behalf of the students as “they always have their phone” with them. Within his classes, Teacher Participant B felt that he exhausted every avenue to engage his students through social media with ongoing reminders in class, demonstrating to students how to post during class “to show what [someone] can do as a photo”, doing “selfies together” in class, role modeling posts for his students to view, providing all requested social media applications as options for student submission, as well as hanging posters with related information. When asked his opinion regarding his perception of student attitude towards social media use, Teacher Participant B indicated that “it was a struggle” to engage his students and that “[social media] was something that they like to do away from school, that I was bringing [it] into school and making [some] sort of an assignment”. Teacher Participant B suggested that perhaps students were disengaged due to their disinterest in having their educator

involved in their social media life, noting that perhaps “they hide” their social media activity and “it’s their own little world and I was trying to get into it”.

Teacher Participant A expressed that engaging some of his students online at first was like “pulling teeth”. Some of his students indicated it was difficult to obtain images of themselves being active while participating in a game or practice and that “it’s hard to get a photo of that” as they did not typically have their WMD with them while they were active. Additionally, some of the students who posted online mentioned they regularly engage in activity outside of class, that they “do all these things, but it’s not every day [they] get a photo of it”. Teacher Participant A recalled student interest in using Instagram as an option for the #active365 program during start up, however Facebook and Google Classroom were the two platforms selected to be used for the program. Once his program evolved and targeted additional PE outcomes online, Teacher Participant A noted an additional challenge: he needed to provide more feedback “to push [student] thinking” and opinions thorough responses, to avoid short “yes” or “no” comments.

The Effect of Age or Grade Level on Social Media Student Participation

While Teacher Participant A taught grade 11 and 12 secondary school students, Teacher Participant B taught grade 8, 9 and 10 secondary students. Two differences were noted regarding the teacher participants’ experiences with the #active365 program: a) some students in the younger grade levels were restricted by parents from participation in social media while older students were not; and b) assigning grades to younger students for PE outcomes achieved through social media was perceived to be more difficult than assigning grades to older students.

Teacher Participant B found that with “a few” of his students, parents would not

allow their child to use a social media profile of any kind, noting “I [have] a few kids” whose “parents won’t allow...accounts like Facebook...[or other] social media accounts”. Additionally, there were “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”. However, no parents expressed concern regarding the #active365 social media program itself and one parent submitted posts for the student via email to the teacher as an alternative method to social media involvement. Teacher Participant A indicated that he did not experience any parental resistance to student use of social media nor did any students have restrictions on their ability to engage online for the purpose of PE.

Teacher Participant B found it difficult to justify improving student grades as a reward for demonstrating PE outcomes through social media for a few reasons. First, the social media program participation was not mandatory, making it difficult to set up in his grade book so that those who did not participate were not disadvantaged. Second, not all of his students participated in the social media opportunity, again creating difficulties within his grade book setup. Third, Teacher Participant B indicated that the #active365 program took place outside of class, not within class where he typically assigns grades.

Discussion

For the purpose of this research, each case study teacher participant started a social media program as an opportunity for students to submit photo documentation of themselves being active outside of class. In doing so, the goal was that students could demonstrate a physically active lifestyle outside of school as well as apply their knowledge regarding related PE specific outcomes within communities of practice, as per the situated learning theoretical framework (Lave & Wenger, 1991).

Social media has been found to provide pedagogical advantages in a variety of subjects, where students can support their learning as an extension of the classroom (Al-Dheleai & Tasir, 2017; Daniels & Bellingsley, 2014; Graham, 2014; Krutka, Nowell, & Whitlock, 2017). However there is a paucity of research examining curricular outcomes and social media in a secondary level PE class specifically. In this study, Teacher Participant A targeted a variety of physical and health related PE outcomes that students achieved through the use of Facebook and Google Classroom platforms. Other research supports the notion that Facebook can be used to demonstrate student understanding of educational outcomes (Graham, 2014). Furthermore, Al-Dheleai and Tasir (2017) add that students believe student comments on educational Facebook posts can help them to further understand course outcomes as well.

Specifically, when demonstrating the achievement of PE outcomes using social media platforms, grade 11 and 12 students in Case Study A received improved grades while grade 8 and 9 students in Case Study B did not. As demonstrated in Case Study B, the ease of rewarding students with grades to reflect their achievement of these outcomes may be difficult and dependent upon the flexibility of their summative assessment (i.e., a four point numerical scale versus a percentage). It is also worth noting that creating a separate grade book task or category of assessment may be difficult and unnecessary. Instead, secondary educators may find more ease in considering such an opportunity as an extension of the classroom where students are simply provided another method of communication to demonstrate PE outcomes. In the assignment of grades, marks may improve in an area already designated to a specific PE outcome, such as those specific to the application of basic skills in alternative environments or games (Alberta Learning,

2000). Using social media platforms to further educational opportunities as an extension of the classroom is a concept that a number of studies support (Al-Dheleai & Tasir, 2017; Becker & Bishop, 2016; Daniels & Billingsley, 2014; Graham, 2014; Krutka et al., 2017; Loomis, 2018). However, literature is lacking in determining differences between younger and older secondary student assessment when assigning grades for course work demonstrated through social media.

Both of the case studies involved in this research demonstrate that flexibility on part of the educator is imperative when engaging students in social media. For example, teachers need to be respectful of social media restrictions imposed by parents and adapt to what students can do. Parents of younger teens have been found to apply restrictions to their teens' social media consumption in the form of where and how often it is accessed (Daneels & Vanwynsberghe, 2017; Symons, Ponnet, Walrave, & Heirman, 2017). When considering a PE social media program such as #active365, it is important to inform parents and obtain permission prior to starting the program (Becker & Bishop, 2016). Teachers should also ensure they are flexible in accepting alternate methods of information submission, such as email or documentation presented in class, to allow equal opportunity for students. Educator flexibility may also mean adjusting opportunities to cater to what students need most. For example, Teacher Participant A targeted PE outcomes that he identified as difficult to achieve through movement in class, supporting a learning environment where wellness is comprehensively discussed.

In addition to the potential for achieving PE outcomes, additional benefits to using social media in PE were identified based on the data collected in this study. First, both Teacher Participant A and B indicated improved relationships and communication

with their students due to the teacher's involvement with students through social media. Improved communication or relationship development between teachers and students through social media has been found in other studies as well (Balcikanli, 2012; Chen & Chen, 2012; Krutka et al, 2017; Nowell, 2014). Three quarters of students in a study conducted by Krutka et al. (2017) indicated that online communication through social media had a positive impact on the relationship with their instructor. Additionally, Chen and Chen (2012) found increased interactions between student and instructor with the use of Twitter. Second, teachers may benefit from role modeling desired behaviour. It is important that PE teachers foster an active class environment as well as role model competence in that behaviour (Baghurst & Bryant, 2012; Bradford, Hickson, & Evaniew, 2014; Gold, Petrella, Angel, Ennis, & Woolley, 2012). Teacher Participant A noted that he took on role modeling physical activity for his students as a personal benefit that could hold him accountable for being active.

While data was not collected directly from students during this study, teacher participant and researcher perceptions have highlighted additional student benefits to using social media in PE. First, students may benefit from engaging in online conversation regarding PE outcomes when their opinions and thoughts are challenged by their teacher or peers. Daniels and Billingsley (2014) support this notion by indicating that Facebook can be used to support more in-depth responses from post-secondary students, while Loomis (2018) adds that high school student critical thinking skills can be encouraged through the use of Twitter. Second, when initializing a social media program in class, students may benefit from learning the differences between public and private posts and how settings can be applied within chosen social media applications. Feng and

Xie (2014) advocate that educational support is necessary to inform youth of privacy settings, especially for populations who are less experienced, for example the younger secondary students in this study. While some students may prefer not to have their posts or opinions viewed publicly by their classmates, others might like their opinions heard by their peers and can take time to formulate and post their thoughts using social media (Loomis, 2018). Social media is a great platform where all students, whether quiet or outspoken, can be recognized and heard (Krutka et al., 2017; Loomis, 2018).

Additionally, more confidence is demonstrated by students behind technology platforms (Chen & Chen, 2012) and student opinion and participation increases when using social media as an extension of the class (Krutka et al., 2017). However Goodyear, Wood and Armour (2019) found that students need more than just lessons on privacy settings at school; PE teachers especially need to address issues concerning health messages communicated through social media to help students manage the information and images they receive (Kirk, 2019). Third, students who use WMD and social media to document physical activity inadvertently communicate and portray healthy behaviours to others in their online community (within privacy permissions). This is beneficial to students as they are using WMD and social media to be physically active instead of sedentary.

Additionally, posts such as those reported by teachers in Case Study A and B also demonstrate to peers what healthy behaviours can look like, as well as what bodies who are active can look like, which Kirk (2019) advocates is important to identify to students; this can be influential on student social media communities as teens tend to mimic their peers, a behaviour that is further encouraged through the use of social media (Wouters & Geenen, 2013). If students can observe their peers communicating and demonstrating

healthy behaviours, perhaps PE teachers can be a positive influence on the social media communication in their students' online communities.

While a social media integrated PE program may contribute an array of benefits to both teachers and students, there are certainly challenges that can arise. As mentioned above, Teacher Participant B encountered limitations set by the parents of his students where the adolescent was prohibited from engaging in social media. This result specific to Case Study B may be unique to this study, however parental limitations regarding the use of social media as an extension of the classroom is an area that is lacking literature. Additionally, as detailed above, Teacher Participant B found it challenging to justify improving grades for his students. Considering that Teacher Participant A did not experience either of the two aforementioned challenges with his students, in comparing the data of the two case studies involved, there may be more challenges or limitations faced by the educator for younger secondary students. However, both teacher participants experienced some difficulty in engaging or sustaining student participation in their respective social media PE programs. Denker, Manning, Heuett and Summers (2018) note that students communicate using social media platforms as an extension of the classroom when doing so is met with ease, not difficulty.

Both Participant A and B indicated they would attempt a social media program again in the future. For educators interested in initiating a PE social media program with their class, the aforementioned benefits and challenges discussed should be considered.

Recommendations and Final Thoughts

For PE teachers interested in adopting social media as an extension of the classroom, the following recommendations are encouraged for consideration. First, PE

teachers need to be flexible in meeting student needs to ensure all students receive equal opportunity for achieving PE outcomes online. Second, teachers should consider the interests and curricular needs of their students when deciding which PE outcomes to target using a social media platform. Third, educators should consider an initial discussion in class regarding how social media privacy settings can be changed for posts to reach intended audiences.

There are important limitations to consider for this study. First, no students in either of the case studies participated directly in the research, therefore teacher perception and observation was used to gauge the thoughts and feelings of students. 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, the two case studies detailed in this report are not generalizable to what all teachers should expect when working to engage students in a PE focused social media program. While the results are not generalizable, these cases do provide two examples regarding the benefits and challenges a class community may experience using an online program.

Based on the data collected within this study, a variety of future research avenues have presented themselves. First, gaining perspective from students engaged in a PE based social media platform would be valuable to provide more insight as to the impact such a program may have on student motivation. Second, identifying new methods or strategies to encourage daily physical activity in teens and discourage sedentary behaviour associated with technological improvements is imperative. Third, while there are no current Alberta health or PE outcomes that specifically require students to demonstrate understanding related to healthy and responsible personal Internet usage, this

could be an area of opportunity for health curriculum development moving forward.

As technology advances both in software and hardware, educators need to continue to integrate technology into educational opportunities for students. As demonstrated in this study, efforts to start up and maintain WMD and social media integration as an extension of the classroom stand to benefit both teachers and students. Using popular technology to demonstrate to students how their favorite devices and applications can be used in active ways may give hope for a future where adolescents are enticed to move more and sit less than they currently do.

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Summary

This research used a multiple case study approach to examine two separate Alberta PE teachers and their experience with a PE focused social media program. The #active365 program was used in this study to identify one avenue that teachers could take to engage students to be physically active using WMD and social media in PE. As part of the #active365 program, students were asked to post active photos of themselves as a way to further demonstrate active PE curricular outcomes. Teacher participants engaged their students in the social media program for the duration of four months. The purpose for this program was to give insight to the research question: How can PE teachers meaningfully engage students to be physically active as part of a healthy, active lifestyle using WMD and social media? The main objectives were: a) to understand the benefits and barriers of PE student participation with WMD and social media as an extension of the PE classroom; and b) to determine if WMD and social media initiatives can successfully engage students to lead healthy, active lifestyles outside of class.

For the purpose of this research, each case study teacher participant initiated a program with the intention of using social media as an opportunity for secondary students to submit photo documentation of themselves being active outside of class, demonstrating a healthy, active lifestyle. In doing so, students demonstrated the application of knowledge regarding related PE specific outcomes within the provincial curriculum. Both teacher participants involved in the study observed student documentation of physical activity through photo posts submitted on social media platforms and Google Classroom. As found in one case study, not only do students have the potential to achieve active lifestyle related outcomes through social media photo posts, they also have

the potential to demonstrate a variety of secondary level PE outcomes when responding to or commenting on question-style posts provided by their teacher. Along with asking for photo submissions that demonstrated student physical activity and physical literacy outside of class, one teacher participant posted 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. By evolving his social media program the teacher participant engaged all of his students and was able to document that they achieved related PE curricular outcomes, rewarding his students with improved grades where deserved.

Both of the case studies involved in this research also demonstrated that in order to ensure all students are included with equal opportunity to achieve the same PE outcomes using a social media program, flexibility on part of the educator is imperative. The teacher participant in this study who taught grades 8 and 9 secondary students experienced some parental resistance and restriction with regards to student participation on social media or having any photo content posted online. These restrictions required the teacher participant to be open to receiving information and posts via email or in person to ensure equality for student opportunity to demonstrate physical activity outside of school. Flexibility regarding content presented through social media was also demonstrated to be valuable in capturing student interest. One teacher participant brought his students' attention to a variety of topics and conversations regarding different current events and PE outcomes; specifically PE outcomes that he identified as being more difficult to achieve through movement in class. The social media platform allowed

for greater opportunity to explore an important concept or PE outcome more thoroughly with discussion where each student had the freedom to voice their opinion in one of two ways, by private submission to their teacher or public submission for their class to see online. Teacher Participant B demonstrated flexibility by providing all social media applications requested by his students as an opportunity for posting within his program. In the use of social media as an extension of the classroom, it was apparent that educator flexibility is needed.

In addition to the potential for achieving PE outcomes, two other benefits of using social media in PE were identified following analysis of the data, which include teacher perceived improved communication and relationships with students, and an opportunity for teachers to role model. A number of student benefits were also perceived which include new avenues to communicate outcomes achieved as well as potentially improved grades, the opportunity to think about targeted PE outcomes more critically, having the potential to learn more about photo privacy settings when posting online, using technology typically associated with sedentary behaviour to be active, and observing what healthy behaviours are and what healthy bodies do in contrast to what the media typically communicates and portrays.

While a social media integrated PE program may have the potential to contribute towards achievement of PE outcomes and may pose the potential to benefit both teachers and students in a variety of ways, there are certainly challenges that can arise from such an initiative. As previously mentioned, teachers may experience restrictions to student use of social media, as demonstrated in Case Study B. Another challenge for teachers may involve integrating improved grades into an already rigid assessment structure. Both

teacher participants clearly communicated a similar challenge within the study, being that they experienced difficulty in engaging students to participate in their respective social media PE programs. The teacher participants within this study used a number of strategies to try and engage students in the social media program. Interestingly, despite the challenges, both case study teacher participants indicated that they would however attempt to engage future PE students in social media. If the technology is available and students have access to the applications, considering the aforementioned potential benefits and opportunities to achieve PE outcomes, perhaps working to engage students in a PE social media opportunity is worth the effort.

Limitations

The research design for the cases involved in this study initially requested the participation of the teacher participant's students, inviting their feedback through a post-study questionnaire. No students in either of the case studies participated directly in the research, therefore teacher perception and observation were used to gauge the attitudes of students towards the social media PE program. Additionally, one of the two case studies investigated in this study involved predominantly male students, which may have influenced the degree to which students in Case Study A demonstrated engagement in social media as an extension of the classroom.

While the experiences of the two teacher participants were reported to be positive and without issues, consideration should be made for the ethicality involved with teacher and student interaction online, especially when communication can be made private. Principals may help mitigate this risk by ensuring that they possess equal access to all accounts used online.

The two case studies detailed in this report do not have the ability to generalize what all Alberta teachers should expect or will encounter when working to engage students in a PE focused social media program. While the results are not generalizable, these cases do however provide two examples as to how a class community may benefit from an online program, as well as what challenges they may encounter.

Moving Forward

Based on the data collected within this study, a variety of future research avenues have presented themselves. First, gaining perspective from students engaged in a PE based social media platform would be valuable to provide more insight as to the impact such a program may have on student motivation. Second, investigating how teen perception might be influenced by contrasting the media's skewed health messages with the demonstration of healthy peer behaviour online would certainly be of interest. Third, identifying new methods or strategies to encourage daily physical activity in teens and discourage sedentary behaviour associated with technological improvements is imperative.

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Appendix A – Teacher Participant Consent Form

Mrs. Lisa Taylor
Master of Physical Education Student
School of Human Kinetics and Recreation
Memorial University of Newfoundland
403-797-1790
Imp620@mun.ca

Informed Consent Form - Teacher Participant

Title: Exploring Social Media and Student Engagement in Physical Education:
The #active365 Program

Researcher: Lisa Taylor, Masters of Physical Education, Human Kinetics and Recreation, Memorial University; 403-797-1790, Imp620@mun.ca

Supervisors: Erin Cameron, PhD, School of Human Kinetics and Recreation, Memorial University of Newfoundland, 709 864 2729, ecameron@mun.ca

Linda Rohr, PhD, School of Human Kinetics and Recreation, Memorial University of Newfoundland, 709 864 6202, lerohr@mun.ca

You are invited to take part in a research project entitled “Exploring Social Media and Student Engagement in Physical Education: The #active365 Program.”

This form is part of the process of informed consent. It should give you a basic idea of what the research is about and what your participation will involve. It also describes your right to withdraw from the study. In order to decide whether you wish to participate in this research study, you should understand enough about its risks and benefits to be able to make an informed decision. This is the informed consent process. Take time to read

this carefully and to understand the information given to you. Please contact me if you have any questions about the study or for more information not included here before you consent.

It is entirely up to you to decide whether to take part in this research. If you choose not to take part in this research or if you decide to withdraw from the research once it has started, there will be no negative consequences for you, now or in the future.

Introduction

My name is Lisa Taylor and I am a Masters of Physical Education student at Memorial University. I am currently in my second year of the program working to complete my thesis. I am also a physical education (PE) teacher in Alberta (AB) and have been teaching high school students for seven years. As part of my Masters thesis, I am conducting research under the supervision of Drs. Erin Cameron and Linda Rohr.

My passion for this research comes from a few avenues. Due to the rise in use of wireless mobile devices (WMD) such as smartphones, youth and adults are spending more time looking at screens than ever before. The majority of teenagers especially own a smartphone as well as at least one social media profile online. The problem with increased screen time is that much of that time is spent sitting still and not moving, where inactivity has been linked to a variety of health concerns and chronic diseases. Further to that, the media that youth are viewing is often skewed when it comes to considering what healthy behaviours and body images are. There is an excellent opportunity present where PE teachers can use student interest online to encourage physical activity, teach students about what is healthy with regards to what they see in the media, as well as improve student assessment in PE.

Purpose of study:

The purpose of the study is to investigate how PE teachers might help motivate students to be active outside of class by encouraging use of wireless mobile technology (such as smartphones) and social media to demonstrate physical activity. The “#active365 program” is a program that will be used to investigate the purpose of this study by providing an opportunity for students to take photos of themselves being active for marks. This program has the potential to encourage students to be physically active by using their technological devices and can demonstrate to the teacher an understanding of what it means to be active as part of a healthy lifestyle outside of class.

What you will do in this study:

Using the documents provided to you, you will be guiding your PE class through the #active365 program. Using their own WMD, by borrowing one from the school library,

or with a friend who has access to a wireless device, your students will take a photo of themselves or the equipment they are using while being active, adding a description of what they are doing if not otherwise obvious in the photo, typing the phrase “#active365”, and will post it to social media or send it through social media to you. Once received, you will assign that student an improved grade for their demonstration of physical activity outside of class as part of a healthy, active lifestyle in accordance with AB curriculum D10-1, D20-1, or D30-1 outcomes. In the interest of role modeling, you may choose to participate in the #active365 program as well by submitting your own activity posts on your social media sites for students to view.

Specifically, your responsibilities for this study will include:

- completing a short, online, preliminary questionnaire
- introducing the #active365 program to your class and collecting your students’ responses regarding what social media sites they prefer to use for the program
- creating one or more social media profiles for yourself, that are student friendly, which you can use for the #active365 program
- informing your students of the details regarding the #active365 program as well providing information regarding cyberbullying
- keeping field notes and briefly documenting conversations with your students, their parents, and other teachers regarding the #active365 program
- sending your students’ #active365 submission copies (i.e. screenshots) made through social media sites or via email (or a note signed by a parent) to my email, for data storage purposes (you may alternatively copy and paste the screenshots to your field notes)
- role modeling #active365 program submissions of your own (optional)
- participating in a phone or Facetime, post-study interview

This opportunity is completely optional to you and your students and can turn into whatever is most meaningful to your class community.

Length of time:

The program will run for the duration of one semester, September 2017 until January 2018. The frequency that your students participate and spend time participating is entirely up to them.

Withdrawal from the study:

At any time the your students may choose to stop submitting posts or withdraw from the study entirely. If one of your students chooses to be withdrawn from the study, it is asked that your student and/or their parent/guardian send me an email to inform me of the withdrawal. All data regarding your student collected up to and following that point will be disregarded in data analysis for the study. Additionally, if you and/or your school

administration deem it necessary that one of your students be removed from the study, upon your request that student will be withdrawn from the study (if they are a participant.) You may also withdraw from the study at any time for any particular reason. Any data up to and following that point regarding yourself and any of your students will be disregarded and not used in data analysis for the study. While the study will stop immediately, you may continue the #active365 program with your class, exclusive to the study.

You or your students may choose to be withdrawn from the study up until January 10, 2018. After this point, you or your students may no longer be withdrawn from the study as data will be in the process of analysis and theme development. All data collected will be confidential where any identifying information will be given an alias if mentioned in the final report. Photo submissions from the study will not be used unless explicit permission is given (see below in “Your Signature”.) There will be no negative consequence whatsoever to you or any of your students if the choice is made to withdraw from the study.

Possible benefits:

From the #active365 program and this study experience your student may experience the following benefits:

- improved grades within PE
- increased physical activity and overall wellness
- an understanding for how to respectfully incorporate their WMD and social media activity into their education
- an opportunity for student media consumption and screen time to encourage healthy behaviours

From the #active365 program and results of this study, you may experience the following benefits:

- you may get to know your students better as individuals
- you may build more meaningful teacher-student relationships with your students
- you may find report card commenting easier as you may get to know your students better as individuals
- you may learn how to incorporate more modern technology into PE
- you may understand another way to motivate students to be active outside of class
- you may become a more effective role model through your participation in the #active365 program work

Possible risks:

Risks associated with this study include the risk of general social media use and subjectivity to cyberbullying. It is encouraged that any cyberbullying be dealt with by you and/or your school administration. Any of your students found to bully others should be immediately removed from the program and should not receive any further grade benefit from their participation within the program. In prevention of cyberbullying, please keep a close eye on #active365 program related posts online.

Confidentiality & Anonymity:

Confidentiality is ensuring that identities of participants are accessible only to those authorized to have access. Anonymity refers to not disclosing participant's identifying characteristics, such as name or description of physical appearance. Any names, online usernames, or any other personal detail regarding you or your students collected during the study will be communicated via alias in final reporting, with the exception of photo submissions that will only be used in the circumstance that explicit permission is given (see the "Your Signature" section below.) As you are running the #active365 program with your entire class however, your students' participation in the #active365 program will not be anonymous if your students chose to post publically. It is important to note however that your students' participation in the study and collection of data will indeed be anonymous as the you will not be made aware as to which students are involved in the study. This condition has been put in place to reduce the likelihood that your students feel obligated to participate in the study. Every reasonable effort will be made to ensure participant anonymity. Furthermore, you or your students will not purposely be identified in any reports or publications unless explicit permission is received (see the "Your Signature" section below.)

Recording of Data:

Data will be recorded through your field notes, my field notes, written indication of your students' preferred social media sites, your open-ended preliminary questionnaire, an open-ended questionnaire for your students following program participation, intermittent conversations with you and your students and/or their parents/guardians throughout the program, as well as social media posts.

Storage of Data:

At the end of the study, data collected will be kept in a password protected Google Drive folder as well as on a password protected laptop for my use alone. Data will be kept for a minimum of five years, as required by Memorial University policy on Integrity in Scholarly Research.

The on-line questionnaire company, Google Forms, hosting this questionnaire is located in the United States and as such is subject to U.S. laws. The US Patriot Act allows

authorities to access the records of internet service providers. Therefore, anonymity and confidentiality cannot be guaranteed. If you choose to participate in the questionnaire, you understand that your responses to the questionnaire will be stored and may be accessed in the USA. The security and privacy policy for the web questionnaire company can be found at the following link:

<https://www.google.com/policies/privacy/#application>

Reporting of Results:

Following the study the data collected will be used for a thesis paper as well as potentially journal articles, magazine submissions, and conference presentations. Aliases will be used in the case of you or your students' names or online usernames. Your students' photo submissions that you document will only be used in publications with your student and their parent/guardian permission to do so (see the "Your Signature" section below.) Similarly, your own photo contributions to the #active365 program will only be used with explicit permission (see the "Your Signature" section below.) Upon completion, my thesis will be available at Memorial University's Queen Elizabeth II library, and can be accessed online at:

<http://collections.mun.ca/cdm/search/collection/theses>.

Sharing of Results with Participants:

Once the study has been completed, data has been analyzed and thesis work has been submitted for approval, I will provide the pdf or url to you upon request, which may be shared with your students as well.

Questions:

You are welcome to ask questions at any time during your participation in this research. If you would like more information about this study, please contact me at: Imp620@mun.ca.

The proposal for this research has been reviewed by the Interdisciplinary Committee on Ethics in Human Research and found to be in compliance with Memorial University's ethics policy. If you have ethical concerns about the research, such as the way you have been treated or your rights as a participant, you may contact the Chairperson of the ICEHR at icehr@mun.ca or by telephone at 709-864-2861.

Consent:

Your signature on this form means that:

- You have read the information about the research.
- You have been able to ask questions about this study.
- You are satisfied with the answers to all of your questions.

- You understand what the study is about and what you will be doing.
- You understand that you are free to withdraw from the study without having to give reason and that doing so will not affect you now or in the future.
- You understand that any data collected from you up to the point of your withdrawal will not be used in the analysis of data.

If you sign this form, you do not give up your legal rights and do not release the researchers from their professional responsibilities.

Your signature:

I have read what this study is about and understood the risks and benefits. I have had adequate time to think about this and had the opportunity to ask questions and my questions have been answered.

I agree to participate in the research project understanding the risks and contributions of my participation, that my participation is voluntary, and that I may end my participation.

Please circle either Yes or No:

I agree to taking a questionnaire	Yes	No
I agree to have my data and collected data communicated in the final paper	Yes	No
I agree to having my online work documented	Yes	No
I agree to be interviewed by phone or online following the study	Yes	No
I allow my name and online profile username(s) to be identifying traits for the purpose of data collection, understanding that with the publication of any data, my name and username(s) will be given aliases.	Yes	No
I allow my name to be identified in any publications resulting from this study.	Yes	No
I allow for my #active365 program photo submissions to be used in any publications resulting from this study	Yes	No

A copy of this Informed Consent Form has been given to me for my records.

Signature of teacher participant

Date

Researcher's Signature:

I have explained this study to the best of my ability. I invited questions and gave answers. I believe that the participant fully understands what is involved in being in the study, any potential risks of the study and that he or she has freely chosen to be in the study.

Signature of principal investigator

Date

Appendix B – Letter for Principal

Mrs. Lisa Taylor
Master of Physical Education Student
School of Human Kinetics and Recreation
Memorial University of Newfoundland
403-797-1790
lmp620@mun.ca

How to engage students in physical education using social media: the #active365 program.

Dear (name of principal):

My name is Lisa Taylor and I am a Master of Physical Education student at Memorial University of Newfoundland (MUN). While studying my program at MUN online, I also teach high school physical education (PE) at Lord Beaverbrook High School in Calgary, AB.

I am conducting research for the purpose of my thesis under the supervision of Drs. Erin Cameron and Linda Rohr. I am currently awaiting approval from the Interdisciplinary Committee on Ethics in Human Research at MUN to conduct research starting September 1, 2017. With your permission, I would like to invite you to consider allowing (name of teacher) and (his/her) class(es) to partake in my study. With your approval the necessary application to conduct research will be completed and submitted to the (board of education) ethics review department so that data collection can begin in September. Only in the condition that my research is approved by yourself, MUN, and the (board of education) will this research move forward.

Aim of the Research

This research aims to:

- (1) identify whether or not students wish to use their own wireless mobile devices (WMD) and favourite social media sites in combination with PE.

- (2) identify whether or not students will use their WMD and favourite social media sites to demonstrate their physical activity initiatives outside of the classroom.
- (3) provide a more informed assessment of AB PE outcomes D10-1, D20-1, and D30-1 for teachers in analyzing whether or not students are active outside of the class as part of a healthy, active lifestyle.
- (4) identify how screen time on WMD, which typically encourages sedentary behaviour and inactivity, can be used for physical activity and health benefits.

Significance of the Research Project

This research is significant in four ways:

- (1) it will provide information regarding student desire to incorporate WMD and social media into their education, specifically PE.
- (2) it will improve the ability of the teacher to better assess D10-1, D20-1, and D30-1 of the AB PE curriculum.
- (3) it will provide an opportunity for the teacher to learn more about his/her students as individuals.
- (4) it has the potential to help the teacher develop stronger teacher-student relationships as teachers learn more about their students as individuals.

Benefits of the Research to Schools

Schools will benefit from this research in the following ways:

- (1) results from the study will inform teachers of an avenue for incorporating modern technology into PE.
- (2) results from the study will be communicated to the participating schools and the broader public.

Research Plan and Method

Data sources collected for research will include a post-trial student questionnaire, a preliminary teacher questionnaire, written indication of student preferred social media sites, teacher field notes, intermittent conversations or emails with teacher participants throughout the program, post-trial teacher interview, researcher field notes regarding communication with teacher participants, as well as photo evidence of student participation online. Student questionnaires will be done outside of class time. This questionnaire will be filled out anonymously as the students will not be required to provide their name. For the purpose of data collection, information presented within #active365 posts will be collected (i.e. social media site username, as well as the photo taken) and student names will be recorded within teacher field notes. However, any names or social media account information provided by any data source throughout the study will be kept confidential and will be communicated through an alias in presentation

or publication of results. Students and their parent/guardian have the option of giving permission for me to use their photo submissions in publication of this study on their consent form. Student participants as well as teacher participants may withdraw from the study at any time without any penalty.

Informed consent letters will be emailed to parents for both students and parents or guardians to sign and submit to me. Participation in this study is not obligatory and ultimately up to the student and their parent or guardian. Only students that consent and whose parents or guardians also consent will participate in the study. Students who do not consent but their parent/guardian gives consent, will not be part of the study.

If a student and/or parent/guardian does not consent to be part of the study, they can still participate in the #active365 program with (insert teacher name here.) That way, all students are given the same opportunity to receive improved grades for demonstration of Alberta PE curriculum outcomes through photo proof of physical activity as part of a healthy lifestyle.

To help reduce the likelihood that a student might feel obligated to participate in the study, the teacher will know who is participating in the #active365 program however will not be informed as to which students have consented to being part of the data collection and taking part in the study. The teacher will collect data regarding all students and any data received at the end of the study regarding students who have not consented to being part of the study will be disregarded and not used in data analysis; similar to how I would collect, organize, and disregard data if I were personally observing the students' behaviour in class. If a sensitive issue arises within the study period regarding a student and the teacher or administration deems it necessary for that student to be removed from the study (if they are a participant), the teacher can request that I withdraw that student from the study if they are a participant, and I will do so; all data collected up to that point or received moving forward will be disregarded in data analysis.

Further Information

(Name of teacher) will be participating in the research with his/her students. Once the program has started with their class and (Name of teacher) has created new social media profiles, (Name of teacher) will provide their social media profile information for your review upon request.

Thank you for taking the time to review this information. Pending the ethical approval of (board of education) and MUN, your permission for (Name of teacher) and his/her class to participate in this research is greatly appreciated and will contribute to academic knowledge regarding technological advancement in PE in Alberta.

Please contact me with any questions you may have.

Sincerely,

Lisa Taylor
Principal Investigator
Master of Physical Education
Memorial University of Newfoundland

Appendix C - #active365 Start Up Guide



#Active365 Start Up Guide

Begin your class challenge in just 7 easy steps!

Hello!

Thank you for taking the opportunity to set up the #active365 program with your students! This is an exciting program that you will enjoy engaging in with your class. What better way to fight the negative side effects associated with screen time than by turning screen time into something active and fun?

In the pages that follow you will find a step-by-step guide to get the #active365 program moving with your class. Follow this guide to get started and then ride the wave wherever it goes! If you stumble upon anything or have any questions, please feel free to contact me!

Note: the conversation outlines within the guide are written in a way that I would speak to my class, in a relaxed and easygoing fashion. Feel free to improvise to better suit your approach with your own class.

Yours in physical activity,

Lisa Taylor
lm620@mun.ca

STEP 1 - Figure out which apps to use.

The first step in figuring out how to make the #active365 program meaningful to your class is to find out which applications (apps) your students favour when engaging in social media and their mobile technology. The reason why you want this information is to ensure you do not waste time encouraging your class to engage in apps that they are not necessarily interested in. At the beginning of a lesson, hand out pencils and paper to each student. Ask your students to write down which apps they prefer to use when engaging in social media and to circle their favourite.

The instruction/conversation may look like this:

"I have an exciting opportunity for you that will give you a chance to earn extra marks towards your physical education (PE) grade. It is called the #active365 program and it's all about taking photos of yourself or the equipment you use while being active! What I need to know before we get started is what apps you use most often to engage in social media. Meaning, how do you connect with your friends (other than texting) and what apps or sites do you find yourself posting your own photos on or commenting on other's images the most? On the piece of paper provided, please write down all the social media sites you use often and circle the one you use the most. If you do not use any social media apps or sites, just write 'none'."

Have your students submit their papers once they have written the information down. Collect these papers and later record the apps suggested and the number of times each were mentioned in your teacher field notes (see Step 5). Identify the most popular apps and plan to use those for the #active365 program with your class!



STEP 2 – Create accounts for popular apps.

Now that you know which apps your students use the most, you want to create accounts for those applications that can be used for the #active365 program. If you already have a professional, student appropriate account, you may use this for the study, however I strongly advise that you create new accounts just to be safe! Creating new accounts is actually beneficial, in that you can create each account using the same username, making it easier for your students to find you online. For example, if your username on your Twitter account is *MsSmithsActive365*, ensure that your username for your other accounts are also *MsSmithsActive365* (if possible.)

In my experience, the apps most often used by students include: Twitter, SnapChat, and Instagram. If your students would prefer to use a different application, please contact me and I will be happy to provide a link or further information regarding how to set up an account for that app. Click on the links below to find videos regarding how to set up an account for the aforementioned apps.

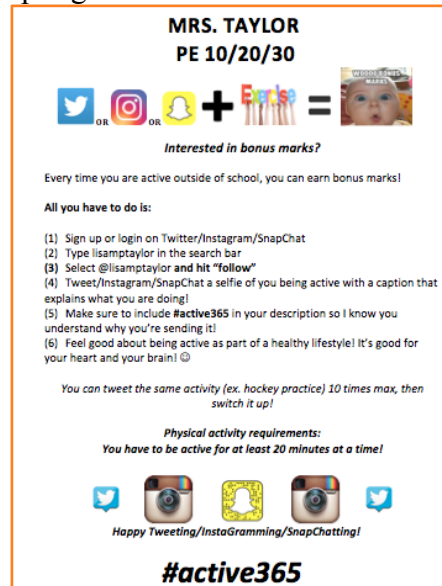
How to set up a Twitter account.
How to set up a SnapChat account.
How to set up an Instagram account.



STEP 3 – Hang the poster.

In the materials attached, you will find a poster that I have used to engage my own students in the #active365 program; the document is called “active365_poster.doc”. Since the poster is in a .doc format, you can simply substitute my information for your own. Ensure to include your name and course name at the top as well as your account usernames within the text. If you feel the poster needs to be further edited, please edit it to make it most meaningful and applicable to your class!

Once your poster has all the necessary information on it, including the different apps you will be offering, hang your poster in an area that your students can find easily. Encourage your students to take a photo of the poster so that they have your username handy when attempting to access that information at a later time.



STEP 4 – Introduce the #active365 program to your class.

Grab a copy of your poster, get your class' attention, and explain the #active365 program to your class. The beginning of your conversation might sound something like this:

“Remember our conversation about which social media apps you folks enjoy using the most? Well, I have gone and created an account for each of those apps so that we can start the #active365 program together. Simply put, you will have the opportunity to get extra marks every time you take a photo of yourself being active outside of class and submit it to me using social media.” (This is a good time to read through your poster.)

“So to recap, the rules are: (1) you have to be active for 20 minutes or more per day (in a minimum of 10 minute chunks) in order for your activity to qualify for a submission, (2) you need to take a picture of yourself or your equipment while being active, and (3) you need to write #active365 on your post as well as a description of what you are doing in your picture (if it isn’t otherwise obvious) so that I know you understand why you’re sending me active photos of yourself! You can post your photos on your profile or page, or you can message them to me directly. You are also welcome to email them to me instead, or have your parent/guardian write a note regarding your activity if you like. The reason why I’m providing you with this opportunity is because I am interested in how you are active outside of class and I want to reward you for your activity efforts! However, this challenge is totally optional. If you prefer not to participate, your mark will not suffer at all whatsoever. In fact, if you would prefer not to participate and find another way to show me you are active outside of class, I am happy to assign you the same improved grades. Either way, it is totally up to you.”

This part is optional: “I too will be committing to 20 minutes of daily physical activity for the duration of this challenge, so you are not alone in your efforts! You will find my posts on my social media pages!”

Let your students know where they can find a copy of your poster so that they can record your username and program guidelines. Encourage your students to ask questions and give them an example of what a student would do to submit an #active365 post.

Cyberbullying

With any work done online, specifically with social media, cyberbullying becomes a risk. While students may have heard of bullying online, they may not know how to access support if they are a victim to it, or the consequences of their actions if they are the ones initiating it.

Once the #active365 program has been introduced to your students, please inform your students of the following:

- cyberbullying is also known as online bullying and includes sending any aggressive or cruel messages online with the purpose of inflicting harm on another individual
- cyberbullying includes: flaming (online fighting through messaging), harassment (repeatedly sending harmful messages), cyberstalking (harassment that includes threats and causes fear), denigration (gossiping or spreading rumors intending to hurt someone’s reputation), impersonation (posing as someone else and posting content), outing (sharing someone’s secrets), and exclusion (purposefully excluding someone online)
- if you or someone you know is being cyberbullied, tell your teacher or a trusted grown up immediately
- reporting can be done in person or anonymously (i.e. leaving a note)
- individuals who are found to cyberbully others will be immediately removed from the #active365 program and will not receive any grade benefit from the program

At this point, please also review how cyberbullying is disciplined within your school specifically (i.e. meeting with principal and school police officer, suspension, etc.) so that students understand the consequences of ill behaviour online.

STEP 5 – Introducing the Study

Beam Me Up & The Draw Prize

In order to keep the inherent power dynamic of the teacher/student relationship separate from the study itself, all communication regarding the study will just need to come from me! You will run the program with your class as though a research project doesn't even exist and I will filter the information when it comes my way based on the students/parents/guardians that have consented to being a part of the study. So, after you have introduced the #active365 program to your students, you will either Skype me in or show a video of me to your class regarding the study (we can discuss what works best for you.) I will introduce why I am doing my research and how the students can get involved. I will let the students know that if they choose to be a part of the study, for each #active365 submission they will be given one entry towards a \$200 gift card draw prize that will be hand drawn at the end of the study. Students who participate in the study will earn ten additional entries once they complete the post-study questionnaire online. The gift card awarded to the student will allow for in store or online purchases at either Sport Chek or LuluLemon. Once I receive all of the data and can assign all of the entries, I will do the draw!

Student/Parent/Guardian Emails & Consent Forms

In order to keep you distanced from which of your students are involved in my data collection, I need to keep the lines of communication open between the parents and myself, which includes consent form submission. In the Skype call or video presentation with your class, I will let the students know that I will be sending an email to you with a consent form attached. If you would then kindly send that email on to your students' parents with the consent form attached, we should be set. Within the email I will include a brief description of the #active365 program, the study opportunity, that students can win a prize, a request for interested students and parents to respond to me via email, and the importance of submitting the consent form.

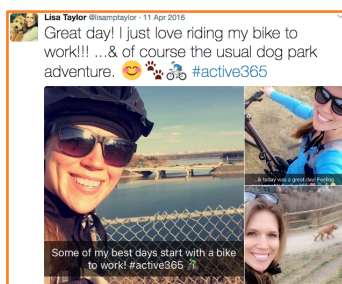
The consent form will be made available to sign electronically so that parents can send it to me via email. However, if parents prefer to print the consent form out and submit it in hard copy, they can either mail it to me or submit it to the main office of the school for third party collection. This might be a secretary or another trusted staff member in the school that can collect the forms, check for all signatures, and then send my way. Please provide this address for the third party staff member to send signed consent forms to:

(Address provided.)

STEP 6 – Start role modeling, remind them, and take notes.

Role Modeling

A great way for students to be clear about how to properly record a submission is for you to demonstrate it with your own #active365 posts. Take a photo of yourself being active and write a description of what you are doing, making sure to include #active365 in your description, just like you have asked your students to do.



Remind Them

If you haven't received any requests, follows, or submissions within a few days, just remind your students of the opportunity in a following class. Try not to let too many days get in between when you first mention it and when you remind your students!

Once you receive a submission, let your students know that someone in the class (without mentioning who exactly, unless you have their permission to do so) is already earning improved grades with the #active365 program. This should help motivate students to get moving!

If you remind your students a number of times and still find that you are not receiving any submissions, feel free to contact me to discuss how to move forward!

Take Notes

Any time something regarding the #active365 program is mentioned, please record it in your teacher field notes. A Google Doc has been set up for you to use that can be accessed here: [\(teacher participant specific Google link to be inserted here\)](#).

In your field notes, please record when you mention the #active365 program or the #active365 program is mentioned to you, whether that be with students, parents, or other individuals around the school. With each note you record, please also indicate the date. For example, when you introduce the program to your class, remind your class, a student asks you a question, or you converse with a staff member or parent about #active365, make a note including a brief description as to what was mentioned. In description, your field notes may be as brief or as lengthy as you like. These notes will be used to inform the research findings.

Note: any names mentioned in your field notes will be kept confidential and used with an alias in research findings unless explicit permission is given by the participant and parent guardian.

Examples of field note entries can be found below:

September 6, 2017 - Did Step 1 of the Start Up guide with my PE 10 class. Apps mentioned were Instagram, Snapchat, and Facebook. Snapchat was circled the most. 10 students indicated "none". This evening I created a new Snapchat and Instagram account using the link in the Start Up Guide. I emailed Lisa for instructions to set up a Facebook account.

September 8, 2017 - I edited the #active365 poster Lisa sent in the email and hung it on the wall by my office. Liam saw it after football practice and asked what it was about. I told him I would explain it in class on Monday.

October 5, 2017 - I received 3 posts from Eric (football), Hevyn (dance), and Hannah (walked dog) tonight. Eric and Hevyn were through Snapchat, and Hannah was a private message on Instagram.

November 13, 2017 - I haven't received any posts for at least a week, so I reminded the students in class today. I mentioned that someone in the class

improved their track and field effort grade by 10% in October. Sarah said “I’ve got to find you on Instagram.” I told her to take a picture of the poster outside my office (with my username) so she could find me on Snapchat after class.

December 30, 2017 - I received 1 post from Ali (skiing). I’ll boost his basketball effort grade (the last unit we had before winter break) when I get back in the office in January.

STEP 7 – Ride the wave and enjoy!

Now that your accounts are set up, your students are sending you submissions and you are learning more and more about how your students engage in physical activity outside of school, sit back and enjoy! One of the best parts about this program is getting to know more about your students, creating opportunity for more specific conversation with them that shows you really care about what they do!

That’s it! Have a great adventure!

Appendix D - #active365 Program Poster

MRS. TAYLOR

PE 10/20/30



Interested in bonus marks?

Every time you are active outside of school, you can earn bonus marks!

All you have to do is:

- (1) Sign up or login on Twitter/Instagram/SnapChat
- (2) Type lisamptaylor in the search bar
- (3) Select @lisamptaylor **and hit “follow”**
- (4) Tweet/Instagram/SnapChat a selfie of you being active with a caption that explains what you are doing!
- (5) Make sure to include **#active365** in your description so I know you understand why you’re sending it!
- (6) Feel good about being active as part of a healthy lifestyle! It’s good for your heart and your brain!

You can tweet the same activity (ex. hockey practice) 10 times max, then switch it up!

Physical activity requirements: You have to be active for at least 20 minutes per day in a minimum of 10 minute chunks!



Happy Tweeting/InstaGramming/SnapChatting!

#active365

Appendix E – Teacher Participant Preliminary Questionnaire

#active365 Preliminary Teacher Questionnaire

Hi! Thank you so much for participating in the #active365 program research! This questionnaire will gather a few details to help illustrate the context of your class. It will take approximately 5-10 minutes to complete. If you need to leave the questionnaire prior to completion, your responses will be lost. Responses are only recorded once the "Submit" button is clicked on the last page. If you are at all uncomfortable answering any of the questions in this questionnaire, please feel free to skip those questions.

Click "Next" to begin!

Demographics

1. What is your name?
2. What school do you teach at?
3. What community, town or city, and province or state is your school located in?
4. How many years have you been teaching secondary (grades 9-12) PE?

Context

5. At the moment, how many students are in the class you plan on having participate in the #active365 program?
6. How many students are attending your school this year?
7. What grade levels does your school offer? For example, K-12, 6-9, 10-12?
8. Do students within your class have access to borrow a wireless mobile device from the school that can take photos and access the Internet? If so, how might a student acquire the device?
9. Does your school have a theoretical educational focus? For example, inquiry based learning, art centred learning, an outdoor education or technology focus, etc.? Please explain.

Physical Activity & The #active365 Program

10. Do you enjoy being physically active? For example, how often do you engage in

physical activity and what activities do you most enjoy doing? Please explain.

11. How often do you plan on role modelling active behaviour for the #active365 program online for your students?

12. What wireless mobile devices that are capable of taking pictures and connecting to the Internet (either by Wi-Fi or data) do you own? This could be a smartphone, tablet/iPad, or digital camera. Please list all of your devices.

13. Do you have a data plan on the wireless mobile device that you use most often, or are you only able to connect to the Internet using Wi-Fi?

14. What wireless mobile device do you plan on using the most (to either submit your own posts or receive student posts) during the #active365 program

Social Media

15. Do you own a social media profile or account? This may include sites such as Facebook, Twitter, YouTube, SnapChat, Instagram. Please list all sites you believe may apply.

16. What social media site do you use most often?

17. Prior to the study, how often did you access social media sites for your own personal or professional use? For example, how many times per week or month?

That's it! Thank you again for your time and energy in being a part of this very valuable work! Please let me know if I can assist in any way!

Play on!

Powered by Google Forms

Appendix F – Teacher Participant Interview Guide

Exploring Social Media and Student Engagement in Physical Education: The #active365 Program

#active365 Program Follow-up One-on-One Teacher Interview Guide

Research Question

How can physical education teachers motivate students to be physically active as part of a healthy, active lifestyle using wireless mobile devices and social media? To explore this research question, the two main objectives are:

- 1) to understand the benefits and barriers of student participation with wireless mobile devices and social media initiatives in PE settings;
- 2) to determine if wireless mobile devices and social media initiatives help motivate students to lead healthy, active lifestyles outside of class.

Purpose of Study

The purpose of the study is to investigate how PE teachers might help motivate students to be active outside of class by encouraging use of wireless mobile technology (such as smartphones) and social media to demonstrate physical activity. The “#active365 program” is a program that will be used to investigate the purpose of this study by providing an opportunity for students to take photos of themselves being active for marks. This program has the potential to encourage students to be physically active by using their technological devices and can demonstrate to the teacher an understanding of what it means to be active as part of a healthy lifestyle outside of class.

Interview Probes

- Tell me more
- Can you be more specific
- Give me an example
- To confirm that I understand this correctly
- Do you have any other thoughts regarding this question
- You’ve mentioned in your teacher preliminary questionnaire/field notes that....
- I’m not clear, can you tell me another way
- What are your thoughts on

Interview Questions

Please describe your experience with the #active365 program in your class.

- a. What grade level and class or classes did you have participate with you in the #active365 program?
- b. How many posts did you receive in total?

- c. From the #active365 posts that you received from students, what sort of physical activity was demonstrated? For example, walking or playing hockey.
- d. Did you find that students would generally post themselves doing the same physical activity over and over again, or would the activities that they posted vary?
- e. What social media or other Internet website or application did you receive posts from?
- f. Which social media or other Internet website or application did you receive the most number of posts through?
- g. What were the different ways that students sent posts? Did they publically display them or privately message them to you?
- h. Did students post as individuals, or in groups?
- i. Did you create any groups within social media or other Internet websites or application accounts to engage your students collectively?
- j. For the students who did participate in the #active365 program, did they submit posts often or not often at all?
- k. Did some students participate more than others?
- l. Approximately how many posts did you receive per week or per month?
- m. Did you notice any trends in program participation? For example, male versus female involvement, time of semester, time of day, or season you received the most submissions?
- n. How do you perceive the student attitude towards your #active365 program?
Were they eager to participate or was it a struggle to get them to participate?
- o. Did you receive any posts by email or another method outside of social media?
- p. Did any students indicate that they would have participated if another social media site or Internet website or application were made available? If so, which one(s)?
- q. Did students receive any incentive (such as improved grades) for their participation in the #active365 program? Please explain.
- r. Did any students opt to receive the same improved grade in another method, outside of #active365 program participation?
- s. Did any students indicate that they did not want to or could not participate in the #active365 program? If so, what reasons were given?

- t. Did any students indicate that they could not participate in the program due to extracurricular obligations? For example, a job or fine arts practices.
- u. Did you perceive students who participated in the #active365 program to have access to their own WMD?
- v. Approximately how many of your students do you believe own their own smartphone?

How many students:

- a. ...were in your class by the end of the semester?
- b. ...were boys?
- c. ...were girls?
- d. ...participated in the #active365 program study?

What were the impressions you received from staff and parents regarding the #active365 program?

- a. Did you have any conversation with parents? If so, about what specifically?
- b. Did you have any conversation with staff? If so, about what specifically?

What benefits, if any, have come from the #active365 program?

- a. Have you, the teacher, benefited either personally or professionally? If so, how?
- b. Have the students benefited from program participation? If so, how?

What challenges, if any, were present for either you or your students during the #active365 program participation?

- a. Did you experience any challenges with administration? Explain.
- b. Did you experience any challenges with parents? Explain.
- c. Did you experience any challenges with students? Explain.

Did you, the teacher, participate in the #active365 program? If so, how did you communicate your participation to students?

- a. Did you post on social media? If so, what sites did you use?
- b. Did students recognize your participation by referring to your posts in class?

What are your overall impressions of the #active365 program?

- a. Would you do this program again with a different class in the future?
- b. If you were to do this again in the future, what changes would you make?

What advice would you give to other PE teachers trying to engage students actively in the use of wireless mobile devices or social media?

What final comments would you like to make? What questions should I have asked but didn't?

Appendix G – Recruitment Letter for Teachers



Lisa Taylor
Master of Physical Education Student
School of Human Kinetics and Recreation
Memorial University of Newfoundland
403-797-1790
lmp620@mun.ca

Hello!

My name is Lisa Taylor, and I am a student in the School of Human Kinetics and Recreation at Memorial University of Newfoundland. I am conducting a research project called “Exploring Social Media and Student Engagement in Physical Education: The #active365 Program” for my master’s degree under the supervision of Drs. Erin Cameron and Linda Rohr. The purpose of the study is to investigate how PE teachers might engage students to be active outside of class by encouraging use of wireless mobile technology (such as smartphones) and social media to demonstrate physical activity.

I am contacting you to invite you to participate in a fun and exciting opportunity with your class in this research! You will be running “The #active365 Program” with your class, encouraging students to demonstrate their physical activity habits outside of class through social media photo submissions and assigning grades for work that demonstrates an active lifestyle, as per the Alberta PE curriculum (outcomes D10-1, D20-1, and D30-1.) Participation will require you to engage your class throughout one semester and will include a preliminary questionnaire, note taking throughout the semester regarding the program, as well as a post-trial phone or Facetime interview. All correspondence will be done remotely via email or phone! Total approximate time commitment: 2 hours for start-up, 15-20 minutes per week in brief note taking and mark assignment, and 2-3 hours to wrap-up.

The only criteria is that you teach at least one junior high or high school PE class and share a genuine interest in engaging your students to be active through the mobile technology (such as smartphones) and social media that students just seem to love so much!

If you are interested in participating in this study, please reply to this email **as soon as possible** and we will get started! This study is geared to start at the beginning of this upcoming semester, as early as September 5, 2017, and will end as of January 10, 2018.

If you have any questions regarding myself or my study, please contact me by email at lmp620@mun.ca, or by phone at 403-797-1790.

Thank you in advance for considering my request!

Sincerely,

Lisa Taylor

Appendix H – Student/Parent Informational Letter

Mrs. Lisa Taylor
Master of Physical Education Student
School of Human Kinetics and Recreation
Memorial University of Newfoundland
403-797-1790
lmp620@mun.ca

Date

Dear student and parent/guardian,

My name is Lisa Taylor and I am a Masters of Physical Education student at Memorial University. I am currently in my second year of the program working to complete my thesis. I am also a physical education (PE) teacher in Alberta and have been teaching high school PE for four years.

Through the leadership of your teacher, (Mr/Ms/Mrs Name of Teacher), your class has been given the opportunity to participate in my thesis research. As a student of this class, you are invited to take part in this research project entitled “Exploring Social Media and Student Engagement in Physical Education: The #active365 Program.” The purpose of this study is to learn more about your preference in using wireless mobile devices (such as smartphones) as well as social media sites (such as Instagram and Snapchat) to demonstrate physical activity through PE. In the #active365 program, you will have the opportunity to show your teacher how you are being active outside of class time using social media sites. You are welcome to participate in this program with your teacher without participating in the study, however if you choose to participate in the study, your data will be collected and you will be entered into a \$200 gift card draw prize for your work throughout the semester.

In order to participate in this study, both you and your parent/guardian will need to read carefully, fill out, sign, and submit the Informed Consent Form attached to this email. You may sign the consent form electronically and email it directly to me, or you may print it off and submit to the main office to be collected. Please do not submit it to (name of teacher) as he/she will not be made aware of which students will be participating in the study. Once the consent form is signed and submitted, send in your first #active365 submission to your teacher so you can start earning entries towards the draw prize! The more you post, the more entries you will earn towards the draw prize! Any personal information such as your name or profile username online will be given an alias in the final presentation of this study. Your photo submissions will only be used in publication of the study if you and your parent/guardian give me explicit permission to do so (see the “Your Signature” section of the consent form.)

As a voluntary participant in this study, you have the right to withdraw at any time. If you choose to do so, please let me know by sending me an email and I will ensure any data collected up to and after that point is not used in data analysis.

Thank you very much for your time and for your consideration to be part of this study!

Sincerely,

Lisa Taylor
Principal Investigator

Appendix I – Teacher Participant Letter for Transcribed Interview



Mrs. Lisa Taylor
Master of Physical Education Student
School of Human Kinetics and Recreation
Memorial University of Newfoundland
403-797-1790
lmp620@mun.ca

Month Day, Year

[Address]

RE: Exploring Social Media and Student Engagement in Physical Education: The
#active365 Program

Dear [name]:

I can't thank you enough for your willingness to take on the #active365 program. Your opinions and ideas during your recent interview enabled me to deeply think about how social media and wireless mobile devices can be used within a health and physical education setting. I would like to express my sincere thanks to you for your significant contribution to my study. I am very appreciative of the time you made available to me in your busy schedule.

Your interview has been transcribed (typed out) and is attached here for your review. This is an opportunity for you to comment on the accuracy of the transcription, as well as make changes, corrections, and/or clarifications. Once you have a look, I would like you to reply via e-mail confirming the accuracy of the transcript please.

If you have any questions or concerns in the meantime, regarding the study or the research process, please do not hesitate to contact me.

Thank you very much.

Sincerely,

Lisa Taylor
Principal Investigator

Appendix J - Teacher Participant Letter for Data Themes



Mrs. Lisa Taylor
Master of Physical Education Student
School of Human Kinetics and Recreation
Memorial University of Newfoundland
403-797-1790
lmp620@mun.ca

Month Day, Year

[Address]

RE: Exploring Social Media and Student Engagement in Physical Education: The
#active365 Program

Dear [name]:

I would like to take this opportunity to once again to thank you for taking part in this study. Your time and commitment have made a significant contribution to the study.

Your insightful thoughts enabled me to learn more about how to incorporate wireless mobile devices and social media within a physical education setting. Included along with this letter is a summary of my findings. The (number) main themes that emerged from the data analysis include (1) theme1, (2) theme2, and (3) theme3.

If you would like to comment on the accuracy of the summary of my results, please add your comments to the document and reply via e-mail. If you have any other questions or comments, do not hesitate to contact me, as I am in the process of writing up all the results for my thesis.

Thank you very much.

Sincerely,

Lisa Taylor
Principal Investigator