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IMPLEMENTING DIGITAL MEDIA AS A PEDAGOGICAL
TOOL IN UNIVERSITY PHYSICAL ACTIVITY COURSES

A Dissertation Submitted in Partial Fulfillment
of the Requirements for the Degree of
Doctor of Philosophy

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College of Natural and Health Sciences
School of Sport and Exercise Science
Sport Pedagogy

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ABSTRACT

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Technological advancements have influenced the way we teach, learn, and communicate in education. Higher educational institutions must continually adapt to emerging technologies by implementing a variety of technologies such as photographs, audio, video, and an endless array of online platforms. Specifically, university physical activity programs, which have existed in higher educational institutions for over a century, are encouraged to incorporate digital media as a means to effectively and efficiently communicate a variety of content areas (Cardinal, 2017; Casey, Goodyear, & Armour, 2017; Tiernan, 2015). The purpose of this case study was to explore the implementation of digital media as a pedagogical tool within physical activity courses (PACs). Eight participants shared their lived experiences as instructors of record for PACs throughout the fall 2019 semester. Results showed the need for digital resources both for the instructor as well as students, the value of digital media as a social connection tool, and the need to use Canvas, video, and audio as pedagogical tools. Professional development opportunities are necessary for PAC instructors to effectively and efficiently implement digital media as a pedagogical tool.

DEDICATION

This dissertation is dedicated to you. Thank you for your curiosity.

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CHAPTER I

INTRODUCTION

Technological advancements such as digital media have influenced teaching, learning, and communication in education. Digital media is the interactivity between senders and receivers in an exchange of information (Koc & Barut, 2016). Through the use of photographs, video, audio, online-based applications, and technological equipment (e.g., wearable devices), digital media in education provides an often cheap, yet effective way of enhancing teaching and learning (Charles & Charles, 2016; Guse et al., 2012; Heo, 2009; Melton & Burdette, 2011; National Physical Activity Plan Alliance [NPAPA], 2016; Ungerer, 2016). Furthermore, the use of digital media is more relatable to younger generations who have been raised on digital technologies both recreationally and academically (Prensky, 2010). Also known as digital natives, students who have grown up with digital devices find value in digital media as a tool for learning in higher education (Prensky, 2010; Tiernan, 2015). Institutions, however, are continuously trying to address the overwhelming amount of digital media pedagogies available and struggle to find the balance of effective and efficient pedagogies in the 21st century (Casey, Goodyear, & Armour, 2017; Tiernan, 2015). College and university instructors also have varying attitudes, behaviors, and experiences toward digital media as a pedagogical tool (Keser, Yilmaz, & Yilmaz, 2015; Tiernan, 2015). Regardless, educational institutions should continually leverage digital media pedagogies to support contemporary learning

styles (Casey et al., 2017; Fink, 2003; National Association for Sport and Physical Education [NASPE], 2009; NPAPA, 2016; Prensky, 2010; Tiernan, 2015).

The NPAPA (2016) encouraged higher educational institutions to increase physical activity and physical literacy through a series of strategies and tactics. Among these strategies, university physical activity programs were encouraged to provide students with viable health-promoting opportunities. Originally developed for military preparation, university physical activity programs in the United States have evolved to focus on providing undergraduate students the opportunity to participate in health-related and leisure activities to promote their overall health and well-being (Cardinal, 2017; Evans, Hartman, & Anderson, 2013; Hensley, 2000). Addressing health-related risk factors such as obesity or heart disease are a relatively new focus in university physical activity programs as standards and curricular initiatives have only been formally addressed within the past two decades (Cardinal, 2017; Cardinal & Kim, 2017; Charles & Charles, 2016; Hensley, 2000; NASPE, 2009; NPAPA, 2016; Stapleton, Taliaferro, & Bulger, 2017).

The Society of Health and Physical Educators (SHAPE America; NASPE, 2009) is the only formal organization with standards and guidelines for university physical activity programming. The *Appropriate Instructional Practice Guidelines for Higher Education Physical Activity Programs* (NASPE, 2009) provided open-ended recommendations for several topics such as but not limited to administration, instructional strategies, and curriculum development. Within both the NPAPA's (2016) national physical activity plan and the NASPE's (2009) instructional guidelines, technology was recognized as an important factor to effective teaching and learning

within university physical activity programs and courses. However, both documents (NASPE, 2009; NPAPA, 2016) were limited in providing specific strategies for university physical activity courses (PACs). Furthermore, the instructional guidelines are now a decade old, leaving many technologies unmentioned. Technologies such as learning management systems (e.g., Canvas, Blackboard) and mobile devices (e.g., cellphones, iPads) have drastically changed since 2009 and an increasing number of hybrid and online courses have expanded pedagogical opportunities for physical activity programming (Goldstein, Forman, Butryn, & Herbert, 2017; Stapleton et al., 2017). At the time of this dissertation, SHAPE America (NASPE, 2009) is currently undergoing a second revision to the instructional guidelines, which hopefully places a greater emphasis on digital media's role in PACs.

Physical activity courses have increasingly experimented with implementing digital media as a pedagogical tool (Brock, Russell, Cosgrove, & Richards, 2018; Melton, Moore, & Hoffman, 2016). According to relevant literature, implementing digital media into physical activity courses could positively impact student engagement (Bodsworth & Goodyear, 2017; Casey et al., 2017), support student skill development (Charles & Charles, 2016), provide off-campus and online-based physical activity opportunities (Brock et al., 2018; Goldstein et al., 2017), and implement mobile applications to assess learning (Melton, Bland, Harris, Kelly, & Chandler, 2015; Melton et al., 2016).

Adopting online courses or learning how to use mobile apps have also aimed to address health-related risk factors (e.g., obesity) with content-specific courses for students (Beaudoin, Parker, Tiemersma, & Lewis, 2018; Brock et al., 2018; Goldstein et al., 2017; Melton et al., 2015; NASPE, 2009). Given technology's emerging role within PACs, the

implementation of digital media as a pedagogical tool largely remains unknown. Given that students will continually develop in a digitally dependent educational system, physical activity programs and course instructors should be prepared to teach in a digitally responsive environment (Cox, Krause, & Smith, 2019; International Society for Technology in Education [ISTE], 2017; Melton et al., 2016; NASPE, 2009; NPAPA, 2016; Stapleton et al., 2017).

Adopting digital media pedagogies can be challenging as ample time, practice, and experience are needed to effectively incorporate technology in the classroom, gym, or online (Bodsworth & Goodyear, 2017; Casey et al., 2017; Cox et al., 2019; Goldstein et al., 2017; Melton et al., 2016). Additionally, implementing digital media in the various types of PACs (e.g., sports, mind-body, lifetime and wellness) can be challenging due to the multitude of variables such as the course environment, the resources available, and any training (or lack thereof) an instructor has received (Cox et al., 2019; Melton & Burdette, 2011; Melton et al., 2016; Reeves et al., 2016; Stapleton et al., 2017). Many PAC instructors are also commonly inexperienced teachers that plan on making a career in or related to higher education (Cox et al., 2019; Langdon, Schlote, Melton, & Tessier, 2017; Reeves et al., 2016). Therefore, young professionals in education should be introduced to digital media pedagogies early in their career (Brock et al., 2018; Goldstein et al., 2017; Melton et al., 2016; Parker, Patton, & Tannehill, 2017; Stapleton et al., 2017).

Physical activity courses are often taught by inexperienced graduate teaching assistants (Brock et al., 2018; Cox et al., 2019; Melton et al., 2016; NASPE, 2009). It is important that graduate teaching assistants receive course-specific training as quality

instruction requires understanding the complex relationships among content, pedagogy, and technology (Casey et al., 2017; Cox et al., 2019; Langdon & Wittenberg, 2018; Mishra & Koehler, 2006; NASPE, 2009; Stapleton et al., 2017). Furthermore, it is important that graduate teaching assistants receive professional development opportunities and ongoing support aimed at enhancing effective digitally-focused pedagogies (Beaudoin et al., 2018; Cox et al., 2019; Guskey, 2016; Hughes, 2005; Melton et al., 2016; NASPE, 2009; Stapleton & Bulger, 2015). As previously mentioned, younger generations are increasingly more technologically literate compared to older generations who might oversee physical activity programs (Bodsworth & Goodyear, 2017; Cardinal, 2017; Cox et al., 2019). Therefore, physical activity programs and their respective administration should continue to explore ways to link innovative physical activity teaching, content, and learning outcomes with technology-rich pedagogies (Charles & Charles, 2016; Cox et al., 2019; Halverson, Blakesley, & Figueiredo-Brown, 2011; Mishra & Koehler, 2006; Shelton, 2017).

Statement of the Problem

Implementing digital media as a pedagogical tool in university PACs was limited in evidence-based literature due to the unique nature of post-secondary educational environments. In other words, there was no one-size-fits-all for digital media implementation as each institution held different values and resources within their physical activity programs (Charles & Charles, 2016; Cox et al., 2019; NASPE, 2009). Furthermore, literature lacked information about programs with no full-time physical activity program coordinator considered essential for quality PACs (Brock et al., 2018; Cox et al., 2019; Melton et al., 2016; NASPE, 2009).

The University of Northern Colorado (UNC) does not have a full-time physical activity program coordinator to oversee health-promoting practices for undergraduate students. Based on UNC's (2017) current institutional learning outcomes, however, students are expected to engage in healthy behaviors and demonstrate health promoting practices. Students are also expected to competently learn and incorporate interdisciplinary media tools (e.g., digital media) used on and off campus (UNC, 2017). The University of Northern Colorado's physical activity program, therefore, has the unique opportunity to meet multiple institutional learning outcomes by implementing digital media within PACs.

No studies have extensively examined the implementation of digital media in university PACs where, unfortunately, resources and staffing could be considerably limited compared to other programs with sufficient funding (Brock et al., 2018). Since UNC does not have a full-time coordinator to effectively address the institutional learning outcomes as well as the national recommendations (e.g., NASPE, 2009; NPAPA, 2016), it is unclear what or how to identify possible benefits and barriers physical activity instructors might experience when implementing digital media pedagogies.

Purpose

The purpose of this dissertation was to explore the lived experiences of PAC instructors' implementation of digital media as a pedagogical tool. Due to increasing advancements and potential technology-based pedagogies, this study aimed to understand the complexity of a collectively bounded case by (a) describing the contextual variables that impact the use of digital media within physical activity programs, (b) describing physical activity instructors' attitudes and beliefs toward digital media implementation,

and (c) describing the pedagogical practices of physical activity instructors' use of digital media. Understanding the lived experiences included the following three research questions as a navigational method to help explore and describe the lived experiences of PAC instructors' implementation of digital media (Smith, Flowers, & Larkin, 2012; Sparkes & Smith, 2013).

- Q1 What variables impact the use of digital media within physical activity courses?
- Q2 What are physical activity instructor attitudes and beliefs toward the implementation of digital media in physical activity courses?
- Q3 What are the pedagogical practices of digital media use by physical activity instructors?

Investigating and describing individual cases as well as the homogenous phenomenon of this case study aimed to develop a better understanding about digital media pedagogies for physical activity programming (Melton et al., 2016; Stake, 1995). University PACs should always be properly be planned, implemented, and routinely examined (Casey et al., 2017; Melton et al., 2016; NASPE, 2009; Stapleton et al., 2017). However, physical activity programs with limited resources and staff could face unknown challenges experienced by the instructors who teach PACs. This study was significant because it identified comprehensive and specific factors influencing technology-focused pedagogies within PACs.

Limitations

The first limitation of this study was the convenience sample, which was limited to one university. Due to the single-site sample, the results of this study were limited in generalization to other university physical activity programs (Sparkes & Smith, 2013). Respectively, the convenience sample was also a purposeful sample as the study aimed to

learn about a particular physical activity program without a full-time coordinator. Unlike other universities within the area, the convenience-purposeful sample of a single university specifically addressed a small and unique phenomenon that is not typically studied (Sparkes & Smith, 2013). To address the small sample size, a case study seemed most appropriate to provide in-depth descriptions and interpretations of digital media implementation while providing descriptive passages about each PAC and their respective instructors' attitudes, experiences, and environments (Creswell & Poth, 2018; Sparkes & Smith, 2013; Stake, 1995).

A second limitation of this study was the self-reported data from the participants. Self-reported data are subject to error, leading to inaccurate or lack of true data. Therefore, multiple data collection methods were used to establish triangulation that substantiated data via interviews, course observations, technology journals, and collected documents from the instructors (Denzin, 2012; Sparkes & Smith, 2013; Stake, 1995). Furthermore, triangulation of data sources included three interviews, two course observations, and three technology journals to further verify the accuracy of self-reported data. Lastly, final interpretations and transcripts were member-checked by each participant to establish trustworthiness.

A third limitation of this study was the researcher's perspective, bias, and influences. As an experienced videographer and physical educator, this researcher's bias toward digital media and sport pedagogy was best minimized by strictly focusing on the interactions within the data sets (e.g., interviews, observations, document collections, and technology journals). By minimizing personal pretenses and thoughts, this researcher continuously reflected and recorded his own related experiences, interpretations, and

meanings throughout the analysis procedures (Lahman, 2017; Schwandt, 2014; Smith et al., 2012; Sparkes & Smith, 2013). For example, transcription notes were made if the researcher's questions were leaning toward the bias of digital media implementations and additional notes were kept to ensure whether the data naturally emerged from the participant without my influence. It was also important to minimize any pedagogical bias between the participants and the researcher by documenting his background and preliminary assumptions before data collection (Yin, 2009), which began during the preliminary data collection phase. Additional comments and reflections helped separate the researcher's experiences by acknowledging bias throughout the data collection and analysis process (Creswell & Poth, 2018; Smith et al., 2012). The researcher also recognized the importance of critical self-reflective practices to diminish bias (Creswell & Poth, 2018; Lahman, 2017). Lahman (2017) stated that critical self-reflection requires the researcher to continuously acknowledge their own social background, assumptions, and positioning behavior. In summary, minimizing this researcher's bias included critical self-reflections that were recorded in a data collection and reflection log that included his social background, assumptions, and positioning behavior in relation to the participants.

Definitions of Terms

The following terms ensured a consistent understanding throughout the study:

Digital media. The interactivity of information through an electronic device (e.g., computer, phone, watch) that is able to communicate a multitude of media including but not limited to photographs, video and audio clips, animations, and wearable devices (pedometers).

Digital natives. Individuals who have grown up with digital technologies.

Graduate teaching assistant. Graduate student working toward obtaining a master's or Ph.D. who is contracted to teach a set number of classes that cover the cost of tuition and fees.

Kinesiology. The study of human movement including the pedagogy, philosophies, and overall education of sport and exercise science.

Learning management system. Software application used to administer, document, track, and archive information between teachers and learners.

Media. Exchange of information between a sender and receiver used in a variety of formats.

Pedagogical practices. Ways in which an instructor communicates intended outcomes or objectives toward student learning.

Physical activity course. A specific one-hour credit course related to physical activity offered to undergraduate students during a fall or spring semester.

Physical activity instructor. Instructor of record for physical activity course.

University physical activity program. A set of college or university physical activity-related courses offered to students for credit-based merit.

CHAPTER II

LITERATURE REVIEW

This chapter provides a comprehensive review of relevant literature examining the implementation of digital media in PACs in four sections: (a) digital media, (b) physical activity courses, (c) physical activity instructors, and (d) models and frameworks.

Digital Media

Digital media is a set of technological formats that can either be produced and/or consumed (Koc & Barut, 2016). Using digital media generally incorporates photographs, videos, audio clips, animations, and learning management systems (LMS) to be utilized via mobile devices, tablets, or computers (Heo, 2009; Melton & Burdette, 2011; Ungerer, 2016; Yousef, Chatti, & Schroeder, 2014). Digital media has been shown to promote stronger student engagement (Reynolds, 2016). These technologies are encouraged to be used in educational settings by ISTE (2017), which remains the standard in technology-based teaching and learning best practices in the United States (Baek, Keath, & Elliott, 2018). Pedagogical practices include working with others through digital mediums, designing learner-centered environments to solve problems, and contributing to the use of technology in a responsible manner (ISTE, 2017). As generations grow up with digital media in both leisure and academic environments, competency skills and educational standards are increasingly impacting how teachers teach and students learn (Casey et al., 2017; Prensky, 2010; Tiernan, 2015). Students are also expected to implement digital media into their learning experience through critical thinking and the use of

contemporary technologies. Therefore, it is important to recognize that both students and teachers will continuously be 'digital natives' (Bodsworth & Goodyear, 2017; Kretschmann, 2015; Prensky, 2010). However, more could be understood about digital media as a pedagogical tool used between students and educators in physical activity settings (Bodsworth & Goodyear, 2017; Casey et al., 2017; Stapleton et al., 2017).

Digital Media Formats

As previously mentioned, digital media can be implemented in a combination of formats with a variety of uses. The following paragraphs include major digital media formats that were found in relevant literature and could be applied to PACs. Formats included but were not limited to (a) the use of video; (b) audio; (c) learning management system usage, as well as (d) social media, augmented reality, and virtual worlds.

Video could be beneficial in an array of kinesiology related courses. For instance, Lim, Pellett, and Pellett (2009) described multiple ways in which sports management and physical education courses could utilize video in their courses. Some examples included documentaries, commercials, and sport analysis videos. Lim and colleagues also provided four components to the assessment process based on preproduction, production, post-production, and overall presentation. Although dated, the article provided a step-by-step process to reach an interdisciplinary learning outcome between digital media literacy and kinesiology.

Audio has also been used to record courses for students to listen to (Gross, Wright, & Anderson, 2017) and could be used to verbally share and create information. Producing a podcast, for instance, could be used as a summative assessment and provide archival student learning outcomes (Sweeney et al., 2017). Audio could also be within

videos, which might require a planned script with intended content and outcomes (Weir & Connor, 2009).

The use of LMS could be a repository for video, audio, photographs, and text information used to communicate between teachers and students. Learning management systems are consistently encouraged to be utilized by educators and students, which could incorporate other digital media formats as accessibility remains increasingly popular and ever evolving with personal devices (Cochrane, Antonczak, Keegan, & Narayan, 2014; Melton et al., 2016; Reynolds, 2016; Stapleton et al., 2017; Sweeney et al., 2017).

Physical activity courses have increasingly taken advantage of LMSs by incorporating online and hybrid courses for students (Goldstein et al., 2017; Stapleton et al., 2017).

Therefore, it was important to develop proficiency via training that could be completed either online or in-person (Brock et al., 2018).

Other digital media included social media, augmented reality, and virtual worlds such as chatrooms or video games (Guse et al., 2012; Sweeney et al., 2017). Social media has increasingly been incorporated with open-forum communication platforms in education. Social media outlets such as Twitter, Pinterest, and physical activity tracking apps are recommended to enhance students' learning and furthering efforts toward healthy lifestyles by supporting social dialog (Cox et al., 2019; Franks & Krause, 2017; Weatherford & Burt, 2018). Weatherford and Burt (2018) specifically recognized the unique progression of learning through social media and technology through gamification, blogging, or a combination of both. Gamification includes students applying game-like mechanics such as digital badges, points, or leaderboards to non-game activities (Anderson & Rainie, 2012). Microblogging includes coverage of an

event of activity by encouraging social engagement through digitally recorded reflections (Reynolds, 2016; Weatherford & Burt, 2018). As social media continues to develop in educational settings, students and educators will continue to participate in digital media platforms for effective teaching and learning (Cochrane et al., 2014).

The described digital media formats provide the foundational continuum of pedagogical practices that could be adopted within a physical activity and higher educational setting. Charles and Charles (2016) recognized that kinesiology departments had great potential in adopting technologies to enhance the learning experience. However, it is important to recognize that implementing digital media is not a one-size-fits-all adoption plan, particularly among students (Loizzo, Ertmer, Watson, & Watson, 2017). Although this dissertation focused more on the pedagogical practices, it was essential to highlight student learning aspects and foundations regarding digital media. Therefore, the remaining sections discuss digital media's involvement in student learning and pedagogical practices.

Student Learning

Considered to be digital natives, younger generations are immersed in a digitally-bound educational environment (Bodsworth & Goodyear, 2017; Prensky, 2010). Using devices such as iPads or mobile phones and their respective apps, digital natives are highly accustomed to learning from digital devices (Bodsworth & Goodyear, 2017; Gourlay, Hamilton, & Lea, 2014; Weatherford & Burt, 2018). Digital resources such as educational websites, tutorial videos, and mobile apps provide students the opportunity to learn by constructing personal inquiries with social experiences (O'Loughlin, Chróinín, & O'Grady, 2013; Papert, 1980; Reynolds, 2016). For example, O'Loughlin et al. (2013)

demonstrated student learning and social engagement through video-based feedback and peer assessments in basketball. Students as young as nine-years-old demonstrated enhanced communication and performance basketball skills by using video to provide feedback and reflect on their own performance. O'Loughlin and colleagues are just one example of a 'learning by doing' approach (Metzler, 2011; Papert, 1980; von Stackelberg & Jones, 2014). A learning by doing approach could include students actively researching information, communicating through discussions amongst peers and stakeholders, and most importantly, the use of whatever sort of digital media that is implemented (Ng, 2015). However, creating environments that promote critical thinking and effective learning depends on the instructor and their administrative practices.

Pedagogical Practices

Applying digital media technologies in an educational environment is becoming more affordable for colleges and universities (Stapleton et al., 2017). With teachers integrating a variety of multimedia (e.g., videos, podcasts), mobile apps, or the use of LMS, digital media is considered an essential practice among university PACs (Lim et al., 2009; Melton et al., 2015, 2016; NASPE, 2009). However, there is still limited research within university physical activity programs and their use of technology and digital media (Lim et al., 2009; Melton & Burdette, 2011; Stapleton et al., 2017).

Institutions that utilize an LMS in courses allow both the instructor and the students to cross reference work and promote improved teaching and learning experiences that might not have been communicated otherwise (Melton et al., 2016; Reynolds, 2016; Stapleton et al., 2017). For example, rather than an instructor canceling a soccer class due to inclement weather, the instructor could assign a video for students to watch for next class.

The video could be hyperlinked to an LMS announcement and be assigned participation points if desired. The possibilities to incorporate an LMS as a backup resource or a primary resource give instructors and students open possibilities to utilize digital media technologies (Campbell & Cox, 2018). Pedagogical practices will only continue to grow as digital natives embrace digital media (Prensky, 2010; Tiernan, 2015).

As early as kindergarten, implementing digital media as a pedagogical tool has been used to assist teaching and enhance learning experience (Ottenbreit-Leftwich, Glazewski, Newby, & Ertmer, 2010). The idea of implementing digital media as a pedagogical practice supports the shift from teacher-centered learning to student-centered learning and has been noted as best practices to improve student performance as well as cognitive skills in a course (ISTE, 2017; Kretschmann, 2015; NASPE, 2009; O'Loughlin et al., 2013; Ottenbreit-Leftwich & Brush, 2018; Stapleton et al., 2017). Technology is an encouraging component for student-centered learning within kinesiology and health-oriented education (Casey et al., 2017; Koekoek, van der Mars, van der Kamp, Walinga, & van Hilvoorde, 2018; Ottenbreit-Leftwich et al., 2010; Stapleton et al., 2017; Wang, Myers, & Yanes, 2010). Furthermore, discussions about digital media in kinesiology are growing in both empirical and practical literature. The following paragraphs describe relevant literature about digital media in kinesiology.

Kinesiology—the study of human movement, health, and exercise—is continuously developing and restructuring pedagogical practices to address digital natives and student-centered learning (Beaudoin et al., 2018; Casey et al., 2017; Charles & Charles, 2016; Kretschmann, 2017; Stapleton et al., 2017). Existing literature showed an increase in additional digital media formats in a variety of kinesiology fields (e.g.,

physical education teacher education, athletic training, physiology, biomechanics, etc.). For example, physical educators (K-12) have used exergaming to include video games as a form of physical activity (Staiano & Calvert, 2011), athletic training has addressed digital literacy based on curriculum development and digital assessments (Kawaguchi, 2009; Nelson, Courier, & Joseph, 2011), physiology courses have utilized smartphones to apply heartrate tests (Lellis-Santos & Halpin, 2018), and biomechanics courses have incorporated constructive modeling to follow human movement behavior through video (Knudson, 2007). Lastly, PAC instructors could benefit from various digital media formats to enhance the student learning experience (Al-Haliq, Oudat, & Al-Taieb, 2013; Goldstein et al., 2017; Lim et al., 2009; Melton et al., 2015). Digital media implementation also continues to be examined and discussed within university PACs (Goldstein et al., 2017; Lim et al., 2009; Melton et al., 2015), K-12 physical education (Bodsworth & Goodyear, 2017; O'Loughlin et al., 2013; Weir & Connor, 2009) and physical education teacher education (Krause & Lynch, 2018; Kretschmann, 2015; McCuaig & Enright, 2016).

Recent research explored the use of online and mobile apps within PACs (Goldstein et al., 2017; Melton et al., 2015). For example, Melton et al. (2015) evaluated the effectiveness of using an exercise app to increase student motivation, social support, self-efficacy, and enjoyment in PACs. Quantitatively, the study found a significant difference between the intervention and control group, resulting in app-based PAC with higher self-efficacy and family support. Qualitatively, students found the app useful for exercise archiving (i.e., saving workouts or tracking workouts), gamification (i.e., point system or rewards), and healthy competition (i.e. point competition) but found the app to

be hard to track multiple exercises. Additionally, Melton et al. reported the variability between the two physical activity instructors' teaching styles could impact student outcomes differently, further suggesting the need to examine instructors' pedagogical practices with digital media.

Research in K-12 physical education has examined digital media implementation as early as primary school (Bodsworth & Goodyear, 2017; O'Loughlin et al., 2013; Palao, Hastie, Cruz, & Ortega., 2015). As previously stated, O'Loughlin et al. (2013) implemented video as a feedback and assessment tool for 9- and 10-year-olds. The study provided students the chance to self-assess via video their performance on basketball skills (e.g., lay-up or free throw). Qualitative findings showed students valued the learning process and gave students control of their own performance and feedback. However, limitations showed the need for instructors to address objective-based rubrics, student learning styles, and time constraints.

In conclusion, growing research in digital media in kinesiology showed promising avenues for pedagogical practices. However, specific pedagogical practices implementing digital media formats have not been seen in university physical activity programs. In fact, ways in which PACs implement digital media remain virtually unknown and open for more research (Charles & Charles, 2016; Melton et al., 2016). The following section examines current literature on physical activity programs and courses. Due to the limited knowledge on digital media in PACs, additional literature regarding K-12 physical education and digital media was incorporated as needed.

Physical Activity Courses

The goal of a university physical activity program is to promote physically active lifestyles in a variety of ways (Cardinal, 2017; NASPE, 2009). Less than a century ago, PACs consisted of mandatory military readiness for young individuals (Cardinal, 2017). Since the turn of the century, PACs have taken a less rigorous role in higher education, providing leisure activities that promote obesity prevention, long-term fitness and wellness, and opportunities to learn skills students might not learn otherwise (Cardinal, 2017; Cardinal & Kim, 2017; Evans et al., 2013). Unlike other academic courses that generally focus on cognitive understanding, students who choose to enroll in PACs are expected to learn via psychomotor, cognitive, or affective domains (Charles & Charles, 2016; Fink, 2003; Melton et al., 2016; NASPE, 2009; Stapleton et al., 2017). However, as physical activity declines among post-secondary education students (Kim & Cardinal, 2019), PACs offer students an opportunity to learn about the importance of physical activity and a healthy lifestyle (Casebolt, Chiang, Melton, & Russell, 2017; Kim & Cardinal, 2019; Stapleton & Bulger, 2015). Physical activity courses have been shown to contribute to positive behavioral and attitude changes as well as academic success among student populations (Annesi, Porter, Hill, & Goldfine, 2017; Cardinal & Kim, 2017; Evans et al., 2013; Goldstein et al., 2017).

Students enrolled in PACs can choose a variety of options such as dance (e.g., ballet or jazz), fitness (e.g., conditioning or running), lifetime sports (e.g., badminton or golf), mind-body activities (e.g., yoga or tai-chi), outdoor activities (e.g., hiking or rock climbing), and team sports (e.g., soccer or basketball) while earning course credit (Cardinal & Kim, 2017). Brock et al. (2018) expressed how one university annually

offered 470 PACs. Despite the steady decline in physical activity programs (Charles & Charles, 2016), quality programming and PAC evaluation is necessary and should be further evaluated (Cox et al., 2019; Stapleton et al., 2017). If institutions wish to continue to provide students a variety of educational environments that promote healthy lifestyles, quality examinations of physical activity programs and their respective curricula should be further examined (Cox et al., 2019). As Hensley (2000) accurately predicted regarding PAC trends, students enroll in courses that aim to improve their fitness for a lifetime (Cardinal & Kim, 2017). However, Hensley also warned that programs not changing PAC curricula to meet trends could face potential elimination.

Unlike intramural sports or recreation centers, PACs provide students course credit, which could affect their grade point average. Physical activity courses' unique role also varies from institution to institution. For example, one college or university might require students to complete one or two PACs in order to graduate (Cardinal & Kim, 2017; Stapleton et al., 2017). Cardinal and Kim (2017) found differences in reasons why students enrolled in PACs based on gender. Results showed female students enrolled in PACs to improve fitness while males aimed to have fun. Leenders, Sherman, and Ward (2003) found similar results and suggested students enrolled in PACs to improve their fitness levels, exercise regularly, learn a new activity, have fun, and reduce stress. Moreover, Kim and Cardinal (2019) studied PAC enrollment between universities where enrollment requirements differed. Results showed that students who were required to enroll in PACs showed greater amotivation (lack of motivation), suggesting students who might not have enrolled in a course the opportunity to be physically active. These variations are becoming a growing trend in research in order to delineate the multitude of

differences of PACs (Barney, Pleban, Wilkinson, & Prusak, 2015; Cardinal, 2017; Charles & Charles, 2016; Hensley, 2000; Stapleton et al., 2017). The following section provides the most standard protocol found in PAC literature.

Standards and Expectations

Although a decade old, the *Appropriate Instructional Guidelines for Higher Education Physical Activity Programs* (NASPE, 2009) remains the most relevant instructional guideline for quality PACs (Annesi et al., 2017; Cardinal, 2017; Charles & Charles, 2016; Stapleton et al., 2017). The PAC instructional guidelines provide recommended best practices in the following areas:

1. Administration/support
2. Assessment
3. Instructional strategies
4. Professionalism
5. Learning environment
6. Program staffing
7. Curriculum.

Each guideline provides additional subsections with appropriate and inappropriate examples to follow as a guideline for ‘do’ and ‘do not’ pedagogical practices. Therefore, the following paragraphs provide greater detail about the seven guidelines, as well as appropriate and inappropriate practice examples. Each guideline also includes PAC and digital media literature.

Administration/support. Table 1 provides PAC instructional guidelines (NASPE, 2009) for administration/support: (a) daily support, (b) advocacy, (c) policies

and procedures, (d) instruction environment, (e) program alignment, (f) scheduling, (g) funding, (h) resources, (i) equipment, and (j) facilities. According to Stapleton and Bulger (2015), most institutions with a physical activity program adhere to administration/support guidelines. In their study, physical activity programs ($n = 42$, 59.2%) reported fully adhering to the administration and support section. However, more information about the administration subsections is still needed. Administration could also lack consistent data due to program and course changes (Charles & Charles, 2016; Hensley, 2000; Mak & Cheung, 2018). Therefore, administrative consistency and effectiveness is essential for successful physical activity programs (Brock et al., 2018; Cardinal, 2017; Melton & Burdette, 2011).

Melton and Burdette (2011) suggested administration would become easier if technology could effectively organize a physical activity program. For instance, a database could be made for all digital media used in PACs. The PACs would provide documentation on course alignment or an institution's mission on healthy lifestyles or media literacy (Gourlay et al., 2014; Heo, 2009). To my knowledge, no empirical research has examined administrative efforts in specifically implementing digital media.

Table 1

Administration/Support

Instructional Guidelines	Appropriate/Inappropriate Practices
Daily Support	<p><i>Appropriate:</i> Program has a full-time faculty member to oversee the program and each PAC instructor's responsibilities</p> <p><i>Inappropriate:</i> Program does not have a designated director or coordinator to oversee physical activity program</p>
Advocacy	<p><i>Appropriate:</i> Program supports the importance of PACs within the college/university and community stakeholders</p> <p><i>Inappropriate:</i> Program does not address the importance of physical activity within the community</p>
Policies and Procedures	<p><i>Appropriate:</i> Program aligns all PACs with the institution's guidelines</p> <p><i>Inappropriate:</i> Courses lack clear program alignment with credit-based policies</p>
Instruction Environment	<p><i>Appropriate:</i> Instructors are able to effectively teach in contribution to class-size and equipment availability</p> <p><i>Inappropriate:</i> Instructors are unable to individually provide individual feedback</p>
Program Alignment	<p><i>Appropriate:</i> Program is aligned with the university and all PACs are aligned with program</p> <p><i>Inappropriate:</i> Program does not recognize academic guidelines set by the department or university</p>
Scheduling	<p><i>Appropriate:</i> Department Ensures PACs are properly scheduled in appropriate areas within the college/university or off campus</p> <p><i>Inappropriate:</i> Department does not communicate a reserved space which conflicts with athletics</p>
Funding, Resources, Equipment, and Facilities	<p><i>Appropriate:</i> Department ensures financial support is allocated toward program and all PACs</p> <p><i>Inappropriate:</i> Program lacks equipment needed for effective teaching and student learning</p>

Source. NASPE (2009)

Assessment. Table 2 details the PAC instructional guidelines (NASPE, 2009) for assessment including (a) assessment use, (b) variety of assessments, (c) fitness testing, (d) assessment environment, (e) reporting student progress, (f) grading, and (g) program assessment. According to Stapleton and Bulger (2015), many institutions with a physical activity program adhered to assessment guidelines. In their study, physical activity programs ($n = 25$, 27.8%) reported fully adhering to the assessment section. However, Melton et al. (2016) noted physical activity instructors might not have experience with assessing students. Therefore, it was recommended that program administrators have a consistent protocol with all assessments for PACs, which could be done via training modules before the beginning of the semester (Brock et al., 2018).

It is recommended that students are formally and informally assessed throughout the PAC in order to have a gain a better understanding of content (Cardinal & Kim, 2017; Goldstein et al., 2017; Lim et al., 2009; NASPE, 2009; Stapleton et al., 2017). Lim et al. (2009) implemented a formal digital media assessment into PACs to enrich student learning experience. Lim and colleagues provided a video project evaluation rubric for PACs that included pre-production, production, and post-production phases. The objective measures on a video-based project was just one example of digital media implementation within PACs.

Table 2

Assessment

Instructional Guidelines	Appropriate/Inappropriate Practices
Assessment Use	<p><i>Appropriate:</i> Instructors implement both formative and summative assessments on students throughout the entirety of a semester</p> <p><i>Inappropriate:</i> Instructors randomly implement assessments at random and are not used for grading purposes</p>
Variety of Assessments	<p><i>Appropriate:</i> Instructors systematically and inclusively assess all domains of learning (i.e., psychomotor, cognitive, and affective)</p> <p><i>Inappropriate:</i> Instructors only assess students on motor skills</p>
Fitness Testing	<p><i>Appropriate:</i> Instructors provide a pre-post fitness test applicable to course</p> <p><i>Inappropriate:</i> Students are graded based on fitness test scores</p>
Assessment Environment	<p><i>Appropriate:</i> Instructors create a non-threatening environment and avoids comparing students</p> <p><i>Inappropriate:</i> Instructors give no explanation for assessments (e.g., no rubric) and grades are publicly posted</p>
Reporting Student Progress	<p><i>Appropriate:</i> Instructors are regularly reporting to students on progress</p> <p><i>Inappropriate:</i> Instructors do not provide feedback to students</p>
Grading	<p><i>Appropriate:</i> Instructors thoughtfully construct criteria and rubrics that students understand</p> <p><i>Inappropriate:</i> Instructors only use subjective measures are to assess students</p>
Program Assessment	<p><i>Appropriate:</i> Program assesses all instructors both individually and cumulatively</p> <p><i>Inappropriate:</i> Instructors are not consistent in achieving program quality</p>

Source. NASPE (2009)

Instructional strategies. Table 3 provides the PAC instructional guidelines (NASPE, 2009) for instructional strategies including (a) expectations for student learning, (b) class organization, (c) instruction design, (d) learning time, (e) maximum participation, (f) teaching/learning styles, (g) instructor enthusiasm, (h) student success, (i) instructor feedback, and (j) technology use. Meeteer, Housner, Bulger, Hawkins, and Wiegand (2011) suggested that adopting unique teaching styles (i.e., sport education model) in PACs could impact other instructional strategies such as assessment and feedback. Additional models such as teaching games for understanding have been suggested to incorporate into PACs (Stapleton et al., 2017). However, it was important to properly train PAC instructors in proper teaching methods and instructional design (Melton et al., 2016; Stapleton et al., 2017).

The use of digital media offers PACs the opportunity to implement pedometers, heart rate monitors, and any additional resources available within a department or institution (Melton & Burdette, 2011). Additionally, technology such as video, LMSs, and mobile apps could be incorporated with proper training and resources (Lim et al., 2009; Melton et al., 2015; Melton & Burdette, 2011). Although more information about digital media implementation was discussed in previous sections (i.e., Purpose and Digital Media sections), it was important to reiterate that empirical literature on the PAC instructional guidelines (NASPE, 2009) was limited for programs without fulltime coordinators.

Table 3

Instructional Strategies

Instructional Guidelines	Appropriate/Inappropriate Practices
Expectations for Student Learning	<i>Appropriate:</i> Instructors clearly communicate student learning outcomes and hold students accountable for meeting expectations <i>Inappropriate:</i> Students are only expected to be physically active with no expectations of outcomes
Class Organization	<i>Appropriate:</i> Instructors put students into pairs or groups for efficient teaching and learning <i>Inappropriate:</i> Students are team captains and marginalize teams based on abilities
Instruction Design	<i>Appropriate:</i> Instructors modify course based on student needs <i>Inappropriate:</i> Instructors do not follow an identifiable design in student learning outcomes
Learning Time	<i>Appropriate:</i> Instructors allocate enough time for student learning and skill development <i>Inappropriate:</i> Instructors do not give students enough chances to perform task before continuing to next lesson
Maximizing Participation	<i>Appropriate:</i> Students are able to learn or be physically active in a variety of activities related to course <i>Inappropriate:</i> Students take turns and individual activities and receive different amounts of active learning time
Teaching/Learning Styles	<i>Appropriate:</i> Instructors provide various forms of teaching styles that promote higher-order thinking <i>Inappropriate:</i> Instructor limits teaching style to minimally adapt to student learning styles
Instructor Enthusiasm	<i>Appropriate:</i> Instructors demonstrate positive role modeling to students and other instructors <i>Inappropriate:</i> Instructors appear to be disassociated with PACs and enrolled students
Student Success	<i>Appropriate:</i> Students achieve appropriate advancement in skills (e.g., physically or cognitively) <i>Inappropriate:</i> Instructor does not provide any source of student advancement
Instructor Feedback	<i>Appropriate:</i> Students receive corrective and reinforcing feedback <i>Inappropriate:</i> Students receive general feedback (e.g., “Good Job”)
Technology Use	<i>Appropriate:</i> Instructors utilize email, LMSs, video, as well as technology to improve class management <i>Inappropriate:</i> Technology is not used to communicate with students

Source. NASPE (2009)

Professionalism. Table 4 provides the PAC instructional guidelines (NASPE, 2009) for professionalism that include (a) presentation, (b) teaching, (c) professional growth, and (d) advocacy. According to Stapleton and Bulger (2015), many institutions with a physical activity program adhered to professionalism guidelines. In their study, physical activity programs ($n = 42$, 48.3%) reported fully adhering to the program section. However, Stapleton and Bulger suggested the word *professionalism* might have been misinterpreted and should be closer examined. For instance, professional growth might include services provided for physical activity instructors (e.g., campus workshops on teaching strategies). Professional growth is important for physical activity instructors as many instructors are new and have room for growth (Parker et al., 2017). Additionally, instructors in post-secondary education are more autonomous in their occupational socialization stage but they could feel isolated (Arnett, 2000; Knowles, 1977; Parker et al., 2017; Tracy, Taliaferro, & Kristjansson, 2017).

Teachers who have continued to implement digital media have shown professional growth in technical pedagogical competency (Weir & Connor, 2009). Literature suggested digital literacies such as technical pedagogical competency should align with institutional perspectives (Gourlay et al., 2014). Pedagogical practices could also be complementary to a physical activity instructor's professional growth by implementing digital media in other kinesiology courses. For instance, a biomechanics major who is an instructor of record of a PAC could learn how to incorporate video technology into a non-PAC environment (Knudson, 2007).

Table 4

Professionalism

Instructional Guidelines	Appropriate/Inappropriate Practices
Presentation	<i>Appropriate:</i> Instructors are on time, dress appropriately, and communicate in a professional manner <i>Inappropriate:</i> Instructors are unprepared for class and do not have a lesson plan
Teaching	<i>Appropriate:</i> Instructors demonstrate an understanding on content <i>Inappropriate:</i> Instructors do not provide physical demonstrations for students
Professional Growth	<i>Appropriate:</i> Instructors continually learn more about their PAC content or teaching practices <i>Inappropriate:</i> Instructors do not attempt to improve their teaching
Advocacy	<i>Appropriate:</i> Program is part of a larger culture (e.g., campus-wide support and events) <i>Inappropriate:</i> Program is not promoted throughout the campus

Source. NASPE (2009)

Learning environment. Table 5 provides the PAC instructional guidelines (NASPE, 2009) for learning environment that include (a) establishing the learning environment, (b) exercise as punishment, (c) safety, (d) diversity, (e) equity, (f) inclusion, and (g) educational value of competition. According to Stapleton and Bulger (2015), institutions reported a varied distribution of learning environment adherence ($n = 19$, 21.3%). Stapleton and Bulger suggested particular courses such as rock climbing could be well-managed despite the lack of effective teaching. The learning environment varied from PAC to PAC (Cardinal & Kim, 2017) but general guidelines should still be

comprehensive toward all courses. For example, safety is a critical component all instructors should ensure in themselves and students both physically and mentally (Melton et al., 2016). Additional environments instructors and administration should consider are office location and office hour times (Brock et al., 2018).

Digital media has interrupted the traditional PAC learning environment (e.g., in-person environment) by further displacing PAC locations and course types through online courses (Casey et al., 2017; Goldstein et al., 2017; Hensley, 2000). Physical activity course types such as an online conditioning course could be strictly done without interactions between students and teachers. Although recent literature addressed the learning environment for students (Goldstein et al., 2017; Melton & Burdette, 2011), more research is needed to address learning environments that address safety practices in being a responsible user of technology within PACs (ISTE, 2017). Brock et al. (2018) suggested remaining consistent in course content in order to maintain consistent learning environments for both instructors and students. Digital media should be included in similar consistency among PACs for online or in-person learning environments (Brock et al., 2018; Stapleton et al., 2017).

Table 5

Learning Environment

Instructional Guidelines	Appropriate/Inappropriate Practices
Establishing the Learning Environment	<p><i>Appropriate:</i> Instructors promote a positive learning environment and allows students to feel safe</p> <p><i>Inappropriate:</i> Instructors view only highly skilled students successful</p>
Exercise as Punishment	<p><i>Appropriate:</i> Instructors only use exercise as a contribution to a healthy lifestyle</p> <p><i>Inappropriate:</i> Instructors use exercise as a form of punishment (e.g., “Terrible. Take a lap.”)</p>
Safety	<p><i>Appropriate:</i> Instructors know where the nearest first-aid kit is located</p> <p><i>Inappropriate:</i> Instructors are not CPR certified</p>
Diversity	<p><i>Appropriate:</i> Instructors equally respect all students regardless of differences</p> <p><i>Inappropriate:</i> Instructors marginalize students based on differences</p>
Equity	<p><i>Appropriate:</i> Students can be challenged at their appropriate skill or cognitive level</p> <p><i>Inappropriate:</i> Instructors use unnecessary references when communicating (e.g., “Hey you guys.”)</p>
Inclusion	<p><i>Appropriate:</i> Instructors provide options for students with acute injuries</p> <p><i>Inappropriate:</i> Instructors do not provide alternative assignment for injured students</p>
Educational Value of Competition	<p><i>Appropriate:</i> Instructors provide a supportive competitive environment with deeper meaning</p> <p><i>Inappropriate:</i> Instructors focus strictly on winning as success</p>

Source. NASPE (2009)

Program staffing. Table 6 provides the PAC instructional guidelines (NASPE, 2009) for program staffing that include (a) full-time director/coordinator, (b) full-time instructors, (c) part-time instructors, (d) graduate teaching assistants, (e) athletic coaches, (f) professional development, and (g) instructor evaluation. Staffing varied by department including the administrative policies previously mentioned. Additionally, programs might not have full-time individuals teaching PACs and might solely rely on graduate teaching assistants. Professional development was an additional factor that impacted PAC instructors' pedagogical practices (Langdon et al., 2017). More information about professional development is discussed in another section of this dissertation.

In terms of digital media, factors such as instructor evaluation were not mentioned in PAC literature. For instance, as institutions rely more on virtual evaluations, there was no research on student feedback or evaluations on PACs. More could be learned about digital media implementation regarding program staffing as the difference between a physical activity program having a full-time coordinator or not having a full-time coordinator could create vast differences in the overall program (Brock et al., 2018; Melton et al., 2016; NASPE, 2009).

Table 6

Program Staffing

Instructional Guidelines	Appropriate/Inappropriate Practices
Full-Time Director/Coordinator	<i>Appropriate:</i> Full-time physical activity coordinator position specifically oversees the program <i>Inappropriate:</i> Program does not have any designated full-time physical activity coordinator to assess PACs and instructors
Full-Time Instructors	<i>Appropriate:</i> Program provides equal standards to other full-time instructors across their department <i>Inappropriate:</i> Department does not equate physical activity program
Part-Time Instructors	<i>Appropriate:</i> Instructors show a standardized level of competence in a particular PAC <i>Inappropriate:</i> Instructors do not have sufficient teaching experience or training
Graduate Teaching Assistants	<i>Appropriate:</i> Instructors are enrolled in a master's or doctoral degree program <i>Inappropriate:</i> Instructors do not have sufficient teaching experience or training
Athletics Coaches	<i>Appropriate:</i> Instructors teach in their area of expertise <i>Inappropriate:</i> Instructors yield unsafe instruction due to lack of exposure to content
Professional Development	<i>Appropriate:</i> Instructors participate in a professional development workshop or orientation related to PACs <i>Inappropriate:</i> Instructors are not supported throughout the semester by peers or administration
Instructor Evaluation	<i>Appropriate:</i> Students are able to evaluate the quality of the class or instructor by the end of the semester <i>Inappropriate:</i> Students are not able to evaluate a class at the end of the semester

Source. NASPE (2009)

Curriculum. Table 7 provides the PAC instructional guidelines (NASPE, 2009) for curriculum that include (a) course offerings, (b) substitutions, (c) students with disabling conditions, (d) course syllabi, (e) class size, (f) promoting lifelong activity, (g) using assessment data, (h) course content, and (i) exit outcomes. According to Stapleton and Bulger (2015), institutions reported a varied distribution of learning environment adherence ($n = 40$, 46.5%). Similar to variables previously mentioned, curriculum should address aspects such as inclusion (e.g., physical accessibility) and the promotion of physical literacy. Additionally, curriculum variables regarding digital media implementation are discussed in future sections including the methodology.

In terms of digital media, the PAC instructional guidelines (NASPE, 2009) provided an example of instructional strategies:

Appropriate Practice: Instructors include technology (e.g., e-mail, internet, video recording) to improve teaching effectiveness and class management and/or to quantify activity (e.g. pedometers and heart rate monitors). Inappropriate Practice: Instructors rarely or never use technology. (p. 16)

However, the examples only showed a dichotomic perspective of quality physical activity programming, leaving a large ambiguity between appropriate and inappropriate practices. Additionally, one must always recognize that technology is always evolving, leaving the PAC instructional guidelines (NASPE, 2009) document absent of technological advances such as tablets and cellphones (e.g. iPads and iPhones), learning management systems (e.g. Canvas or Blackboard), as well as apps. However, PAC trends in digital media remained vague in methodology literature (NASPE, 2009).

Table 7

Curriculum

Instructional Guidelines	Appropriate/Inappropriate Practices
Course Offerings	<i>Appropriate:</i> Program offers courses that coincide with current trends (e.g., yoga or online courses) <i>Inappropriate:</i> Program primarily offers team sports (e.g., only basketball and soccer)
Substitutions	<i>Appropriate:</i> Program has a protocol in case an instructor is unable to teach a course <i>Inappropriate:</i> Students may enroll in non-PACs for credit (e.g., intramurals)
Students with Disabling Conditions	<i>Appropriate:</i> Program intentionally accommodates student needs <i>Inappropriate:</i> Students with disabilities are not able to participate in activities
Course Syllabi	<i>Appropriate:</i> Syllabus is always available (e.g., when asked or online) <i>Inappropriate:</i> Syllabus is not consistent with intended content
Class Size	<i>Appropriate:</i> Program appropriately determines the optimal number of students allowed in a class <i>Inappropriate:</i> Classes are too large for quality instruction and optimal student learning
Promote Lifelong Activity	<i>Appropriate:</i> Instructors encourage students to be physically active outside of class <i>Inappropriate:</i> Instructors make no effort to support lifelong healthy choices
Using Assessment Data	<i>Appropriate:</i> Students learn how to interpret their own data (e.g., fitness assessment goals) <i>Inappropriate:</i> Instructors do not use student data
Course Content	<i>Appropriate:</i> Courses address all learning domains (i.e., psychomotor, cognitive, affective) for student improvement <i>Inappropriate:</i> Courses do not include consistent social opportunities
Exit Outcomes	<i>Appropriate:</i> Instructors generate data addressing student learning outcomes posted on the syllabus <i>Inappropriate:</i> Instructors collect data different from information found on syllabus

Source. NASPE (2009)

In conclusion, the standards and expectations mentioned within the PAC instructional guidelines (NASPE, 2009) provided a broad overlook into quality physical activity programming through appropriate and inappropriate practices. Digital media was described in detail among seven components of PACs: (a) administration/support, (b) assessment, (c) instructional strategies, (d) professionalism, (e) learning environment, (f) program staffing, and (g) curriculum. However, the PAC instructional guidelines provided limited description of digital media, which was only briefly described in instructional strategies. Therefore, the following section explores current trends in understanding digital media's role as a pedagogical tool in PACs. The following section also provides an in-depth description about PAC trends and future recommendations.

Physical Activity Course Trends

Over the last century, PACs have gradually decreased among college and university requirements (Cardinal, 2017). Downsizing and sometimes the elimination of university physical activity programs could have occurred due to the lack of university alignment or lack of effective accountability within departments, programs, and even courses (Cardinal, 2017; Charles & Charles, 2016; Stapleton et al., 2017). In response, research and practical suggestions have emerged within PAC literature to address the importance of quality programming, teaching, and outcomes (Beaudoin et al., 2018; Cardinal, 2017; Cardinal & Kim, 2017; Evans et al., 2013; Langdon & Wittenberg, 2018; Melton et al., 2016; NASPE, 2009; Wahl-Alexander & Curtner-Smith, 2018). Stapleton et al. (2017) suggested four ways to improve university physical activity programming to show greater accountability: (a) rebranding the program, (b) adopting theoretical frameworks, (c) changing modes of delivery for inclusion and innovation content, and (d)

developing learner-centered pedagogies. The following paragraphs describe the four suggestions by Stapleton et al. (2017) with greater detail and include additional PAC and digital media literature.

Rebranding the program. The idea of rebranding a university physical activity program suggests changes from the administrative level. Stapleton et al. (2017) suggested administration should focus on all aspects of their programs including but not limited to the planning, implementation, management, and evaluation of PACs. Beaudoin et al. (2018) implemented a rebranding approach that included changing the course prefix from PED to FIT to associate a ‘fitness’ approach for student interest. Additionally, Beaudoin et al. surveyed students on course interest, which introduced new classes such as scuba diving, training for a road race, and spinning (stationary bikes). Online PACs could also provide a rebranding effort to reach a wider range of student enrollment (Goldstein et al., 2017). Moreover, a policy-rebranding effort such as requiring PACs for all undergraduate students could enhance greater health-promoting activities (Cardinal, 2017; Cardinal & Kim, 2017; Stapleton et al., 2017).

Adopting theoretical frameworks. Stapleton et al. (2017) suggested the socioecological model as an interdisciplinary approach to maximize a public health framework within PACs. The model included incorporating both on-campus and off-campus stakeholders such as outdoor recreations or businesses (e.g., bowling alley or golf course) to provide greater PAC opportunities. The social aspect of the model could reflect the importance of a PAC as most courses would involve instructors, peers, and community members to interact and support each other. Similar social behavior theories such as social cognitive theory were used to examine the differences in online and in-

person PACs (Goldstein et al., 2017). Goldstein et al. (2017) found online PACs appealed to a different student population than in-person PACs. The study concluded that students who felt less comfortable being physically active tended to enroll in online courses. Additional teaching and learning models could be personalized for a specific PAC based on the instructor (Melton et al., 2016).

Changing modes of delivery. Changing the modes of delivery among PACs were suggested to include inclusive approaches (Stapleton et al., 2017). Adopting new and innovative pedagogical approaches was encouraged to engage different student populations (e.g., beginning and advanced students, students with disabilities, or distance learners). Stapleton et al. (2017) suggested teaching models such as the sport education model and teaching games for understanding to encourage an innovative and inclusive PAC culture. Evans et al. (2013) found the importance of leisure activities for student engagement enhanced quality of life. The study showed students enrolled in PAC leisure courses (i.e., dance, fitness, sports, and outdoor recreation) exhibited collaborative learning opportunities, enriched educational experiences, and a supportive environment. However, it is important that administration and instructors deliver meaningful and respectful content for students that requires training and course preparation (Brock et al., 2018).

Developing learner-centered pedagogies. Developing learner-centered pedagogies encourages the use of alternative course structures, evidence-based practices, and instructional technologies (Stapleton et al., 2017). Stapleton et al. (2017) suggested PACs adopt a flipped learning approach, which involves students completing assignments before class in order to free up teaching time. The flipped learning approach

is considered a constructivist approach that takes advantage of digital media as mobile phones and learning management systems provide a mobile/online learning experience (Dempsey & Van Eck, 2018; Goldstein et al., 2017; Stapleton et al., 2017; Wilson, 2018). In addition to learner-centered pedagogical practices, instructors who adopted autonomous and self-directed learning showed greater motivation toward physical activity (Tracy et al., 2017).

The four suggestions by Stapleton et al. (2017) provided a general understanding of successful trends among physical activity programming. Quality programming and successful trends should also be well documented for sustainability purposes (Cardinal, 2017; Casey et al., 2017; Charles & Charles, 2016; Dempsey & Van Eck, 2018; NASPE, 2009). More specifically, quality programming should be adopted by instructors who teach PACs as they are responsible for delivering quality content (Casey et al., 2017; NASPE, 2009). The following section explores the role of physical activity instructors as well as their role in implementing digital media into PACs.

Physical Activity Instructors

Physical activity instructors vary in pedagogical experience. From having no teaching experience (e.g., a recent college graduate) to having decades worth of teaching experience (e.g., a black belt martial arts), a single physical activity program could have a spectrum of philosophies, attitudes, and behaviors toward teaching, students, and digital media (Beaudoin et al., 2018; Brock et al., 2018; Cox et al., 2019; Melton & Burdette, 2011; Stapleton et al., 2017). Physical activity courses are generally taught by either part-time adjunct faculty or graduate teaching assistants (GTAs) who might specialize in a sport or activity (Melton et al., 2016). Langdon and Wittenberg (2018) mentioned

adjunct faculty and graduate teaching assistants could have varying teaching experiences, particularly within a single physical activity program. Furthermore, the supply and demand for instructors and courses could vary by institution. Therefore, it was important to recognize the variety in quality and consistency among physical activity programs since GTAs play a temporary role in programs and departments. Regardless, physical activity instructors should adhere to the instructional guidelines provided for PACs (Langdon & Wittenberg, 2018; Melton et al., 2016; NASPE, 2009).

The PAC instructional guidelines (NASPE, 2009) stated that GTAs enrolled in a graduate program (master's or doctoral) should be qualified to teach their respective PAC. The instructional guidelines also suggested instructors should be able to demonstrate content knowledge, pedagogical skills, and psychomotor skills within their PACs. However, GTAs might have the content knowledge but lack the pedagogical knowledge (Brock et al., 2018; Langdon & Wittenberg, 2018). Therefore, training is essential for any GTA or PAC instructor (Brock et al., 2018; Charles & Charles, 2016; NASPE, 2009; Stapleton et al., 2017). As Langdon and Wittenberg (2018) found, GTAs benefited from training that focused on teaching and learning styles such as providing student autonomy and student feedback. Early efforts toward training GTAs are an important factor for teaching and learning as the first few semesters or years teaching in higher education could be an impactful pedagogical experience to those who might continue a career in academia (Parker et al., 2017; Richards, McLoughlin, Ivy, & Gaudreault, 2017; Woods, Gentry, & Graber, 2017). The following sections highlight how teaching and learning was found within PACs.

Adult Teaching and Learning

Individuals in their late teens and well into their twenties are referred to as adult learners (Arnett, 2000). Arnett (2000) suggested the ages between 18 and 29 are a time where personal freedom and exploration are heightened, which offer greater chances to try new things. Within higher education, addressing the needs of adult learners requires specific strategies and tactics that differ from a K-12 education system (Knowles, 1977). Relevant literature stated that adult learners preferred to be autonomous and self-directed with limited guidance (Arnett, 2000; Knowles, 1977; Tracy et al., 2017). McKeachie and Svinicki (2013) promoted an active learning environment in higher education that through a variety of proper practices could promote autonomy and self-directed learning for adult learners. Physical activity instructors, particularly GTA physical activity instructors, are generally closer in age to undergraduate students (Beaudoin et al., 2018; Lusher, Campbell, & Carrell, 2018). The closeness in age suggests kinesiology GTAs have the potential to learn from teaching undergraduate students who are similar in age.

Adult learners have benefited from adopting digital media as a pedagogical tool within kinesiology (Campbell & Cox, 2018; Cox et al., 2019; Kelly, Taliaferro, & Krause, 2012). Kelly et al. (2012) found physical educators who were trained via web-based programming on assessing motor skills were significantly better at assessing a motor skill compared to physical educators who were not trained in web-based programming. Kelly et al. also suggested that implementing digital media training measures such as web-based programming was a promising approach to quality instruction. Therefore, greater consideration toward implementing digital media in PACs

should be discussed in terms of training and professional development opportunities (Ng, 2015; Stapleton et al., 2017).

Professional Development

If adult learners are expected to either teach or learn particular skills in PACs (e.g., basketball dribbling, passing, shooting) while promoting lifelong well-being behaviors (Charles & Charles, 2016; Longmuir & Tremblay, 2016; NASPE, 2009), university physical activity program administrations should ensure quality pedagogical practices are followed via sustainable training and support for PAC instructors (Beaudoin et al., 2018; Langdon et al., 2017; Melton et al., 2016; NASPE, 2009; Stapleton et al., 2017). Following the PAC instructional guidelines, university physical activity program administrations are responsible for providing professional development opportunities that could further support instructional strategies such as digital media use in the gym, classroom, or online (Cox et al., 2019; Melton et al., 2016; NASPE, 2009). Although this dissertation did not exclusively focus on professional development, providing professional development opportunities should be sponsored by administrations in enhancing quality PAC pedagogical practices (Charles & Charles, 2016; Guskey, 2016; NASPE, 2009; Saunders, Evans, & Joshi, 2005; Stapleton et al., 2017).

Instructors and Digital Media

The implementation of technology has great potential for innovation and creation within kinesiology courses (Charles & Charles, 2016; Cox et al., 2019). However, continuous updates, technological issues, or user issues (e.g., environment or weather) have developed a lack of trust or need to implement technology in higher education courses (Shelton, 2017). Furthermore, outdated equipment and resources are

continuously an issue in terms of adopting new pedagogical practices, making it hard to invest in sustainable higher education technologies (Krause & Lynch, 2018; Shelton, 2017).

The paradigm shift needed to incorporate effective technological pedagogies requires adequate training for instructors (Melton et al., 2016; Rogers, 2000). There is a learning curve to using technology as a pedagogical tool (Melton et al., 2016). Therefore, a dedicated amount of time is needed to practice new methods (Dempsey & Van Eck, 2018; Melton et al., 2016; Weir & Connor, 2009). Technology's role in higher education requires administrations to provide quality courses for their students (NASPE, 2009). Furthermore, pedagogical practices by instructors should be examined in terms of quality teaching and efficient and effective use of technology through conceptual frameworks. The following section describes conceptual frameworks to consider when exploring the implementation of digital media in university physical activity programs and their respective courses.

Conceptual Frameworks

Shields and Whetsell (2017) proposed that pairing multiple frameworks was a useful way for new scholars to develop their own research design. Furthermore, Salsberry (1989) suggested researchers would inevitably develop preconceived frameworks based on their own lived experiences. Therefore, conceptual frameworks discussed in this dissertation addressed my perspectives on implementing digital media as a pedagogical tool in PACs. Although the frameworks were not used to directly guide the research methods, the described frameworks were still relevant to cohesively develop

an understanding of digital media as a pedagogical tool in PACs. The following paragraphs provide frameworks considered relative to this dissertation.

Due to the complex interactions between digital media, university physical activity programs, the instructors who teach PACs, and the students enrolled in PACs, four frameworks are discussed to develop a comprehensive understanding of digital media's role as a pedagogical tool in PACs. First, Mishra and Koehler's (2006) technological pedagogical content knowledge (TPACK) model served as a framework for digital media's role in PACs. Second, a framework developed by Reeves et al. (2016) provided variables regarding university administration, training, GTA beliefs and attitudes, as well as student outcomes. Third, Bloom's taxonomy (1956) provided a framework for digital media's role in student learning outcomes and higher order thinking. Fourth, Fink's (2003) significant learning taxonomy also addressed student learning with a more comprehensive framework and perspective within a higher educational instructional design.

Digital Media Framework

The TPACK framework (see Figure 1) was an appropriate model to examine the implementation of digital media within kinesiology (Koekoek et al., 2018; Krause & Lynch, 2018; Mishra & Koehler, 2006). Adapted from Shulman's (1987) knowledge base components, TPACK incorporates technological knowledge (TK) with subject-specific pedagogical knowledge (PK) and content knowledge (CK). Additionally, bi-lateral crossover was found between each component, incorporating technological pedagogical knowledge (TPK), pedagogical content knowledge (PCK), and technological content knowledge (TCK). The TPACK framework provided technology-focused

connections between knowledge and skills that have examined a multitude of educational pedagogies such as professional development, effective classroom instruction, and reflective processes by educators (Koehler, Greenhalgh, Rosenberg, & Keenan, 2017). Therefore, the TPACK framework was a reasonable starting point to exploring digital media's pedagogical role in PACs and teacher development (Koekoek et al., 2018; Krause & Lynch, 2018; Melton et al., 2016; Mishra & Koehler, 2006).

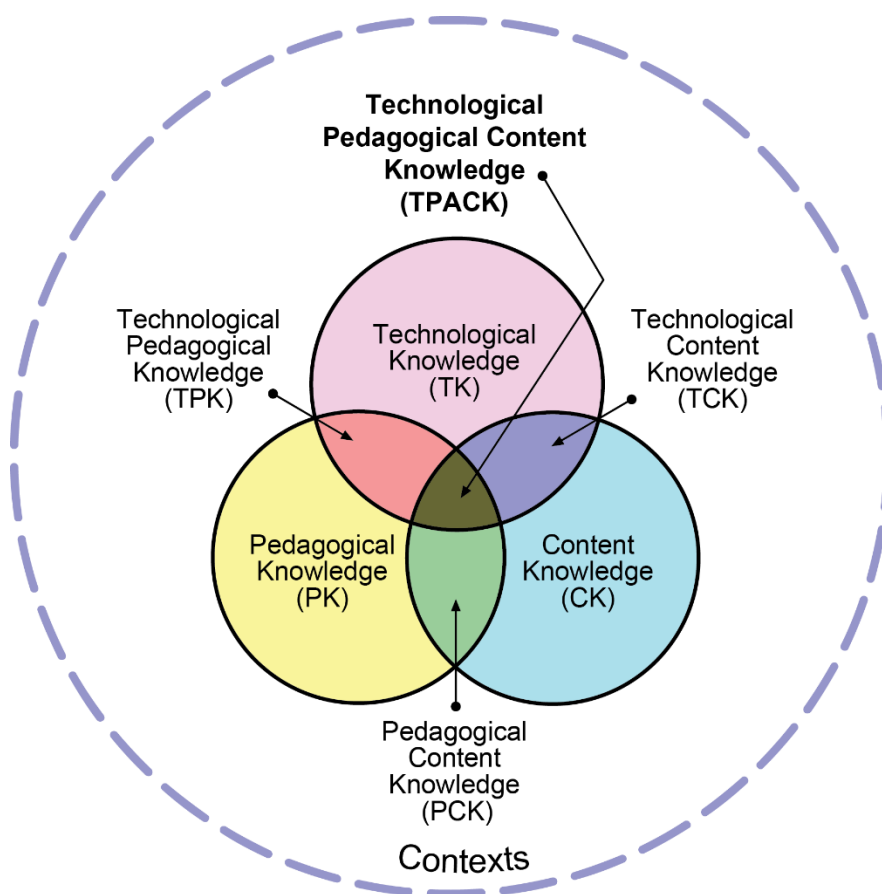


Figure 1. Technological, pedagogical, content, and knowledge model (Reproduced with permission of the publisher).

Developing technological practices early is an important step in development for less experienced physical activity instructors (Chambers, Sherry, Murphy, O'Brien, &

Brelin, 2017; Charles & Charles, 2016; Hibberson, Barrett, & Davies, 2015). Therefore, providing and encouraging young academics (i.e., GTAs) the opportunity to develop various facets of technological pedagogical content knowledge should be implemented in the early socialization stages of their career (Langdon et al., 2017; Melton et al., 2016; Mishra & Koehler, 2006; Russell, 2015; Shulman, 1987; Stapleton et al., 2017; Woods et al., 2017). For example, a first-year physical activity instructor might be introduced to the idea of flipped learning, which incorporates homework before a lesson to save instruction time (Campbell & Cox, 2018; Stapleton et al., 2017). As the physical activity instructor incorporates the flipped learning approach, the instructor would have more time to practice implementing effective and efficient assignments by encouraging students to be prepared to learn content before class. With personalized software or resources (e.g., LMS or mobile apps), the physical activity instructor could adapt their technological knowledge in the classroom unique to their own technological content knowledge (Litchfield, 2018; Mishra & Koehler, 2006; NASPE, 2009; Ottenbreit-Leftwich & Brush, 2018; Stapleton et al., 2017).

Graduate Teaching Assistant Framework

Reeves et al. (2016) provided a comprehensive framework that included a macro-scale evaluation model for GTAs. Table 8 provides variables starting from the administration, to the instructor's cognition and teaching practices, to student impact. These variables were further divided into three interrelated components (a) contextual, (b) moderating, and (c) outcomes. It is important to address all variables to ensure a holistic understanding of digital media implementation in PACs. Therefore, the three

components are explained in further detail, acknowledging the relationship between a GTA's variables (contextual, moderating, outcome) and digital media implementation.

Table 8

Graduate Teaching Assistant Framework

Variables	Descriptions and Examples
Contextual Variables	
Institutional	Type: <i>Public or private and research status</i> Size: <i>Number of GTAs and students</i> Student body characteristics: <i>Demographics</i>
GTA Training Design	Policy training requirements: <i>Campus or departmental</i> Content: <i>Active learning workshops or PAC policies</i> Structure: <i>Pre-semester orientation or on-going support</i> Activities: <i>Curriculum development or micro-teaching</i>
GTA Characteristics	Teaching experience and training: <i>Syllabus development experience</i> Career Aspirations: <i>research or teaching</i> Attitudes toward Teaching: <i>Class specific or digital media implementation</i>
Moderating Variables	
Implementation	Adherence: <i>Treatment administered as prescribed</i> Exposure: <i>Amount of digital media implementation</i> Participant Responsiveness: <i>GTA feedback</i>
Outcome Variables	
GTA Cognition	Knowledge/skills: <i>TPACK</i> Attitudes toward teaching: <i>Changes after digital media use</i> Beliefs about teaching: <i>Teaching self-efficacy</i>
GTA Teaching Practice	Planning: <i>Scope and sequence or backward design</i> Instruction: <i>Flipped learning</i> Assessment: <i>Scoring rubrics</i>
Undergraduate Students	Knowledge/skills: <i>Assessment outcomes</i> Retention/attainment: <i>Digital literacy</i> Interest: <i>Student engagement with digital media</i>

Source: Reeves et al. (2016)

Reeves et al.'s (2016) contextual variables focused primarily on administrative and descriptive information that could be assessed. The first contextual variables described student GTA population and student body demographics. Similar to Saunders et al. (2005), describing the program was the first step in examining process evaluation in health-promoting programs (i.e., digital media implementation in PACs). The second contextual variable was the GTA training design. The training should be specifically for GTAs to implement content that supports active learning (McKeachie & Svinicki, 2013; NASPE, 2009). The third contextual variable pertained to GTA characteristics such as career aspirations and attitudes, both of which have been shown to impact the use of digital media (Kretschmann, 2015). More detail about GTA characteristics is described in the moderating variables.

Reeves et al.'s (2016) GTA moderating variables consisted of any implementation developed from a GTA training. Quality training for GTAs should be evaluated to learn about their reaction to the training, how much or what they learned from the training, changes in teaching methods, as well as attitudes (Guskey, 2016; Park, 2004; Reeves et al., 2016; Saunders et al., 2005). These characteristics help evaluate a program's implementation of GTA professional development in digital media implementation, specifically within PACs (Lim et al., 2009; Melton et al., 2016; Reeves et al., 2016; Stapleton et al., 2017).

The previous two variables (contextual and moderating) impacted the outcome variables, which were variables between GTAs and their students. The GTA variables are separated into two categories: cognition and teaching practices. A cognition variable might address a GTA's knowledge a PAC or digital media implementation (e.g.,

TPACK). A cognition variable might also address a GTA's beliefs about teaching (e.g., teaching self-efficacy), which should be considered in PACs (Melton et al., 2015; Reeves et al., 2016). Teaching practice variables might address planning strategies designed by GTAs. Teaching practice variables might also address instruction and assessment strategies such as curriculum models and scoring rubrics (Melton et al., 2016; Metzler, 2011; Reeves et al., 2016; Stapleton et al., 2017). Outcome variables, including undergraduate students, consider components such as the knowledge and skills gained from a PAC, retention and attainment, as well as the interest in the content. Additional frameworks described student learning.

Student Learning Frameworks

As previously mentioned, this dissertation focused more on pedagogical practices from physical activity instructors rather than students. Therefore, to comprehensively examine how digital media would be implemented as a pedagogical tool in PACs, a socially constructive framework should address student learning (Hoadley & Van Haneghan, 2018; McKeachie & Svinicki, 2013; Reynolds, 2016). A suggested framework was an adaptation from Bloom's (1956) taxonomy. Anderson et al. (2001) adapted the taxonomy into six contemporary hierarchical levels of learning outcomes:

1. Remembering
2. Understanding
3. Applying
4. Analyzing
5. Evaluating
6. Creating.

According to the taxonomy, creating is the uppermost level of higher-order thinking. Coincidentally, multimedia content is rich in student learning opportunities where content can adopt, adapt, and modify information into new knowledge (Greenhow, Robelia, & Hughes, 2009). Lim et al. (2009) approached creation within PACs by incorporating video-based projects, which have encouraged and stimulated student learning (Kenworthy-U'Ren & Erickson, 2009; Yousef et al., 2014). McKeachie and Svinicki (2013) suggested this taxonomy should specifically promote student learning and thinking within higher education. However, Fink (2003) suggested Bloom (1956) should have offered more meaningful descriptions of student learning within higher education instructional design. Therefore, an additional student learning model would complement the specificity in which digital media implementation could impact student learning.

Fink's (2003) significant learning taxonomy provided greater specificity within PAC instructional design. As previously mentioned, physical activity programs provide students a diverse array of PACs (e.g., mind-body, team sports, lifetime, etc.). Therefore, a learning framework that could address a wide variety of course types should be considered (Cardinal & Kim, 2017). As an example, a team sports PAC (e.g., soccer) learning framework should look different than a mind-body PAC (e.g., stress management) student learning framework (NASPE, 2009). The taxonomy was based on relationships among learning goals, feedback and assessment, and teaching and learning activities for instructional designers in higher education (Fink, 2003; Litchfield, 2018). Fink provided six ways to address significant learning: (a) foundational knowledge, (b) learning how to learn, (c) caring, (d) application, (e) human dimension, and (f)

integration. Foundational knowledge included the basic content for students to understand other aspects of a course. For example, a basketball class would learn the foundations of basketball (i.e. dribbling, passing, shooting) before more advanced knowledge (e.g., offensive and defensive plays and tactics). Learning how to learn involved the process of learning itself. For example, students enrolled in an online conditioning course might be expected to develop their own weight or exercise goals through self-directed learning. Caring involved the change in feelings or values toward a subject or topic. For example, a stress management course would incorporate the idea of self-care mentally, physically, or socially. Application involved developing the learned content from a class into other parts of life. For example, a group fitness class might focus on the components of exercise and fitness but also shows the student how to engage in similar activities on their own. Human dimension involved the support of learning about oneself or others. Integration involved making new connections. Overall, it was suggested that adopting Fink's taxonomy in combination with Bloom's (1956) taxonomy would provide a foundation for student learning based on digital media implementation in PACs (Anderson et al., 2001).

CHAPTER III

METHODOLOGY

Merriam (1995) stated,

Qualitative research is ideal for (a) clarifying and understanding a phenomenon and situations when operative variables cannot be identified ahead of time; (b) finding creative or fresh approaches to looking at over-familiar problems; [and] (c) understanding how participants perceive their roles or tasks in an organization. (p. 52)

Therefore, this study qualitatively explored PAC instructors' lived experiences when implementing digital media and how PAC instructors implemented digital media as a pedagogical tool. A collective case study was used to holistically explore the 'what's' and 'how's' of digital media pedagogies in PACs (Creswell & Poth, 2018; Yin, 2009). This collectively bounded case study jointly used a constructionist and constructivist epistemology as well as a social constructivist and interpretivist theoretical perspective to explain and understand my stance of the phenomenon (Creswell & Poth, 2018; Crotty, 1998; Merriam, 1995; Stake, 1995). This chapter begins with my epistemology and theoretical perspective followed by the design of the study.

Epistemological and Theoretical Perspective

As a qualitative case study, addressing the epistemology is recognized as a subjective necessity to understanding a researcher's stance (Crotty, 1998). Both constructionism and constructivism are paradigms jointly used as the epistemology.

Constructionism acknowledges that both ‘subjective’ and ‘objective’ realities (e.g., shared understandings, language, the environment) are constructed, not discovered (Crotty, 1998; Schwandt, 2014). Constructionism, therefore, accepts the idea that meaning is constructed differently by all individuals (Crotty, 1998). Similarly, constructivism is also considered ‘subjective’ in nature, suggesting individual meanings are continuously constructed and interpreted based on social and historical experiences (Creswell & Poth, 2018; Stake, 1995). Both paradigms provide an appropriate epistemology to best symbolize individual meanings and realities into social constructs among human interactions and their interpretations of experiences, knowledge, and realities (Creswell & Poth, 2018; Crotty, 1998; Park, 2004; Patton, 2015).

Social constructivism and interpretivism have been coincidentally used as a theoretical perspective that views knowledge as an interpretation of participants’ meanings and experiences (Creswell & Poth, 2018; Crotty, 1998). Stemming from seminal works by Vygotsky and Piaget, a social constructivist researcher interprets data to generate meanings and patterns considered valuable to the researcher (Creswell & Poth, 2018; Papert, 1980; Reynolds, 2016). Studies have continuously used a social constructivist lens to interpret technology-based pedagogies in education (Ottenbreit-Leftwich et al., 2010; Papert, 1980; Reynolds, 2016; Sparkes & Smith, 2013).

A researcher’s stance helped clarify and understand the experiences of a phenomenon in which digital media was implemented in PACs as well as interpret possible variables that might be overlooked. The following design of the study section describes the case study research, methods, participants, and instrumentation, analysis

plan, and generalizability. Additionally, tables and appendix references provide greater detail to clarify the overall design of this study.

Design of the Study

Case Study Research

A case study research design generally investigates multiple perspectives within a single bounded system (Creswell & Poth, 2018). A case is defined as an object being studied, generally within a real-life contextual situation (Stake, 1995). A case could be a person, group, process, community, or event but must be bounded by a set of parameters such as time and place (Hodge & Sharp, 2016; Stake, 1995). Stake (1995) identified three types of case studies: (a) intrinsic, (b) instrumental, and (c) collective. Intrinsic case studies primarily focus on a unique point of inquiry chosen by the researcher (Sparkes & Smith, 2013). In other words, the researcher intrinsically chooses a lesser-known phenomenon to be studied in more detail (Stake, 1995). Instrumental case studies focus on illustrating case-specific issues within the bounded system (Creswell & Poth, 2018; Sparkes & Smith, 2013). Instrumental studies might include specific details about a participant's environment or body language (Stake, 1995). Collective case studies blend and overlap both intrinsic and instrumental case studies by studying multiple cases within a phenomenon (Sparkes & Smith, 2013; Stake, 1995). As Creswell and Poth (2018) stated, a collective case study should purposefully investigate several cases to represent different perspectives of the same phenomenon.

A collective case study design was used to interpret the different cases of individuals as well as comprehensively generate a greater understanding of the overall phenomenon (Sparkes & Smith, 2013; Stake, 1995; Yin, 2009). Goddard (2010)

suggested a collective case study is common in an educational setting where various events and contexts overlap within a common set of parameters. Therefore, this case study research design involved the investigation of a single phenomenon (i.e., a physical activity program implementing digital media) among a series of bounded cases (i.e., physical activity instructor's implementation of digital media throughout a semester) to gain a better understanding of the role of digital media as a pedagogical tool among PACs. Evidence supported the use of digital media pedagogies in PACs (Cox et al., 2019; Melton et al., 2016; Schwandt, 2014; Stapleton et al., 2017). This collectively bounded case study used multiple sources of information (e.g., observations, interviews, document collection, technology journals) to gather accurate descriptions of the lived experiences of PAC instructors and their involvement with digital media (Creswell & Poth, 2018; Smith et al., 2012; Stake, 1995).

Methods

Data collection began when physical activity instructors, including the researcher, were required to participate in a GTA orientation and department training as mandated by both the Graduate School and the School of Sport and Exercise Science. The orientations addressed federal and state regulations (e.g., Title IX, disability support) during a one-day event led by the university's Graduate School. Additional content included teaching strategies and support programs provided by the university. The department training addressed specific sport and exercise science courses as well as PAC content and information (e.g., campus resources, administrative assistant contact information, etc.) during a separate one-day event led by the School of Sport and Exercise Science. The

PAC-related content was delivered by School of Sport and Exercise Science administration and faculty.

Data collection began with an observation of all the GTA orientation and Sport and Exercise Science GTA training. The researcher participated in the orientation, recording as much information related to digital media and pedagogy as well as any notes for future reflection and reference (Smith et al., 2012). Additionally, the researcher observed and recorded notes of the Sport and Exercise Science GTA training, recording any information related to digital media and pedagogy on a digital document. Following both trainings, the researcher developed a professional development summary report used by UNC's Active Schools Institute. The summary report was then verified for accuracy by two peers who also participated in both trainings. Collecting data from the trainings helped establish a backdrop for the participants.

Participants

Participants were recruited directly after the Sport and Exercise Science training. Participants included eight GTA physical activity instructors (two females, six males) who were current doctoral students at a mid-sized university in the mountain west of the United States. The purposeful sampling of eight participants focused on GTAs who were instructors of record for at least one PAC (Creswell & Poth, 2018). Courses included Activities for Stress Management, Bowling, Basketball, Fitness and Conditioning (online), Swimming, Self-Defense, and Walking and Jogging (online). All GTAs had various background knowledge and career interests in higher education. For instance, one participant specifically mentioned an interest in working for a research institution, whereas other participants either mentioned interest in either/or teaching or research

institutions. Participants' ages ranged from 25- to 32-years-old. Participants were given letters rather than pseudonyms to avoid misrepresentation of a given name while still maintaining ethical confidentiality (Lahman, 2017; Mack, Woodsong, MacQueen, Guest, & Namey, 2005). Table 9 provides an overview of all participants.

Table 9

Participant Information

Participant	Gender	Age	Ph.D. Area Sought	Semester in Program	Prior Number of PACs Taught	PAC	Non-PAC
A	Male	26	Sport Administration	1 st	0	(1) Activities for Stress Management, (2) Bowling	(1) Sport Finance (online)
B	Male	25	Sport Administration	1 st	2	(1) Basketball	(1) Coaching and Officiating
C	Female	27	Social Psychology of Sport and Physical Activity	1 st	2	(1) Fitness and Conditioning (online)	(3) Motor Learning Lab
D	Male	25	Exercise Physiology	3 rd	1	(1) Swimming	(2) Exercise Physiology Lab (1) Exercise Assessment Lab
E	Female	29	Sport Pedagogy	4 th	5	(2) Activities for Stress Management	(1) Planning, Assessment, and Instruction in Physical Education Lab
F	Male	25	Social Psychology of Sport and Physical Activity	3 rd	4	(1) Fitness and Conditioning (online)	(1) Introduction to Research in Sport TA
G	Male	30	Sport Administration	6 th	5	(1) Self Defense	(1) Introduction to Research in Sport TA
H	Male	32	Sport Pedagogy	1 st	0	(1) Self Defense (2) Walking and Jogging (online)	None

Procedures and Instrumentation

Before recruiting participants, the researcher first built rapport with administration and staff of the university to establish trust and ethical practices throughout the study (Creswell & Poth, 2018; Smith et al., 2012). Previous pilot studies conducted by the researcher as well as relevant literature recognized that recruiting between four and eight participants was a sufficient sample size for a single-site collective case study (Cox et al., 2019; Creswell & Poth, 2018; Goddard, 2010). For this dissertation study, the researcher recruited eight participants at a single university to explore digital media across multiple PACs. A small and situated sample size allowed the researcher to carefully attend to each case before comparative analysis (Eatough & Smith, 2008; Smith et al., 2012). Qualifying participants included new as well as experienced GTAs in order to fully explore and describe the similarities and differences across cases within a single department (Stake, 1995). Participants were recruited from the School of Sport and Exercise Science at UNC. Unlike physical activity programs at neighboring universities (e.g., Colorado State University or University of Colorado at Boulder), UNC does not have a full-time coordinator. This dissertation, therefore, purposefully recruited from UNC to stay within bounds of a single-site collective case study where established rapport was built among the researcher, the administration, and the participants (Creswell & Poth, 2018; Stake, 1995; Yin, 2009).

All qualifying participants were current instructors of record for at least one PAC at the time of data collection. A \$50 Visa gift card was given to participants who completed the entire study, which took place throughout the fall 2019 semester and involved participation in three interviews, two classroom observations, and three

technology journals. A verbal recruitment script (see Appendix A) was read out loud to all physical activity instructors at the end of the GTA department training.

Simultaneously, an information form that included name and contact information (see Appendix B) and a consent form (see Appendix C) were provided to participants and collected by the researcher shortly thereafter. Confirmation and follow-up email messages were sent to participants as well as a schedule request for the first and subsequent interviews and observation dates (see Appendix D).

There were four methods of data collection: (a) interviews, (b) observations, (c) document collection, and (d) technology journals. Each method is described below, accounting for all research questions and their appropriate form of analysis and derived data. The four methods of data collection were used by the researcher to hermeneutically interpret each participant both individually and collectively based on each research question (Schwandt, 2014; Smith et al., 2012; Sparkes & Smith, 2013).

Interviews. Each participant was scheduled for three interviews throughout a 16-week semester. Based on two previous pilot studies conducted by the researcher, three interviews seemed most appropriate to holistically capture the lived experiences of the participant's 'beginning, middle, and end' of a given semester. Previous pilot studies as well as relevant literature have shown that establishing rapport is important to building trust between the researcher and the participants (Cox et al., 2019; Creswell & Poth, 2018; Gaikwad, 2017). Therefore, the researcher aimed to minimize power imbalances by informing and empathizing with participants about prior experiences as a PAC instructor and as a GTA in the School of Sport and Exercise Science (Creswell, 2013; Lahman, 2017).

The semi-structured, audio-recorded interviews lasted between 35 and 60 minutes. The first interview took place in the first and second week of the fall semester. Based on Reeves et al.'s (2016) evaluation model on GTAs, semi-structured questions (see Appendix E: Interview Guide I) included inquiries about participants' teaching experience, courses they taught, PAC history (if applicable), PAC content knowledge, PAC attitudes and behaviors, and planned pedagogies for the semester. Questions also included open-ended digital media components such as but not limited to experience with digital media, experience teaching with digital media, and any planned digital media pedagogies for the semester. The first interview also inquired about the recent orientation and training GTAs had to attend during the week prior to the beginning of the semester.

The second and third interviews (see Appendix F: Interview Guide II and Appendix G: Interview Guide III) were conducted mid-semester (weeks seven and eight) and the end of the semester (weeks 15 and 16), respectively. The second and third semi-structured interviews included casual conversations about how the semester was progressing, updates on courses, learning experiences, and intended changes in pedagogies. Both interviews were based on participant-specific information from other collected data (i.e., previous interview, course observation, technology journal). For example, the researcher observed a participant had to wear a microphone for a student with a hearing impairment, which was noted and asked about in the third interview. After the interview guide was completed or reached data saturation, the researcher asked participants to share any relevant documents as well as a virtual tour of their Canvas content or any other LMS. By asking the participant for a virtual tour of their PAC Canvas page, each participant shared their experiences and reflections as well as provided

an audio-recorded description of digital media within the participant's Canvas or other digital media.

Observations. Observations provide the researcher subtle and unplanned factors about the phenomenon being studied (Merriam, 1995; Ottenbreit-Leftwich et al., 2010; Stake, 1995). Before conducting course observations, the researcher contacted each participant in advance to schedule a time to observe their PACs (weeks 4-5 and 11-12). The researcher served as a participant observer, which included the researcher partially participating in the activities as a form of analysis (Merriam, 1995; Schwandt, 2014). Based on previous pilot studies by the researcher, observing as a participant in PACs rather than observing from the sidelines created a more welcoming and less authoritative feeling for both students and participants. Descriptive observations of the PACs were recorded (see Appendix H), examining both the teachers' and the students' use of digital media. Descriptive notes included but were not limited to the classroom layout, physical settings, the time an instructor or student entered the room, and detailed notes about the lesson or content (Creswell & Poth, 2018). Reflective notes were documented after each observation, interpreting feelings or forgotten descriptions of the event (Creswell & Poth, 2018; Stake, 1995).

Document collection. Collecting documents provides a useful substitute to examining a participant's activities that could not be observed otherwise (Emmison, Smith, & Mayall, 2012; Merriam, 1995; Stake, 1995). Documents were defined as but not limited to files, screenshots, photos, video, links, or any printed handout that was created via digital device (Emmison et al., 2012). As previously mentioned, document collection occurred directly after each interview when the researcher asked the participant

for a virtual tour of their PACs on Canvas content (see Appendix I [Canvas Specific]). Canvas content included course details, home, announcements/emails, syllabus, modules, assignments, files, attendance, instructor course evaluation, quizzes, collaborations, people, and Zoom. During the virtual tour, the researcher asked the participant to take a screenshot of meaningful content. For example, if a participant used a Canvas-created rubric for a skills assessment, the researcher asked the participant to take a screenshot of the rubric for further analysis. No student data or information were collected throughout the process. Participants were also asked for any non-Canvas documents. Non-Canvas specific (see Appendix J: Document Collection Guide [Non-Canvas specific]) documents included but were not limited to PAC management and communication such as emails, announcements, links, apps used, social media, and artifacts or documents related to PAC management and communication.

Technology journal. Corti (1993) described how “diaries are used as research instruments to collect detailed information about behavior, events, and other aspects of individuals’ daily lives” (p. 1). A diary or journal could be used as a research tool to ‘capture’ the life of the instructor implementing digital media into their PACs (Bartlett & Milligan, 2015). Incorporating a technology journal in conjunction with interviews, observations, and document collection provided accurate details that might have been incomplete otherwise (Musta’amal, Norman, Rosmin, & Jabor, 2015). To encourage punctual technology journal completion, reminder emails (see Appendices K, L, and M) were sent to all participants to complete the technology journal (see Appendix N), which consisted of a monthly Qualtrics survey for participants to complete throughout the semester. The technology journal was divided into two parts: (a) a checklist of digital

media formats, and (b) open-ended descriptive questions about a specific digital media format. First, the participants were asked to indicate which digital media formats were used within the past month via checklist developed by the researcher and an expert in the field of technology in physical education. The checklist had a series of digital media formats to select from including Microsoft Outlook, mobile phones or tablets, audio/video links or files, Canvas usage, social media, wearable devices, electronic equipment, and others. Second, participants were asked to choose one of the digital media formats to describe in greater detail. Adapted from previous studies that used technology journals (Palao et al., 2015; Park, 2004), questions included (a) Select one technology from the list above that you have implemented in the past month and please describe in detail how it was used (i.e., date, how it was used, and purpose of implementation); (b) Were there any benefits in using this digital media tool? Please describe; (c) Were there any challenges in using this digital media tool? Why or why not?; (d) Was this implementation of this digital media tool a success? Why or why not?; and (e) Will you use this digital media tool again? Why or why not?

As previously stated, the information collected from the technology journals were used as a supplement for the semi-structured interviews (Emmison et al., 2012). An external GTA not associated with the study completed the journal as well as provided feedback to further verify the content validity and the time it took to complete the survey, which was mentioned to participants via email. To assist in participation accuracy, an additional printed technology journal (see Appendix O) was provided for all participants in case they wanted to record their digital media use between each Qualtrics technology journal.

Table 10 presents the procedures of the study beginning with Institutional Review Board (IRB) approval (see Appendix P). Each phase determined different procedures within a given timeline. The timeline was primarily based around the UNC's fall semester, which adequately fit the parameters of a single-site collective case study (Creswell & Poth, 2018; Stake, 1995; Yin, 2009).

Table 10

Phases

Phase	Action/Procedure	Timeline
Preparation Phase	Establish rapport and preparation with administration	February 2019
	Obtain IRB approval	May 2019
	Design and organize QPD evaluation for workshop	May – July 2019
	Conduct digital media PD workshop	August 2019
Phase I: Data Collection/Data Analysis	Invite Participants/Collect Consent and Information Forms	Week 0 (~August 19, 2019)
	Schedule Interviews	Week 0-1
	Interview/Document Collection #1	Weeks 1-2
	Observation #1	Weeks 4-5
	Technology Journal #1	Week 5
	Interview/Document Collection #2	Weeks 7-8
	Technology Journal #2	Week 10
	Observation # 2	Week 11-12
	Interview/Document Collection #3	Week 15-16
	Technology Journal #3	Week 15
Phase II: Comprehensive Data Analysis	Data Analysis	Weeks 1-16 (~August 26 – December 12, 2019) December 2019- January 2020

Note. Specific dates for data collection can be found in Appendix Q.

Analysis

An interpretive phenomenological analysis (IPA) was used to explore the digital media pedagogies across a variety of cases (Bodsworth & Goodyear, 2017; Cox et al., 2019; Papathomas & Lavalley, 2010; Sparkes & Smith, 2013). Similar to a thematic analysis, an IPA purposefully details narrative accounts about a homogeneous group of individuals (between four and eight) to learn about their experiences and interpretations within a bounded system (Ravn, 2016; Schwandt, 2014; Smith et al., 2012; Sparkes & Smith, 2013). However, unlike a thematic analysis, an IPA is more useful when the complexity of the phenomenon is not appropriately comparable to analyze patterns across cases (Sparkes & Smith, 2013). For example, this dissertation explored a variety of GTA experiences, their teaching methods (e.g., online, half-semester, off campus), and PAC types (e.g., mind-body, sports, lifetime wellness). An IPA approach equally highlighted the differences as much as the similarities to gain a better understanding of the phenomenon (Cox et al., 2019; Smith, Jarman, & Osborn, 1999; Smith & Osborn, 2004; Sparkes & Smith, 2013; Stake, 1995).

Stemming from Sparkes and Smith (2013) and Smith et al. (2012), IPA consists of six essential steps: (a) data immersion, (b) exploratory coding, (c) identify patterns, (d) form clusters, (d) identify themes, and (e) identify themes across cases. Using an IPA, analysis focused on describing snapshots of experiences and emphasizing individual patterns and meanings over a period of time (Eatough & Smith, 2008; Emmison et al., 2012; Moustakas, 1994; Schwandt, 2014). Table 11 provides a brief description of each interpretive phenological analysis step.

Table 11

Interpretive Phenomenological Analysis

Steps	Description
Data Immersion	Listen to all transcripts. Read and re-reading verified transcripts as well as any other collected data.
Exploratory Coding	Inductively comment and code short sentences and phrases related to verbatim quotes as well as any other collected data.
Identify Patterns	Deconstruct individual comments and codes to develop concise phrases that can be used within and across cases.
Form Clusters	Group common patterns that remain consistent within cases and organized hierarchically.
Identify superordinate Themes	Define expressed phrases based on patterns that best represents the essence of individual lived experiences.
Identify Recurrent Themes Across Cases	Define expressed phrases representing the overall themes or essence across all cases.

Source. Smith et al., 2012; Sparkes & Smith, 2013.

Data immersion. Data immersion began once data were collected and continued throughout the entirety of the analysis. According to Smith et al. (2012), the first step to data analysis was immersing oneself with the collected data. Data immersion included listening to each audio interview at least once, followed by a line-by-line verification of verbatim transcriptions. Verbatim quotes included but were not limited to pauses, laughter, and repetitive descriptions of personal experiences (Smith et al., 2012). Transcripts were read and re-read to prepare for exploratory and inductive coding (Eatough & Smith, 2008). Additionally, observation sheets, technology journals, and

collected documents were also read and re-read to clarify and triangulate data sources (Creswell & Poth, 2018; Stake, 1995).

Exploratory coding. Exploratory coding began after a transcript was verified by the researcher. Additional exploratory coding was included for each observation sheet, technology journal, and collected document for further triangulation (Creswell & Poth, 2018). Comments included loose annotations such as short sentences or phrases relating to the implementation of digital media in PACs (Sparkes & Smith, 2013). Unlike open coding, which consists of one or two words, loose annotations were described more about the situation such as a class discussion or a conceptually related theory (Reynolds, 2016; Sparkes & Smith, 2013). For example, an instructor who shared their experience about a student-produced video was annotated as “unintentionally incorporated higher order thinking practice and valued the end-product.” The comment referred to Bloom’s (1956) taxonomy of learning but remained inductively focused to the phenomenon being studied and interpreted (Smith et al., 2012; Sparkes & Smith, 2013). Once each transcript had at least one round of exploratory coding, an additional three rounds of exploratory coding aimed to answer the research questions, which were recorded in three separate colors to represent each research question. Answering each research question helped the researcher narrow the focus of the phenomenon while inductively analyzing the lived experiences of the instructors (Smith et al., 2012).

Identify patterns. Patterns were developed based on verbatim quotes that were interpreted via exploratory codes and other data sources (e.g., observation notes). Unlike exploratory codes that included longer comments, identified patterns were developed through transcript deconstruction. Deconstruction was the process of reading each

transcript backward to help identify a participant's emphasis of the pedagogical experiences into concise phrases (Smith et al., 2012). Deconstructive notations allowed the researcher to notice patterns that might have been otherwise missed. Subsequently, creating deconstructive notations consolidated all previous notes into patterns that were continuously identified within and across cases into concise phrases that could be quickly identified based on interview number and line number. Smith et al. (2012) noted identifying common patterns that put the "like with like" (p. 96) was a process known as abstraction and were written down on the right side of the printed transcript. Afterward, each pattern was placed on a digital document containing the participant, interview number, identified pattern, exploratory codes affiliated with the pattern, and the verbatim quote associated with the identified pattern. Patterns encompassed the participant's lived experiences and individual vernacular was used to develop meaning of the experienced phenomenon (Smith et al., 2012). For example, multiple participants expressed the importance of "engagement" within their classes. However, when asked the meaning of "engagement," participants expressed their own definition. Answers included but were not limited to attendance, student-teacher relationship, student-student relationship, or the overall success of the class.

Form clusters. After all patterns were developed and properly archived on a digital document, the document was printed and cut into individual strips to separate each pattern. The patterns were organized by notable features within each case, creating clusters for each participant. Clusters were then labeled based on the overall essence and interpretation of their experiences (Smith et al., 2012; Sparkes & Smith, 2013). Smith et al. (2012) suggested data sets with more than six participants should remain consistent

across cases. Therefore, clusters were formed based on common relationships that were crosschecked with quotes both within and across cases. Due to the large data set, a table was used to organize clusters for each participant. Emerging titles were continuously developed and kept throughout the process and maintained data-rich content. Clusters were characterized by hierarchical relationships that led to the most data-rich clusters being identified as superordinate themes (Smith et al., 2012; Sparkes & Smith, 2013). For example, “resources,” “attendance,” and “student engagement” were three common clusters found across all participants, which ultimately led to superordinate themes.

Identify superordinate themes. Superordinate themes were identified based on common clusters and patterns found within and across cases. Ideally, superordinate themes would be found across all participants but due to the diverse sample of participants, superordinate themes were labelled if at least one third of the participants expressed similar experiences (Smith et al., 2012). For instance, three out of eight participants were international students and all three expressed the difficulty of teaching in their second language. Themes were renamed based on combining a variety of experiences that related to both the participant and the interpreted notes by the researcher (Smith et al., 2012). As suggested by Sparkes and Smith (2013), a table was made to include all themes with line numbers for easy verification. The tables were then formulated and divided based on the research questions, which are found in the results chapter.

Identify recurrent themes across cases. Recurrent themes were the most strongly connected superordinate themes found across all participants. Recurrent themes were developed based on theoretical conditions that related within and across cases while

connecting back to the original data (Sparkes & Smith, 2013). In other words, superordinate themes were combined to present the greatest impact that described the essence of using digital media in PACs. For example, all participants were willing to experiment with digital media to encourage student engagement. Combining themes such as “experimental” and “student engagement” developed a recurrent theme that ultimately resulted in a desire to try digital media-based pedagogies that would include students being engaged with the content or the PAC environment. Results included an analysis of individual narratives and their collective experiences built into themes of a digital media implementation in PACs (Creswell & Poth, 2018; Smith et al., 2012; Sparkes & Smith, 2013). Although verbatim transcripts had been used up to the writing stage of the analysis, quotes were minimally adjusted for clarity.

Trustworthiness

Trustworthiness is a necessary set of criteria to ensure quality research (Schwandt, 2014). Lincoln and Guba (1985) outlined four methodological trustworthiness criteria standards: (a) credibility, (b) transferability, (c) dependability, and (d) confirmability. Guba and Lincoln (1989) also outlined five product-based standards known as authentic criteria: (a) fairness, (b) ontological authenticity, (c) educative authenticity, (d) catalytic authenticity, (e) and tactical authenticity. All trustworthiness criteria are described in relation to this research dissertation.

Credibility. Similar to internal validity, credibility involves the accuracy or believability of a study (Burke, 2016; Schwandt, 2014). A credible study accurately builds and represents all findings back to the original data (Burke, 2016; Reynolds, 2016). This dissertation ensured credibility by including but not limiting prolonged

engagement with the data, persistent observation of the data, and data triangulation (Lincoln & Guba, 1985; Stake, 1995). Prolonged engagement included reading and rereading all transcripts and additional data (e.g., observation notes, technology journal) throughout the entirety of the data collection and analysis phases. Such prolonged engagement included continuous observation of the changes and patterns found throughout the study. Data were triangulated based on substantiated data from interview transcripts, which were then supported by observation notes, participant's technology journals, and collected documents (Denzin, 2012; Smith et al., 2012; Stake, 1995). To further develop credibility, an independent audio document was consistently used to record and date the entire data collection and analysis process (Smith et al., 2012).

Transferability. Considered the qualitative form of generalizability (external validity), transferability involved the availability of sufficient methodological and procedural content if the study was to be reproduced (Burke, 2016; Schwandt, 2014). A transferable study should pay close attention to descriptive context in order to place similar procedures in another environment (Burke, 2016). Both transferability and credibility increased trustworthiness by triangulating data sources within and across all data sets (Merriam, 1995; Stake, 1995). As previously mentioned, this researcher recorded all events, procedures, and methodological steps in reflective notes that could be audited to original data (Smith et al., 2012; Sparkes & Smith, 2013).

Dependability. Similar to quantitative 'reliability,' dependability accounted for the consistency of data collection over time (Burke, 2016; Guba & Lincoln, 1989). Dependability should address how the researcher provided traceable and logical accounts of their data collection process (Schwandt, 2014). This dissertation incorporated an

independent audit trail that chronologically documented how and when data evolved into the final findings (Creswell & Poth, 2018; Schwandt, 2014; Smith et al., 2012).

Additionally, equal focus on participant communication helped increase dependable data collection and analysis procedures (Schwandt, 2014).

Confirmability. Confirmability was comprised of the researcher's development of clear and accurate interpretations of the data that included member checking and peer checking (Schwandt, 2014). Member checking involved participants confirming all interpreted data analyzed by the researcher. The researcher conducted member checking by confirming both raw and post analysis interview transcripts with each participant. Transcripts were provided to participants after the first round of interviews as well as final results of individual cases. The researcher emailed each results section to participants, providing one week to confirm accuracy. Only one participant requested all three transcripts, which were provided upon request. Peer checking involved the researcher using a third-party examiner (e.g., a doctoral student in a similar program) to verify and trace all findings back to the original data and memos (Creswell & Poth, 2018; Sparkes & Smith, 2013). This dissertation included multiple peer checking procedures throughout the data collection and analysis processes. The first peer check occurred at the beginning of the data collection and analysis process, which included a qualitative expert verifying the inductive approach to analyzing the data. The second peer check included a fellow graduate student confirming the first round of interview patterns could be traced back to original data. The third peer check included a fellow graduate student confirming the final results quotes could be traced back to the original data. The final peer check included the peer randomly choosing quotes from the results section and the

researcher would show the patterns and codes associated to the quote, which was followed by confirming the participant, interview number, and line number of the transcript.

The four trustworthiness criteria standards outlined (credibility, transferability, dependability, and confirmability) provided a sound methodological approach to a collectively bounded case study (Lincoln & Guba, 1985). However, since this dissertation used a constructivist epistemology, additional criteria addressing authenticity further ensured trustworthiness was established (Schwandt, 2014). Guba and Lincoln (1989) highlighted five types of authenticity criteria: fairness, ontological authenticity, educative authenticity, catalytic authenticity, and tactical authenticity. The following sections provide detailed examples of each type of authenticity.

Fairness. Fairness aimed to equally represent all participants and their respective values. As Guba and Lincoln (1989) mentioned, fairness could incorporate helping all participants understand the purpose of a study. This dissertation treated each participant with fair and equal communication plans throughout the entirety of the data collection process. Examples included but were not limited to all participants being recruited at the same time, all participants were reminded about the purpose of the study during the interviews, all participants received the same emails, and all participants were given gift cards at the end of their final interview. In addition to fairness across all participants, the semi-structured interview guide ensured enough flexibility to ask participant-specific questions while maintaining consistent thematic inquiries such as questions about digital media and PACs.

Ontological authenticity. Ontological authenticity included how the researcher developed data and information with participants (Lincoln & Guba, 1985). Using a constructivist paradigm, the researcher should build all data with participants throughout both the data collection process as well as the data analysis process (Lincoln & Guba, 1985; Schwandt, 2014). Ontological authenticity could include audit trailing and member checking. As previously stated, themes and patterns were interpreted and analyzed in a systematic routine within each case and followed by an overall interpretative analysis (Smith et al., 2012). Once themes were complete, participants received final results to confirm accuracy was developed between the researcher and the participant. All quotes were available either via raw transcript or based on audited patterns. For example, if a participant inquired about a specific quote, the researcher would provide a separate document providing the specific interview number and line number (e.g., A3/464).

Educative authenticity. Educative authenticity addressed how a participant's constructed experiences helped develop a greater understanding and appreciation with all other participants. Ontological and educative authenticity are similar criteria as both focus on a participant's connection with the data (Manning, 1997). Educative authenticity was recognized during the participant's second and third interview where each participant reflected upon their lived experiences and any learning opportunities that might have occurred throughout the semester and the overall study (Reynolds, 2016).

Catalytic authenticity. Catalytic authenticity addressed how the interpretations and findings could help generate and facilitate future actions and research (Manning, 1997). For example, this dissertation examined only one semester's worth of

participants' lived experiences. Catalytic authenticity within this dissertation included but was not limited to the pedagogical benefits, barriers, beliefs, and experiences of digital media implementation. The constructed and interpreted procedures could then be used as a navigation tool for other university physical activity programs wishing to invest in PAC technologies that could play a role throughout an entire semester.

Tactical authenticity. Tactical authenticity addressed how much the participants were empowered to act during the study (Schwandt, 2014). Tactical criteria aimed to reserve the participants the right to address what and how the data were properly interpreted (Guba & Lincoln, 1989; Manning, 1997). Similar to other authentic criteria, an empowered study would include dialogical conversations, member checking, and data accessibility for participants at all times (Manning, 1997). This dissertation upheld tactical authenticity by verbally providing a step-by-step process of the interpretation process from each interview and other data collection procedures.

Role of the Researcher

As the instrument of research, this researcher's role was to limit the amount of subjectivity and bias through critical reflexivity (Lahman, 2017; Schwandt, 2014). However, it was important to address inherent biases that could not be fully eliminated (Lahman, 2017; Schwandt, 2014). As mentioned in the limitations section, bias and prejudiced tendencies could convolute the data collection process and analysis based on personal theories toward pedagogical implications and the use of digital media (Schwandt, 2014). Therefore, this researcher continuously pursued critical self-reflective practices by recording actions and predispositions that might have impacted bias and prejudiced tendencies toward both digital media and pedagogical practices (Lahman,

2017; Schwandt, 2014). Furthermore, this researcher tracked and recorded his social background, assumptions, and positioning behaviors between himself and the participants throughout the entirety of the study in a personal journal (Creswell & Poth, 2018; Lahman, 2017). Consistent critical self-reflection helped separate data between the researcher's bias, potential influence, and the final findings (Creswell & Poth, 2018; Sparkes & Smith, 2013; Stake, 1995). Overall, it was the researcher's responsibility to maintain critical self-reflective strategies (e.g., recording social backgrounds, assumptions and positioning behaviors) to recognize and minimize bias and maximize trustworthiness and authentic criteria during the entirety of the data collection and analysis process (Creswell & Poth, 2018; Guba & Lincoln, 1989; Lincoln & Guba, 1985; Schwandt, 2014).

CHAPTER IV

RESULTS

This chapter is organized into three major sections. The first section describes the immediate findings from each participant via research questions. As previously mentioned, the three research questions inquired about the variables, beliefs and attitudes, and the pedagogical practices associated with digital media in PACs. Answering the research questions provided a foundational understanding of the findings developed within and across cases (Smith et al., 2012). The second section details each participant's lived experiences using digital media as a pedagogical tool. Each participant is contextually described via individual examples that most notably answered the research questions within their own context and personal values regarding digital media, thus highlighting the individual's lived experiences (Smith et al., 2012; Stake, 1995). The third section details the recurrent themes found across cases. Divided into four recurrent themes, the recurrent themes provide an interpretive analysis of the homogenous lived experiences that included (a) experimenting with student engagement, (b) finding meaningful resources, (c) learning Canvas, and (d) valuing video and audio.

Research Questions

As previously described, this study followed three research questions to help guide the researcher to explore the lived experiences of implementing digital media as a pedagogical tool in PACs (Smith et al., 2012).

Research Question One

The first research question explored the variables that impacted the use of digital media in PACs. Common patterns found throughout at least one third of the participants were considered meaningful to document and further analyze (Smith et al., 2012). Table 12 shows the most common variables found within and across cases. Table 13 provides the interpreted definition of each variable with a supporting quote.

Table 12

Variables That Impacted the Use of Digital Media Within Physical Activity Courses

Variable	Participants							
	A	B	C	D	E	F	G	H
Resources	✓	✓	✓	✓	✓	✓	✓	✓
Experimental	✓	✓	✓	✓	✓	✓	✓	✓
Student Variety	✓	✓	✓	✓	✓	✓	✓	✓
Peers / Network	✓	✓	✓	✓	✓	✓	✓	✓
Personal Equipment	✓	✓	✓	✓	✓	✓	✓	✓
Professional Development	✓	✓	✓	✓	✓	✓	✓	✓
Experience	✓	✓	✓	✓	✓	✓	✓	✓
Online interaction	✓	✓	✓	✓	✓	✓	✓	✓
Feedback	✓	✓	✓	✓	✓	✓	✓	✓
Self-Reflection	✓	✓	✓	✓	✓	✓	✓	✓
Student limitations	✓	✓	✓	✓	✓	✓	✓	✓
Canvas management	✓	✓	✓	✓	✓	✓	✓	✓
Building relationships	✓	✓	✓	✓	✓	✓	✓	✓
Structure	✓	✓	✓		✓	✓	✓	✓
Empathy for students	✓	✓	✓	✓	✓	✓	✓	
Attendance/Participation is an issue	✓	✓		✓	✓	✓	✓	✓
Low Effort towards PACs	✓	✓		✓	✓	✓	✓	
Physical Environment	✓	✓		✓	✓		✓	✓
Language Barrier					✓		✓	✓

Table 13

Definitions of Variables

Variable	Definition	Sample quote
Resources	Digital access to people, information, or equipment.	“Different online resources allow me to...”
Experimental	Willingness to apply digital media.	“I might give them the option to write a paper...”
Student Variety	Addressing diverse student population and class culture.	“I had students who wanted to train for half marathons...”
Peers/Network	Influence of fellow GTAs, faculty members, and friends.	“I would like to know what kinds of specific media other instructors have used...”
Personal Equipment	Use of personal equipment.	“Like, for my Apple Watch, I do use it for when I exercise...”
Professional Development	Impact of professional development workshops and opportunities.	“I was already aware of the content, but it was a nice refresher.”
Experience	Prior teaching experience.	“Through my master’s program...”
Online interaction	Communication via online platforms.	“I changed the language of the discussion posts to incorporate...”
Feedback	Interaction between student and teacher via feedback	“I asked, ‘did you watch the video?’”
Self-Reflection	Recounting experiences throughout the semester.	“I put some thought into it as the class progressed...”
Student limitations	Adapting to student physical, cognitive, and environmental limitations.	“One of my students is actually coming back from an injury...”
Canvas management	Managing Canvas to specific needs.	“It’s kind of a beast.”
Building Relationships	Developing trust and respect between instructor and students	“I think building trust or rapport is important...”
Structure	Managing the structure of the PAC.	“Each class, we will have a cool down. I use music for all activities...”
Empathy for students	Understanding student perspectives.	“I’ve been in their shoes...”
Attendance /Participation is an issue	Addressing lack of student attendance or participation.	“I mean attendance could have been better...”
Low Effort towards PACs	Prioritizing PAC compared to other responsibilities	“It was a physical activity class, not a three-credit class.”
Physical Environment	Adapting to the physical environment.	“It’s a little challenging when you’re just in a big gym with no computer...”
Language Barrier	English as a learning language	“If I need to demonstrate, I need to learn a second language that I need to remember...”

Research Question Two

The second research question explored the attitudes and beliefs toward the implementation of digital media in PACs. Attitudes and beliefs of educators could be inferred from what participants said, intended, and did (Ottenbreit-Leftwich et al., 2010; Rokeach, 1968). The participants' personal interpretations and ideas about the use of digital media resulted in a multitude of personalities and vernaculars. For example, a common perception of digital media's role in PACs was as a supplemental tool. The term 'supplemental' was not used by any participant; rather, the researcher clustered common perceptions, such as 'beneficial,' 'convenient,' and 'helpful' to consolidate common attitudes and beliefs of digital media in PACs, resulting in the term 'supplemental.'

Overall, participants had favorable attitudes toward digital media in PACs with minimal neutral and negative perceptions of digital media. Based on the interpreted results, four overarching attitudes and beliefs were synthesized to represent how participants perceived the use of digital media in PACs. First, digital media was considered an engaging tool to enhance the PAC's interactivity among the instructor, the content, and the students. All participants showed positive attitudes toward the use of digital media as an engaging tool. Second, digital media was considered a supplemental tool for participants to enhance their PAC curriculum. All participants showed positive attitudes toward the use of digital media as a supplemental tool, which meant instructors found digital media to be helpful but not a central role to teaching a PAC. Third, digital media was perceived as a tool that had its time and place within PACs. Most participants either showed a neutral attitude toward digital media, suggesting digital media was not

always necessary and therefore neither positive nor negative. Additionally, the perception of digital media had a time and place based on personal beliefs that technology (e.g., cellphones) could have a negative impact on the teaching and learning experience for students in a PAC. For example, using personal phones was considered potentially distracting if used too often. Most participants showed either a neutral or negative attitude and belief toward digital media at a societal level rather than toward PACs. Lastly, digital media was considered a tool in which participants showed interest or intent to use in the future but lacked the knowledge or preparation to implement in PACs. Most participants showed a willingness to learn more about digital media as a pedagogical tool, representing a positive attitude and belief toward the benefits of digital media. Table 14 shows four common perceptions found across cases. Table 15 provides interpreted definitions and sample quotes.

Table 14

Physical Activity Instructor Attitudes and Beliefs Toward the Implementation of Digital Media in Physical Activity Courses

Attitudes and Beliefs	Participant							
	A	B	C	D	E	F	G	H
(+) Digital Media is an Engaging Tool	✓	✓	✓	✓	✓	✓	✓	✓
(+) Digital Media is a Supplemental Tool	✓	✓	✓	✓	✓	✓	✓	✓
(N, -) Digital Media has it's Time and Place	✓		✓	✓	✓	✓	✓	
(N, +) Willing to Learn more about Digital Media	✓	✓	✓		✓	✓	✓	✓

Note. (+) = positive attitudes, (N) = neutral attitudes, (-) = negative attitudes

Table 15

Definitions of Attitudes and Beliefs

Attitudes and Beliefs	Definition	Sample quotes
Digital Media is an Engaging Tool	Promoting an active learning environment for students to optimally learn.	“I can see they have a reaction to the videos.” “Some of the topics at the end are more, I’m just going to call them kind of fun topics that are relatable but not necessarily pertinent what they’re trying to do as an engaging in physical activity.”
Digital Media is a Supplemental Tool	Providing additional mechanism to enhance both teaching and learning.	“[Digital media] definitely could be much more beneficial because they seem like they’re going to be more willing to reach out and use those resources.” “Some videos helped me a lot.”
Digital Media has it's Time and Place	Contextual variables and attitudes determine the use of digital media.	“They wrote [an assessment] down on paper. I thought about doing it online, but I felt like that would consume a little more class time.” “I have a bad connotation towards phones in my head right now because I always think they're so distracting.”
Willing to Learn more about Digital Media	Valuing digital media as a resource but lacks pedagogical knowledge.	“I’m trying to even come out of my comfort area of not really using technology extensively but doing so because like the generation that are the students...” “I’m as neophyte as you can get but I’m super intrigued by it.”

Research Question Three

The third research question examined what pedagogical practices of digital media were used by physical activity instructors. Answering research question three included a culmination of all technology journals, document collections, interviews, and class observations. During interviews, the researcher requested collected documents. Table 16 provides a list of digital media use based on collected data. Overall, all participants used Canvas for announcements, uploading their course syllabus, and giving/grading assignments. All participants used audio/video media including YouTube. More descriptions about the pedagogical practices are found in the individual results and the recurrent themes sections.

Table 16

Pedagogical Practices of Digital Media Use by Physical Activity Instructors

Digital Media Use	Participant							
	A	B	C	D	E	F	G	H
Canvas								
Announcements	✓	✓	✓	✓	✓	✓	✓	✓
Syllabus	✓	✓	✓	✓	✓	✓	✓	✓
Modules	✓		✓			✓	✓	✓
Discussions	✓				✓	✓		✓
Assignments	✓	✓	✓	✓	✓	✓	✓	✓
Files	✓	✓	✓	✓			✓	✓
Attendance	✓	✓						✓
Course Evaluations	✓			✓			✓	
Quizzes	✓							
People	✓	✓	✓			✓	✓	
Customized Rubrics	✓	✓			✓	✓		
Microsoft Outlook	✓		✓	✓	✓		✓	✓
Microsoft PowerPoint	✓				✓	✓		
Mobile Tablets or Phone	✓		✓	✓	✓	✓		✓
Audio/Video	✓	✓	✓	✓	✓	✓	✓	✓
YouTube	✓	✓	✓	✓	✓	✓	✓	✓
Voiceover	✓		✓		✓	✓		
Music	✓			✓	✓		✓	
Social Media								✓
Mobile Apps			✓			✓		✓
Wearable Devices			✓			✓		
Campus Equipment	✓	✓		✓	✓		✓	
SMART Goals	✓		✓	✓	✓	✓		✓

The following section provides an in-depth description of the variables, perceptions, and uses of digital media by each participant.

Participants

Participant A

As a first semester GTA, Participant A had no prior experience teaching PACs. Participant A taught three sections of PACs: two Bowling PACs and one Activities for Stress Management PAC. Additionally, Participant A was an adjunct instructor for an online course at a separate university. The Bowling PAC was located off-campus at a nearby bowling alley and the Activities for Stress Management PAC was located on campus in a small gymnasium. Because Participant A was new to the university, digital resources (e.g., course syllabus and lesson plans) were provided by fellow GTAs who had taught the courses in prior semesters. However, due to the ambiguity and vast nature of a course like Activities for Stress Management PAC, Participant A wanted to teach the “holistic” and “larger picture” for students. Ultimately, Participant A wanted to connect and network with faculty from different disciplines, which required digital communication. From the first interview, Participant A planned on inviting a faculty member who specialized in diet and nutrition to guest lecture on the connection and importance of diet and its impact on stress. After multiple exchanges via email, Participant A was finally able to secure the guest lecturer for the latter end of the semester. During the third semester, Participant A reflected on the success of connecting with a faculty member:

Some students have found that they really liked (having a guest lecturer). and when we had a dietician on campus come into class, a lot of people took a lot of

good things away from it... Just knowing they had those services available. And that was something I found in my studies, just having access to organizations that know about mental illness and just a voice to even just listen.

Participant A prioritized the quality of the student experience and deemed putting students first and not “rob the students of an experience.” Therefore, implementing digital media naturally became a compulsory resource because it’s “always at our fingertips” and was considered the “livelihood” in education communication. The livelihood of digital communication was seen in both PACs and non-PACs. For example, Participant A was coincidentally an adjunct instructor for an online course for a separate university. During the second interview, Participant A mentioned the role of voiceovers in PowerPoints to express important points in online lectures, which inspired Participant A to implement voiceover PowerPoints in the Activities of Stress Management PAC. In the third interview, Participant A noted the same practice used in an online sport finance course was also used in an in-person PAC, proudly stating, “I’m actually incorporating technology for the presentation of learning, having them voice over a PowerPoint and just talking about things they liked.” Additionally, Participant A valued voiceovers via mindfulness practices by incorporating guided meditations. Noted in technology journals, an observation, and interviews, Participant A used guided meditation found from Headspace or YouTube. As early as the first interview, Participant A reflected on using guided meditations from online resources, stating it was easier to find “somebody else that has those recordings” rather than developing new content.

Removing digital media became an equal and valuable opportunity to enhance the student experience. During the first interview, Participant A mentioned that students could sometimes be too connected to digital media. In fact, by the second interview, Participant A journaled and commented on removing digital media in the Bowling PAC. Participant A reflected on the removal of the scoring monitors for the Bowling PACs:

I don't think they loved keeping track, but [at first] they did not want to do it, [but] what was awesome was they were actually super accurate and learned to appreciate that, 'okay, like not everything is at my mantle and like there was a time when they didn't have the electronic scoring.' So, that part was memorable.

In summary, Participant A found that as the semester progressed, it took “less and less time” to know where the resources were located and “how to conduct the class” thanks to experimenting with digital media resources. From looking for online videos to making weather-issued announcements, digital media was both a time-consuming task as well as a convenient resource for Participant A.

Participant B

As a first semester GTA, Participant B had prior experience teaching Basketball PACs at a previous university. Participant B taught two courses: a Basketball PAC and a coaching and officiating course. The Basketball PAC was located on campus in an arena shared with the athletic department. The coaching and officiating course and the Basketball PAC were 10 minutes apart. Based on observations, Participant B would use a personal laptop to check attendance while students played basketball. During the third interview, Participant B commented on checking attendance while students played basketball: “Halfway through the class I'll look through who's there and just boom, boom,

boom”; within seconds, Participant B could account for who was in class. However, in the second interview, Participant B noted the difficulty of using Canvas “because the attendance tab doesn’t transfer into the gradebook.” Notably, Participant B had to create a Canvas assignment for each attendance check because the Canvas Attendance page would not count in the final grade.

With prior experience teaching and playing basketball, Participant B considered Basketball PAC as an opportunity for students to connect socially. Based on the first observation and interview, digital media seemed rather limited. Respectfully, there was not much of a need for digital media other than the regular Canvas attendance check, occasional announcement, and single syllabus upload. From the beginning of the semester, Participant B commented on the simplicity of a PAC culture:

I think they are a good escape and to meet students... just for the social aspect of it. Less of what you’re going to learn but more for a different environment that being in a classroom where you feel like you almost can’t talk. And if you’re talking, it needs to be referencing the subject. I’ve already seen that personally in my course day one.

Participant B prioritized an inclusive classroom culture, which was essential because 4 out of 18 students were enrolled in a state-wide pilot program where students with intellectual and developmental disabilities could enroll in higher educational courses. The WIN Program (pseudonym) sent an email early in the semester to inform instructors ahead of time about the WIN students and attached a PowerPoint that included universal design learning strategies for students with intellectual and developmental disabilities. The PowerPoint provided videos and audio files to explain the definition of

universal design learning as well as the importance of developing an inclusive classroom. During the second interview, Participant B reflected on the inclusive class culture between WIN students and their peers:

It's been great. Their [WIN students] participation and engagement with the class has really gone up... [All students] are always welcoming and accepting... They are accepting and it's pretty nice to have the [WIN] students... They're always playing, and people are always accepting of them...and like, I think the other students like seeing them get better and understanding the game.

Instructing such a diverse student population also came with challenges. First, Participant B consistently made sure not to “exclude” WIN students by always “making sure that they're involved” in some way. For example, the Basketball PAC used the same basketball court as the athletic department, which had a functional Daktronics scoreboard. Based on an observation, interviews, and technology journals, the scoreboard was on a table on the sideline midcourt; the students would rotate and use the scoreboard while a five-on-five game would play. During the second interview, Participant B mentioned that engagement went “through the roof” when the class began incorporating the scoreboard because it gave students additional roles within the PAC.

In summary, implementing the scoreboard impacted Participant B's teaching experience the most. During the second interview, Participant B suggested that incorporating a scoreboard differentiated a basketball PAC to regular pickup game by “using the clock to your advantage.” With attendance issues and a desire for student engagement, Participant B considered there's “some untapped potential” in the use of digital media, especially with a diverse student population and the need for inclusive

practices. After watching a WIN student use a video camera for feedback, Participant B reflected on future uses of digital media in PACs, stating, “Next semester I think I’m going to have them partner up one day, use their cell phones and do that, watch their forms, maybe like write something about it.”

Participant C

Participant C taught one Fitness and Conditioning PAC and three Motor Learning Lab sections. As a first semester GTA, Participant C had prior experience teaching PACs from a previous university but had never taught an online PAC. Because Participant B was new to the university, resources were provided by a fellow GTA who had taught the same online PAC from prior semesters. Fortunately, Participant C shared an office with the same GTA who taught the same PAC but a different section, which gave them the opportunity to intermittently interact and communicate with one another. During the first interview, Participant C commented on the importance of GTAs exchanging advice and resources as well as reflected on the professional development workshops all participants attended:

So immediately I thought that [the workshops were] the best week that I’ve been to all of my years being in or out of a university... It gave me a general understanding to get my feet on the ground...got more into specifics like how to manage a classroom and gave me different perspective, not only like from the faculty here but also from current students, which I always appreciate because there’s always different ways of seeing things. So, if anyone can give me their experience of perspective, it just adds more to my toolbox and things that I definitely will be using.

Participant C mentioned a few important findings about the professional development workshops. First, the professional development workshops provided a general overview of the university that included classroom management and administrative components necessary to teach at a university (i.e., Title IX and FERPA). Second, Participant C mentioned how the workshop was led by fellow GTAs from different departments. Having the perspectives and experiences from different GTAs helped guide Participant C on ways to navigate the semester moving forward. Lastly, Participant C noted a “toolbox” that served as an appropriate metaphor to gather resources and ideas that could also be used in future practices, both digitally, non-digitally, and for both PACs as well as non-PACs.

Halfway through the semester, Participant C experienced a common occurrence found across instructors who taught online PACs, which was student communication. During the second interview, Participant C noted:

In terms of communication, I feel like that’s even more important because I can’t actually observe them in the case that they do need or have any questions. That’s been one challenge that I’ve experienced so far...I guess at that point all you can do is wait to see if a student has a question...I feel like more oftentimes than not, it’s closer when an assignment is due.

Participant C communicated best with students via Canvas, which stressed weekly announcements and preventative actions:

I usually send out an announcement every Monday, just as a reminder. ‘Hey, you’ve got an assignment that’s due this week...if there’s anything that’s unclear or if they have any questions, just send me an email’... I want it to be a little bit

more preventative as opposed to like kind of remedy whatever's already happened.

Participant C prioritized student growth and reflection with a holistic “mind, body, soul” approach to meet individual needs. Having a “handful” of students living off campus, Participant C focused on students using their personal environment and available digital resources to participate in weekly class assignments. Assignments such as measuring one’s heart rate and logging exercises primarily used “a quantitative collection” by using apps to measure data as well as a student reflection component. Students were able to choose which apps best suited their needs and personal equipment. During all three interviews, Participant C provided the researcher with a Canvas tutorial to show embedded instructional videos to concepts such as SMART goals, checking heart rate, and blood pressure. Retrieved from a fellow GTA, Participant C used one SMART goal video to introduce how student growth could be measured. However, during the second interview, Participant C noted that students wanted to watch more than one video to have a better in-depth understanding of SMART goals:

If I had the opportunity to teach this course again, I would probably provide more than one link so more than one video just so they can get different interpretations of SMART goal so that they feel like they’re just not having to solely rely on one [video].

Notably, the need for examples was an essential component for an online class. During the third interview, Participant C noted, “It helps with the giving of examples because I’m like, okay, well yeah, that’s a specific learning situation or living situation that I don’t think someone would just think of on the top of their head.”

Assigning individual goals helped students setup “their regular schedule” regarding fitness and conditioning. During the second interview, Participant C shared how assigning individual growth benefited the variety of students:

I think that it's encouraged each student to cater their workouts to what their personal bodies tell them. So, I've had a student telling me that at first, he thought, you know, the way to gain muscle mass was to lift weights. And then he realized that when he was checking his heart rate during like a running exercise, he didn't have to go as fast as someone else in the rec center. His heart rate was already telling him that he was working pretty hard. So, he then said, “I'm going to take a step back from like looking at everybody else and instead I'm just gonna keep listening to what my body tells me.” I was like, “Oh, that's, that's great.”

In summary, Participant C used individual goals to encourage student growth. Similar to other online instructors, “the challenge of not being able to see (students) face to face” required flexibility and an open mind. Participant C would continue “being exposed to different perspective on how to approach or display learning” and use digital media primarily as a communication tool to inform and clarify individual inquiries for student growth.

Participant D

Participant D taught one Swimming PAC, two Exercise Physiology Lab sections, and an Exercise Assessment Lab. As a third semester GTA, Participant D had prior experience teaching a Golf PAC but had never taught a Swimming PAC. The Swimming PAC was located in the campus recreation center shared with the athletic department's swimming team. Participant D was familiar with the pool because Participant D was also

an assistant coach for the swimming team. In fact, Participant D has been a swimmer since the age of seven and had been a middle school swim coach for five years.

Participant D reflected on teaching college students who were *not* collegiate athletes and having a similar vernacular with the students:

Being where I've come from swimming wise, I've only coached people who previously knew how to swim or little kids. So, to me it was a really interesting change to see people my own age or just under my own age, having a hard time swimming or like not being able to swim. But that being said, it was really fun because they were like similar to me, so I could, just say about like how to move your body and like drills that would like make them think of like things to do, these drills, like they're similar in the way that I would think about them because we grew up similar.

Participant D prioritized student enjoyment in class and considered a Swimming PAC to be a “difficult” class to teach. Participant D could not do anything too “detailed specific” because the importance of learning the basics included keeping students motivated to swim for an entire 50 minutes. Participant D empathized with being in a swimming pool for extended periods of time and the uncomfortable feelings students might have. Participant D commented on the importance of motivation and student enjoyment:

I love swimming. It's my favorite thing in the whole world...I told them I want them to enjoy it as much as I do. Making it fun, being positive constantly in that pool is a huge thing that I have to do. Staying positive, always reminding them,

‘look where you were last week.’ ...Keep them positive and hopefully get them excited to swim more.

In part to keeping students both engaged and motivated, Participant D incorporated videos and cameras as supplemental tools to teaching within the fourth week of the semester. Specifically, when Participant D’s “verbal communication kind of hit a lull” and had “a hard time getting the point across,” Participant D used videos to demonstrate technique specific content. Based on the technology journal, Participant D used YouTube videos to show what a professional flip turn looked like, mentioning student skill improved and the videos were “noticeably helpful.”

As an assistant coach for the university’s swim team, Participant D was fortunate to have access to underwater cameras that were installed with a video delay for performance feedback. Participant D also had access to a variety of video content thanks to the swimming coaches. Footage of both Olympians and college athletes, Participant D was able to choose videos that best suited students who needed to practice remedial drills. During the second interview, Participant D explained the differences of choosing an appropriate video to present to students:

Sometimes I don’t use Olympians because they’re too good at what they’re doing. So, it’s like, I want to do more of a mediocre college swimmer where (they) really emphasize this part in [a stroke] rather than an Olympian, where it might be a little more difficult to see cause everything is so perfect.

In summary, Participant D found value in digital media in only certain situations. Using underwater cameras was only helpful during drills and not during cardiovascular lessons. In particular, Participant D cautioned that digital media could get “more in the

way” if students were having trouble with remedial tasks. In the third interview, Participant D reflected on when digital media such as video-based performances (i.e., delayed cameras) should be incorporated as a pedagogical tool:

I think there's an initial stage of novice groups that video and external feedback isn't going to be helpful because it's a really proprioceptive sport. So, it's very [much about] where your body is in relation to itself. So, I think once you get past that novice of being able to at least like feel yourself in the water without feeling like your heart's going to explode. So, a little bit for that cardiovascular phase with just like getting comfortable putting your face in the water. I think after that then from there on is when videos are helpful and the videos or taking videos of other people.

Participant E

Participant E taught two sections of an Activities for Stress Management PAC as well as a Planning, Assessment, and Instruction in Physical Education lab. As a fourth semester GTA, Participant E had been consecutively teaching the same PAC every semester. The Activities for Stress Management PAC was located on campus in a small gymnasium that had an available flat screen television as well as speakers for music. As one of the more veteran PAC instructors, Participant E was familiar with the course content and had developed a structured curriculum for the Activities for Stress Management PAC. Based on the technology journals, interviews, and observations, Participant E's structure was finely tuned in Canvas with organized announcements, available syllabus, modules, discussions, and assignments. During the second interview, Participant E commented on teaching the same class multiple times:

I have so many ideas because I have taught [so] many times...I know this class and I know the students [and] I have specific lesson plan ideas [so] I just make bullet [points of what] I am going to do in the class [shows schedule and points at badminton lesson] like working on grip [in badminton]...I think because I taught so many times, I'm very familiar with the content.

As noted in interviews, observations, and technology journals, Participant E consistently used a variety of digital media to encourage a positive environment between students and to enhance the student teaching and learning experience. First, Participant E incorporated content-related PowerPoint lectures at the beginning of class. The PowerPoints had been used in prior semesters but Participant E still reviewed each PowerPoint before class to make any minor edits to the presentation. Second, when new information was presented to students, Participant E would include supplemental videos. Participant E considered videos to be the most "powerful" pedagogical tool. In fact, in all three technology journals, videos were considered the most viable tool: "it's an easy way for students to understand content." However, good videos were not always easily obtained. Participant E noted in the first technology journal the challenge of finding a "GOOD video for the class," defining good as "relevant with the topic, accurate, and short." Third, Participant E always made an effort to play music to create "a positive or active learning environment" and considered music "helpful" for student engagement. Lastly, Participant E incorporated a cooldown activity where students either stretched or participated in guided meditation by using the same five-minute video found on YouTube. Participant E noted in the third technology journal and the third interview that

students enjoyed the meditation video and would continue to use guided meditation videos in future Activities for Stress Management PACs.

In summary, Participant E considered digital media as an essential and “powerful” tool to enhance their teaching ability and, as a result, enhanced student learning outcomes. Participant E considered video as the most powerful tool because it helped “teach the class” specific content “and it’s just quick and easy.” Without digital media, Participant E would have struggled to deliver content while keeping student engaged. For example, during the third interview, Participant E commented on the hypothetical situation of not having access to digital media: “I could send a video or post a video on Canvas. But the [in-person] discussions are really important. It's a reflection, you know? I [wouldn't be able to] do that. I could hand out slides and just post a video, but students won't watch the video.”

Participant F

Participant F taught one section of an online Fitness and Conditioning PAC and was a teaching assistant for a graduate-level Introduction to Research in Sports course. As a third semester GTA, Participant F had been teaching online PACs every semester. Based on interviews and document collection, Participant F had the most experience teaching an online PAC. In fact, most online resources used by other online PAC instructors came from Participant F’s curriculum development. Prior experiences with teaching online PACs had shown Participant F that content for students needed a certain degree of structure while remaining flexible due to the online student population. During the first interview, Participant F reflected on the restructuring of online PAC curriculum from previous semesters:

I was too narrow on my scope and focus of the class. I had individuals who wanted to train for half marathons, and I had individuals who wanted to try and get themselves to walk twice a week...I knew I had to revamp the whole thing. I was too naive in my own conceptualization of the course.

Participant F prioritized social connection and access to resources for the online PAC. As a social psychology major, Participant F talked about experimenting with social connection by forming discussion-based assignments where students conversed with each other about weekly themes via Canvas discussions. Participant F wanted the students to discuss with each other, whereas Participant F would privately comment on each student's posts to "support them to hopefully grow." During the second interview, Participant F explained the rationale for promoting online social interaction:

I'm trying to delegate (one on one social interaction) for them to experience it themselves. Cause I think the world we live in now is becoming so much more digitized that you need to figure out ways and methods to interact and connect with people digitally. And I think, I haven't overtly expressed that in my class, but that's the reason I have [discussions]. That connectedness to something we need and like can it be done digitally. I don't know if there's evidence to back that up, but the idea of all these discussion groups are there for them to interact and support one another where I try to not be as involved in that, but on their discussion posts, I'll deliberately comment on theirs where other people can't see.

Participant F's discussions and assignments provided resources that aimed to "provoke critical thinking." From online articles, instructional videos, to National Public Radio soundbites, Participant F gave students the autonomy to incorporate meaningful

resources students could relate to in a “digestible” manner. During the second interview, Participant F commented on the desire to provoke critical thinking through digital resources while avoiding the act of being too controlling: “I like the questions to provoke critical thinking [but] I don’t want to be controlling. I’m really trying to avoid control because I think we live in an educational society that controls everybody, like were all little robots.” Participant F continued,

I think that if I can provide a little nuggets and then also provide them with links that they can go back to, like the resources are there. And that’s the way I look at it...Just based on feedback from previous classes and saying, they really appreciated like how it was quick, easy and digestible, so that was kind of reassuring.

In summary, Participant F was ambitious to experiment with digital media that would develop feasible and convenient content and feedback throughout the semester. For example, the final assignment in the class was to produce a voice-over PowerPoint that reflected on class as well as individual goals. Based on technology journals and interviews, Participant F provided an instructional video in case students did not know how to produce a video but made sure students always had “autonomy.” Additionally, Participant F’s goal was to develop empathy among students because “it puts you at ease to know you’re not alone in anything in life.” During the third interview, Participant F shared what students would hopefully take away with a one-credit PAC focused on developing, implementing, and reflection on personal goals and growth:

That's the core I would like for people to learn is, no matter what goal you have, physical activity goals are inevitably you're gonna run into things that are

obstacles, right? And so, I think [about that with] anything in life though, this idea of, not necessarily being resilient but being adaptable. That's one thing I always follow up with [students] is you're going to run into things. How do you respond? You know, the idea that you can't control everything. You control how you respond, which is cliché, but the idea of now that you worked through it, you express it, you talked with the others, what's next?

Participant G

Participant G taught one section of a Self-Defense PAC and was a teaching assistant for a graduate-level Introduction to Research in Sport course. As a sixth semester GTA, Participant G had been teaching the same Self-Defense PAC for five semesters with one semester experience teaching a Soccer PAC. The Self-Defense PAC was located on campus in a small gymnasium that had an available flat screen television as well as speakers for music. Based on the first interview, Participant G had prior experience in martial arts but teaching a Self-Defense PAC was a new topic for Participant G. Like all participants, Participant G acquired digital resources from fellow GTAs such as syllabi and lesson plans. During the second interview, Participant G commented on the restructuring of recycled resources:

I pretty much got everything [resources] cause I had zero knowledge about self-defense. Even though I practiced [martial arts] before, the syllabus and all the course materials and content, even the quizzes and final exam, pretty much everything, I followed the exact same way that the previous instructor did. But as the semesters go by, I changed it a little and revised it to my specific preferences... So it has been changed a little by little each semester.

Participant G prioritized addressing student needs as well as giving student autonomy. Addressing student needs stemmed from recognizing that some students might be “very enthusiastic about learning self-defense skills, but some might not,” resulting in Participant G trying to find new ways of “running the class more energetically or effectively,” which ended up being a “key factor” in the Self-Defense PAC. Autonomy, therefore, became Participant G’s primary pedagogical goal to keep students motivated and was the ultimate way in modifying recycled resources specific to Participant G. Participant G commented on giving students more autonomy on their final project:

I never gave them autonomy [to] come up with their own ideas or their skills for the final projects. But I realized that they might have some better ideas and they may be kind of maybe bored of just watching and demonstrating those videos that I provided. So, I gave them the option to choose [from the provided videos] or not. And they can come up with better ideas if they have one. So that's the only change that I think that I've made.

Deciding to give students autonomy was the result of student feedback, which was a common response among the experienced instructors. For example, Participant G provided students with self-defense videos that showed how to use a cellphone as a weapon. However, Participant G was informed by students that “most [students] believe that they would rather just be punched [rather than] breaking their iPhone.” Participant G also experimented with autonomy by giving students options to play music during class. With access to a speaker, students had the option to play their own music during class, which, according to all interviews, observations, and technology journals, was the most

essential digital media pedagogical tool for Participant G. However, Participant G noted this particular semester was different from previous semesters as students did not seem interested in playing their music. Reluctantly, Participant G always chose to play music via YouTube channels from a personal laptop. Overall, Participant G commented on the desire for student autonomy but lack of pedagogical knowledge:

I tried to give as much autonomy as I can. But I'm not sure how I can. So, I try to let them decide the final projects, or the music to listen during the class, which didn't go well... So, I'm [always] thinking of like getting more autonomy to them.

In summary, Participant G's last semester teaching a PAC showcased the continual desire for student engagement and response to student evaluation and feedback. Next semester, Participant G will be instructing upper-level courses such as sport finance. As an international student, Participant G was grateful to teach PACs because it introduced how to "communicate with the students in a friendly environment." Furthermore, Participant G noted how using digital media was an important tool not only for GTAs to use but for the full-time faculty advisers as well, stating, "I think that [digital media is] especially good for the [fulltime] professors, not just the [GTA] instructors, because instructors usually chat [with] each other, but the professors rarely discuss about their teaching and techniques."

Participant H

Participant H taught an online Walking and Jogging PAC as well as a Self-Defense PAC. As a first semester GTA, Participant H had no prior experience teaching PACs. With a master's degree in educational technology, Participant H was familiar with online curriculum development but had never been exposed to an online PAC. During

the second interview, Participant H commented on teaching an online Walking and Jogging PAC:

I had already had the experience of programming online courses...[but] this [PAC] is kind of a little weird context. How can I teach jogging and walking online? But it's been really smooth because I learned this kind of thing in my master's program.

As an international student, Participant H experienced both benefits and barriers to teaching online. During the second interview, Participant H commented on the communicative advantages of teaching an online course as well as the struggle to verify whether or not the information was being properly communicated:

[When] I'm teaching online classes, sometimes I feel clearer because I'm writing [and] I have time to edit. I can [also receive feedback] from my peers like you [the researcher], so I have time to give clearer instruction through written instruction. Sometimes I feel better [that way], but as an instructor, I really want to see the progress of the student and how the student is [performing, and] how students do it. And then we can converse.

Obviously, Canvas was used as the primary communication tool for the online Walking and Jogging PAC. Based on the interviews and technology journals, Participant H used Canvas to routinely send announcements; provided a syllabus; incorporated thematic modules, discussions, assignments; and provided content-related links for students. Participant H provided introductory videos on goal settings for the Walking and Jogging PAC. The same video was used by fellow GTAs, which briefly introduced SMART goals. Based on interviews and technology journals, Participant H incorporated

communication with students and gave feedback and words of encouragement on Canvas discussion boards. By the end of the semester, Participant H felt more comfortable teaching but desired for a better way to promote student dialog that went beyond just saying to students, “Keep it up!”

Participant H was also an instructor for a Self-Defense PAC, which had greater pedagogical familiarity. With over 10 years of experience as a martial arts instructor, Participant H experienced the difference between teaching as a business professional compared to an educational one-credit PAC. Participant H commented on the PAC curriculum content:

We have limited time [with] only one semester [and] I cannot teach all the levels of [martial art]. But at least I want my students to understand what [the martial art] is and where [the martial art] is from and then what we focus in [the martial art]. That's why when I teach the basic moves, I always focus on the attitude, respect, discipline, culture, and language.

Like all participants, Participant H recognized the importance of keeping students engaged during class. In fact, Participant H noted that repeatedly teaching Self-Defense basics was becoming boring for students, which is why Participant H would “bring a little bit of advanced level” to excite students. Participant H commented that students “are like little kids, they are happy. 'Oh, spinning is so cool!’”

As a PAC instructor for both online and in-person PACs, Participant H used digital media both as an engagement resource and a feedback tool. For example, Participant H noted in technology journals and interviews that the Self-Defense students received a variety of videos on martial arts techniques. Using a flipped learning

approach, Participant H uploaded videos no longer than four minutes that students could watch before coming to class. Participant H mentioned it felt good to come to class and see students practicing the moves before class began. Participant H's proudest digital media example involved recording students performing their martial arts routine at the end of the semester. During the third interview, Participant H reflected on recording video performances, stating, "When I talked about [uploading the video performances] they were really excited. 'Oh, I'm going to see what I did.' So, it's new to them." Participant H expressed that one student wanted to show their kids, suggesting non-traditional students also valued video feedback on their performances. Participant H continued, "So technology is kind of really big portion" of the class engagement.

Participant H was introduced to a variety of new PAC experiences and used digital media where it best fit. Participant H found video to be essential for both online and in-person PACs. As previously mentioned, Participant H retrieved digital resources such as video links, syllabi, and content from peers. However, Participant H was the only participant to mention the use of social media as a resource tool. Based on the technology journal as well as the third interview, Participant H used social media platforms such as Instagram to connect with fellow martial arts instructors who would upload drill examples. Participant H noted, "I got many ideas from his postings."

Similar to all participants, teaching a PAC was viewed as a holistic approach to student success, not only focusing on the physical benefits but the cognitive and social benefits as well. However, Participant H described the difficulties of teaching PACs for the first time. During the third interview, Participant H noted:

As a brand-new student, I feel like structure is the key word to me... I can modify a little bit...but at the same time I need to keep the structure...

Sometimes I can make to them feel (that they've improved), but sometimes I feel like I made this harder.

Recurrent Themes

Based on individual results, four recurrent themes emerged from the lived experiences across all participants: (a) experimenting with student engagement, (b) finding meaningful resources, (c) learning Canvas, and (d) valuing video and audio media. As previously mentioned, all themes were interpreted as an overarching pattern found across participants throughout the entirety of the data collection and were supported based on interviews, document collection, course observations, and technology journals. Specific examples for each recurrent theme supported the hermeneutic interpretation of individual experiences that simultaneously represented all experiences (Smith et al., 2012; Sparkes & Smith, 2013). As Smith et al. (2012) suggested, extracted data should be interpreted and supported with direct quotes that could be cross-referenced across cases. In other words, the recurrent themes provided direct evidence of participants' lived experiences that could be checked on the generality of the interpreted definitions mentioned in the first section of this chapter.

Experiment with Student Engagement

All participants used digital media as an experimental tool to try to engage students in PAC content. Regardless of teaching experience, most participants displayed empathetic traits to keep students attentive and engaged. For instance, Participants A, B, D, E, F, and G expressed concern about student attendance or participation. Digital

media was therefore used as a way to hopefully encourage students to attend and participate in activities. For example, Participant B expressed the most concern about attendance and contributed the Daktronics scoreboard as the catalyst for an increase in student motivation and engagement. As previously mentioned, Participant B suggested attendance and participation “went through the roof” when the class began using the scoreboard. Similar to all participants, it was important for Participant B to engage students by building relationships because attendance was continuously a random variable as the semester progressed. During the third interview, Participant B commented: “Attendance is kind of the only thing that I thought caught me off guard, but just how some students still don't come, even though you tell them that they need to come and no emails, no communication, just like I'm not coming.” Participant B continued:

You want to make sure they're involved so you want to make sure they're having fun or if they think it's meaningful [and that] they don't think it's dumb... So yeah, I would just say it's how connected they are to the class and it and it's like (snap, snap, snap) every minute. It's always adjusting. It's always fluctuating. So, it's tough cause I think that's what we try, even if I'm in class lecturing, I want to make sure that they're engaged. I think competitive, competitiveness, helps engagement.

Student engagement was also considered an indication that the content was valuable to students. Participants A, B, C, D, E, F, and G implemented digital media and looked for indications of student engagement. For instance, Participant E began experimenting with digital media to create in-class discussions by showing videos. During the second interview, Participant E mentioned how videos could be used to

encourage student engagement, stating, “I engage with the class. I share with students, and I have students share their additional information beyond this video.” Participant E continued, “I can see they have a reaction to the videos. They laugh or they look at the screen and they engage in discussion... I’ll observe students whether they are looking at their phone [or not].”

All participants did not want students to be bored, whether in their PAC or in the additional courses taught by GTAs. Therefore, receiving feedback about ‘what works’ versus ‘what doesn’t work’ was an important component to experimenting with digital media. Just as Participant E considered successful engagement via students paying attention to a video, other participants continuously asked for student feedback throughout the semester. For instance, Participant C wanted to know if a weekly theme was a good idea for student engagement, stating:

Students specifically referred to the fact that it just helps them focus on whatever sort of theme that each week has as opposed to feeling like they have to encompass everything... A lot of students are actually pretty honest with what works and what doesn’t work.

All participants experimented with content materials to engage students within PACs. For example, Participant H created a vocabulary list of martial arts terms but did not provide any sort of scaffolding technique to teaching the various vocabulary phrases. Participant H reflected on teaching a foreign language with martial arts terminology and how to approach the same content in the future: “Maybe next time I need to reorganize the order of [the native] language. Really basic ones first, maybe just count first or maybe just a 'hi sir/madam' 'bye sir/madam' first... I taught too much [at first].”

All participants shared the desire to teach as part of their future careers. Indicated by all additional responsibilities of a GTA, teaching PACs was not considered the highest priority due to its “one-credit” status. However, having a low-stakes course allowed participants to explore what both the instructors and the students expected from a PAC class. Participant G supported the idea that teaching PACs provided a professional development opportunity to engage with students as a form of practice for future teaching experiences, commenting:

We may never teach this kind of physical activity when we get to the professor level... It's also a little easier [than other classes]. Especially it was the physical activity class, not the three-credit class. But yeah, this kind of teaching experience would be very helpful for me and preparing like teaching lectures in the future... It can be more related or kind of involved in the class with the students, not just talk and chalk.

Finding Meaningful Resources

All participants sought and valued digital media resources that would benefit the instructor's pedagogical practices, enhance student learning, and develop course structure. Although all participants used their personal equipment (e.g., phone or laptop), resources were dependent on the classroom environment and knowledge. For instance, digital media resources that benefited the instructors' pedagogical practices included the development and modification of content such as syllabi and assignments as well as the search and archival process of digital content such as video and audio. All participants were fortunate enough to have the opportunity to share resources early in the semester during the professional development workshops. However, whether the resources were

meaningful was dependent on each instructor. Participant E commented on adopting resources from peers: “To be honest, I had no idea how to teach stress management. But [peers] shared resources, lesson plans, and assignments. All of those were very helpful for me. And based on those, I modified the resources to my strengths.”

Creating or locating content-specific media was valuable but often time consuming. Using YouTube was the most common practice; however, the search through endless videos sometimes became daunting for both new and experienced participants. Participant H, a first semester GTA, commented on the time-consuming task of finding the right video: “I cannot watch everything.”

Participant E, a fourth semester GTA, also experienced the time-consuming task of finding the right resource, stating:

There are many videos right there. But which one is that? Which one is good? Which one's better? And what's the criteria to pick the video? So sometimes I was struggling like, which one is better? Which one's better? You know, for example, this morning I just changed my lesson. I wanted to do five minutes meditation. So, I go to YouTube, I typed ‘five minutes guided meditation.’ I found a few and finally decided on one.

Digital media resources that aimed to enhance student learning included instructional videos for content-specific activities or assignments, articles to health-promoting physical activities, and audio soundbites. All participants found resources online or via peers. For instance, Participant H learned about drills and activities via social media. Participant A found video drills to implement in bowling. Participants A,

C, E, and F found audio-based apps or links to soundbites. As Participant F simply stated, “Resources, resources, resources. That’s all were trying to do.”

Learning Canvas

As expected, all participants used Canvas as a tool to either communicate with students or provide resources. Canvas was used by all participants for announcements (i.e., due dates or weather), grades and attendance, feedback, and resources. A common pattern regarding the use of Canvas was the learning curve; based on interviews, Canvas took considerable time to learn, particularly among Participants A, B, C, and H who were first-semester GTAs. For example, Participant A noted that neither the university nor the department covered any topics on Canvas: “Our training on technology did not cover Canvas at all.” Participant A continued,

I feel sufficient enough, like I was able to pick up Canvas just based on my experience with put similar software like Desire 2 Learn (LMS) but everything like even paying rent deals over a different kind of software. Just there's something different [components].

Participant B had a similar note about Canvas: “It’s kind of a beast...If people haven’t ever used it, it could probably be a little daunting.”

Participant C noted how students also struggled with learning how to navigate Canvas for the online PAC: “I noticed at the beginning of the semester [the challenge] was locating where to find certain items... I guess just familiarizing with Canvas itself [is necessary].”

Participant H also had similar thoughts about switching from one LMS to another: “Blackboard (LMS) is more familiar to me because I have six years of experience using

Blackboard... The overall concept is the same but like small things, detailed things, you know, functional things (made it) a little bit confusing.”

Experienced GTAs such as Participant F mentioned that Canvas required an adequate amount of time to learn, stating, “I went through everything and it was probably like 15 hours of just learning Canvas.”

Valuing Video and Audio

All participants valued the power of video as well as audio media. Participants used video to introduce and educate students on content-specific concepts and assignments. An informational video on SMART goals was the most used video across participants. In fact, four of the five participants who implemented SMART goals introduced the same seven-minute video found on YouTube. Participant C commented on using a single video: “I would probably provide more than one link video just so they can get different interpretations of SMART goals so that they feel like they’re just not having to solely rely on one.”

Based on observations and interviews, SMART goals were suggested by a more experienced GTA who suggested the video/link to other instructors who wanted to incorporate SMART goals. Additionally, since three of eight participants were international students, relying on videos provided a safer approach to ensuring content was being delivered. Notably, all three international students considered videos a highly valuable tool to communicate with students based on language barriers. Participant H noted:

I shared some videos that helped me a lot. I just told you the languages are limited sometimes, but they watch the video and a [student said] “I watched this

video and then some guy punched this way, but it's a little bit different from what you taught us, what is the different?" So, it brought like some talking concept and stuff... It really helps me a lot from all the components I can share. That's why I really believe in the power of digital media.

Although mostly used synonymously, video media differed from audio media.

Audio media was an unexpected occurrence found across most participants. Either as an engagement tool such as music during class or as an audio recorded voiceover, audio media was used and valued among the practitioners. During the third interview, Participant A reflected on assigning a voiceover project: "I just figured that'd be a way they could still present themselves. We do a lot of presentations."

Participant F was inspired by a summer workshop to incorporate audio/voiceovers as a supplemental learning tool. Participant F ended the semester with a voiceover PowerPoint video project that encouraged higher order thinking by encouraging the production of both video and audio. Participant F noted the importance of assigning a presentation that included a voiceover:

To me it also fulfills one of our basic needs that to fulfill motivation, autonomy, they get to deal with it when they want... I'd like to give them the option of how they want to digest this information, so they can read the PowerPoint, they can listen to my voice over it, or they can just listen to my voice.

CHAPTER V

DISCUSSION

The purpose of this study was to explore the implementation of digital media as a pedagogical tool in PACs. Specifically, this study examined the lived experiences of GTAs and their contextual variables associated with digital media such as their experience in teaching, environment, perceptions, and uses of digital media. Contextual variables such as the institution's environment, professional development trainings, and GTA characteristics throughout a single semester were explored, documented, and interpreted to capture the overall essence of a collectively bounded case study (Reeves et al., 2016; Smith et al., 2012; Stake, 1995). This study stemmed from the need to address contemporary pedagogical practices that could ultimately assist GTAs who teach PACs, which, in turn, aimed to help students gain the skills and knowledge to be physically active for a lifetime (Cardinal, 2017; NASPE, 2009; NPAPA, 2016). Additionally, this study stemmed from the need to address the benefits and barriers of digital media within a university physical activity program with no full-time coordinator to support instructors, particularly GTAs. It is important to understand and support GTAs in their new role as educators who usually continue on to teach in a higher education institution (Melton et al., 2016). Therefore, this study examined the various avenues in which GTAs implemented digital media where no full-time coordinator was available in hopes of edifying future avenues of potential success in contemporary pedagogical practices.

To briefly review the major findings of this study, all participants (a) experimented with digital media to encourage student engagement within the PAC, (b) sought after meaningful digital resources for themselves and/or their students, (c) experienced a learning curve with Canvas, and (d) valued audio and video as beneficial tools in PACs. First, participants experimented with digital media to encourage student engagement within their PACs. Some participants expressed that digital media could have both positive and negative effects on student engagement, suggesting digital media's involvement could be beneficial for student engagement but not always necessary. Second, all participants sought meaningful resources to enhance their teaching or student learning experiences. Meaningful resources included specific examples of PAC content (e.g., technique videos, SMART Goal videos), modifiable documents (e.g., quizzes and exams), online links (e.g., YouTube, NPR), as well as pedagogical suggestions from fellow GTAs and other social/professional networks (e.g., previously used syllabi). Third, all participants had some degree of a learning curve with Canvas. First-semester participants ran into Canvas issues such as publishing assignments and assigning due dates. Experienced participants also had Canvas issues such as generating group assignments and entering attendance grades. Lastly, all participants valued audio and visual media in PACs. Video was used by all participants, either as a content-related resource (e.g., demonstration video) or as a video-based assignment (e.g., student-produced final assignment). Surprisingly, audio was also highly valued as a meaningful pedagogical tool. Most participants either experimented with voice recordings, used audio-based media (e.g., guided meditation, scoreboard

buzzer, language pronunciations) or assigned students to record voice-overs as part of a final project.

The following four sections are discussed: (a) the recurrent themes and relevant literature, (b) the broad effects of digital media's involvement based on the instructional guidelines (NASPE, 2009), (c) a conclusion of the results of this study, and (d) future implications. First, discussion about the recurrent themes includes relevant literature and similar studies regarding digital media in PACs. Second, a discussion on meeting instructional guidelines provides an overview of seven topics previously described in Chapter II: administration and support, assessment, instructional strategies, professionalism, learning environment, program staffing, and curriculum. Each topic discusses how the findings of this study related to the appropriate practices of the instructional guidelines (NASPE, 2009) as well as digital media's role within each topic. Third, the conclusion section provides an overall discussion of the results in relation to relevant literature. Lastly, future implications address digital media as a pedagogical tool in PACs, specifically for training and professional development opportunities.

Recurrent Themes

Experiment with Student Engagement

According to Reynolds (2016), student engagement is the dialog and interaction where the instructor provides an environment for guided discovery. Participants in this study valued time for students to exchange ideas, provided creative opportunities, and helped one another throughout the semester. Similar to Reynolds, this constructivist study supported the need for educational interventions to develop instructional design methods that promoted the use of digital media and digital literacy within kinesiology.

Similar to athletic training courses, instructional design methods should promote digital literacy based on curriculum and digital-based assessments (Kawaguchi, 2009; Nelson et al., 2011).

Evans et al. (2013) found the relationships between the instructor and students to be of high priority and an indication of success in PACs. Although Evans et al. did not focus on digital media, results from this study supported the valuable role of instructors' relationships with students and the impact on student engagement. Evans et al. and this study found that instructors wanted students to be engaged to hopefully learn content that could be used after the course and hopefully develop a sense of connection with the PAC.

As noted in the results chapter, participants experienced having students with intellectual and developmental disabilities including hearing impairment, injury-related limitations, as well as intellectual and developmental disabilities (e.g., WIN students). The number of college students with disabilities has increased over the past decade (Braga, Tracy, & Taliaferro, 2015). Braga and colleagues (2015) expressed the importance of providing students with disabilities appropriate modifications and accommodations to address successful student engagement and experiences. Notably, all participants experimented with digital media to accommodate students with limitations. For instance, Participant B had multiple students with intellectual and developmental disabilities, which resulted in experimenting with inclusive pedagogical practices such as implementation of the Daktronics scoreboard. The need for instructors to be flexible in student accommodations should be further examined within PACs (Braga et al., 2015; NASPE, 2009).

Finding Meaningful Resources

Over 20 years ago, Hensley (2000) noted the availability of resources was the second most limiting factor in PACs. Based on the results of this study, Hensley's work has not changed even though technological innovations have continued to advance. Beaudoin et al. (2018) also expressed the importance of establishing resources for instructors that could be utilized to meet learning objectives. As Charles and Charles (2016) noted, the race for resources is a continuous reality for kinesiology departments. Therefore, greater efforts toward resource allocation should be further understood and discussed among both thriving and struggling university physical activity programs.

Results of this study showed participants obtained digital media resources from prior experiences, peers and networks, and the internet. Using peers as resources is a common practice among physical activity programs (Brock et al., 2018). As previously mentioned, all participants utilized YouTube as a resource. Tiernan (2015) found similar results where YouTube was an effective resource to demonstrate and explain content. Although participants used YouTube as a resource, Reynolds (2016) suggested that not only should instructors research content but students should also be involved in researching for digital resources because it would allow students to create and develop their own ideas to course-related content. Results from this study found online PACs assigned students to research and choose mobile apps that could be used to measure different facets of physical activity. Mobile apps and personal phones are increasingly becoming the standard in higher education (Cochrane et al., 2014; Goldstein et al., 2017; Melton & Burdette, 2011). Therefore, future efforts should further evaluate the use of personal devices and apps used within PACs.

Due to the variety of experiences, philosophies, attitudes, and respective PACs, participants from this study required and desired different resources. Similarly, Ottenbreit-Leftwich et al. (2010) noted the amount of time, energy, and innovative motivation educators might have toward locating and using resources would vary. Therefore, access to resources, although a recurrent theme, remained a vaguely unique and virtually new phenomenon among PAC instructors.

Stapleton et al. (2017) suggested developing relationships with other wellness-oriented programs could provide meaningful resources. Based on the results of this study, GTAs might not know which resources could be beneficial off campus and primarily rely on online and personal networks to obtain resources. Therefore, results from this study suggested other university physical activity programs should provide open-resourced templates and pedagogies for programs and instructors across the country.

Learning Canvas

As expected, participants and students utilized the university's LMS (Canvas) as a primary communication tool between students and instructors. Similar studies investigated the use of Canvas or similar LMSs (Goldstein et al., 2017; Reynolds, 2016). Canvas was used to provide syllabi and video- and text-based resources. It was essential that instructors learned how to use LMSs such as Canvas (Melton et al., 2016).

As previously mentioned, participants were willing to share what they felt comfortable with on their Canvas page to the researcher. Particular instances regarding student privacy were considered when participants provided a Canvas tour for the researcher. In terms of digital media, student privacy should be considered regarding

what content is kept and archived (Yousef et al., 2014). For example, students who submitted a video for a final assignment should be asked if the content could be used as an example for future classes.

All participants used Canvas to communicate with students using ‘announcements’ to inform and remind students of particular information. Cox et al. (2019) found similar experiences where instructors needed to send a Canvas announcement for assignments and weather-based updates. Participants also used Canvas to implement assignments that would be graded and archived. Similar to Sweeney et al. (2017), experienced participants’ approach to using an LMS included assignment instructions, submissions rules and guidelines, feedback, and grades. Less experienced participants provided less details in instructions, rules and guidelines, and feedback. Similar results of experienced PAC instructors were also noted by Cox et al. in which the most experienced PAC instructor felt most comfortable with PACs and online assignments compared to new PAC instructors.

Particularly for the online PACs, participants had to pay extra attention to learning Canvas to meet student needs. Goldstein et al. (2017) found students who enrolled in online PACs were less physically active college students than those who enrolled in in-person PACs. Although this study did not primarily focus on students but rather the instructors, it was important to note that addressing student needs in terms of online or in-person digital media should be discussed. Therefore, instructors learning to use an LMS such as Canvas should consider pedagogies that embrace both physically active and less physically active students.

Valuing Video and Audio

As previously mentioned, the results of this study supported literature about the value of using both video and audio media. O'Loughlin et al. (2013) noted that using video as a feedback tool increased student engagement with basketball skills with students as early as fourth grade. Ideally, more video could be implemented based on the digital native society (Bodsworth & Goodyear, 2017). As mentioned in the results section, Participant B commented on considering using video as a feedback learning tool in future classes after witnessing students practice with video on their own. Aside from video as a feedback tool, instructional videos were also used. Instructional videos increased student engagement by making the class more enjoyable, interesting, and motivating (Bodsworth & Goodyear, 2017; Tiernan, 2015). Additionally, one participant noted student engagement was met during an instructional video presentation because students watched the instructional video instead of using their personal phones.

Multiple participants incorporated a digital project that included students producing their own media (e.g., presentation of learning with voice over). Reynolds (2016) noted that assigning a digital video project strongly encouraged a rich social constructivist approach to teaching and learning. Lim et al. (2009) noted video production was a unique pedagogical approach to engaging students to learn content and promoted higher-order cognitive skills.

Meeting Instructional Guidelines

Over a decade old, the *Appropriate Instructional Guidelines for Higher Education Physical Activity Programs* (NASPE, 2009) has remained the most relevant standard for PAC best practices. With seven primary components (administration/support,

assessment, instructional strategies, professionalism, learning environment, program staffing, and curriculum), various aspects of appropriate practices were observed and interpreted by the researcher. The following sections provide a greater in-depth discussion relating the university's overall appropriate practices in relation to digital media. Although this research did not intend to purposely examine the appropriate practices, it was important for programs to at least assess the facilitators and barriers of such practices.

Administration and Support

Despite not having a full-time coordinator, GTAs who taught PACs always had support from the School of Sport and Exercise Science as well as higher administration, either in-person or by email. In fact, email communication was the most used digital media tool among GTAs, administration, and students. On multiple occasions, participants shared that administration (e.g., department chair) would visit the various GTA offices and offer advice on attendance and participation issues. Administrative assistants also provided essential communication support for situations such as but not limited to printing privileges and student enrollment issues. As Stapleton and Bulger (2015) noted, university programs meeting administrative support guidelines re-affirmed the stability of the program and department. Based on the results of this study and relevant literature, this university program is a stable program and reflects a positive administration and support system for GTAs teaching PACs (NASPE, 2009; Stapleton & Bulger, 2015).

Assessments

All participants used a variety of assessments via digital platforms. Canvas and the university database (i.e., URSA) were the most used platforms for summative and formative assessments since GTAs had to submit formative assessments on Canvas for students to view and final grades were submitted on URSA. Some participants gave paper-based assessments simply for the ease of avoiding Canvas and potential troubleshooting problems. Stapleton and Bulger (2015) reported similar practices among other physical activity programs, suggesting many PAC assignments might not have changed in decades because of the lack of effort toward PAC progress. Based on the results of this study, GTAs appropriately implemented assessments but specific guidelines should be further discussed.

Similar to K-12 physical education, university PACs should assess psychomotor, cognitive, and affective domains in a systematic manner (Metzler, 2011; NASPE, 2009). Results from this study showed participants assessed students in at least one of three domains in their respective PACs. According to the instructional guidelines (NASPE, 2009), all domains should be assessed. However, a considerable amount of time would be needed for GTAs to single-handedly develop all three types of assessments with appropriate rubrics, particularly for GTAs who might have limited teaching experiences (Langdon & Wittenberg, 2018; Melton et al., 2016). Not surprisingly, participants only assessed what they felt was best for the course outcomes and assessed at least one of the three learning domains. For example, the psychomotor domain was assessed in the Swimming PAC, the cognitive domain was assessed in the basketball PAC, and the affective domain was assessed in the Activities for Stress Management as well as the

online PACs. Allowing GTAs to choose the best assessments was critical to the strengths of the instructor's teaching style and the need for autonomy in a physical activity program (Melton et al., 2015; NASPE, 2009; Stapleton & Bulger, 2015). If instructors are supposed to assess in all domains, future efforts should incorporate a centralized archival system of assessments from which GTAs could pick and choose.

Ultimately, an ideal solution would be to incorporate Canvas course shells and documents to be archived in an open education platform such as Canvas Commons. Canvas Commons is an extension within Canvas where instructors could upload content for other Canvas clients to download for free. Canvas Commons or similar platforms would allow physical activity programs and instructors to share and access various psychomotor, cognitive, and affective assessments regardless if a program had a full-time coordinator. To the researcher's knowledge, no PAC content is readily available on Canvas Commons or any other LMS.

Instructional Strategies

Instructors should organize classes to maximize attendance and participation (Brock et al., 2018; NASPE, 2009). Results from this study showed student attendance and participation were among the biggest issues for participants. As Brock et al. (2018) noted, students sometimes lacked effort in attending or participating in PACs. Notably, most participants in this study viewed PACs as a "one credit course," suggesting PACs were considered a lower priority than other courses. Ironically, participants shared their frustration about student attendance while also admitting that they were lenient on attendance. Having a lenient attitude toward attendance showed the need for university physical activity programs to have specific guidelines that objectively measured

attendance and participation in relation to final grades. Keeping record of student attendance should be discussed among GTAs and administration (Beaudoin et al., 2018) but it was important to provide GTAs with the choice of keeping record of student attendance (Melton et al., 2016). Results from this study suggested an attendance protocol should be established to maintain consistency, especially as a preventative measure if students tried to contest their grade.

In terms of digital media, attendance protocols should be implemented with caution as multiple participants experienced troubleshooting issues with Canvas' attendance capabilities. For example, participants reported that Canvas' attendance page did not provide an immediate grade-based feedback for students. In other words, participants would use the Canvas attendance page but students were unable to view their attendance grades. Eventually, participants ended up using an Excel document or paper-based sheet to keep track of student attendance and uploaded the final grade at the end of the semester rather than use Canvas. Although not digital, using a paper-based attendance sheet was common among university physical activity programs and allowed quick and easy-to-read accumulations of student attendance (Brock et al., 2018). Based on the results of this study, digital-based assessments should either include an instant-feedback assessment page within Canvas or a universal paper-based attendance template should be provided for instructors. Ultimately, attendance and participation should be curated based on the instructor's teaching and learning approaches (Melton et al., 2016; NASPE, 2009).

All participants valued giving students autonomy and either gave students autonomy through assignments or in-class activities. Participants who incorporated goals

made sure goals were set by the student and not the instructor. Giving students the choice for individual goals is recommended within PACs (Langdon & Wittenberg, 2018; NASPE, 2009). In terms of digital media, instructional videos for developing individual SMART goals were used by four of five participants who incorporated goals. Participants also incorporated the option to use apps (e.g., Fitbit app, iPhone Health app) to objectively measure individual goals. Melton et al. (2015) suggested app-based interventions could positively impact college student behaviors. Based on the instructional guidelines (NASPE, 2009), future considerations for app-based goal setting practices should be addressed to provide consistency across PACs to be objectively measured.

Participants valued PACs as a viable opportunity for student success that transcended beyond the classroom. Results from this study showed participants, regardless of experience, altruistically wanted students to have health-minded takeaways, which was fortunately the ultimate goal of PACs (NASPE, 2009). Furthermore, participants valued meaningful projects and assignments that provoked critical thinking to transcend beyond the PAC. For instance, multiple participants incorporated a project where students had to present their reflections on their goals from the course. Having students create a video was considered a greater form of critical thinking than memorization (Anderson et al., 2001) and the use of video allowed greater opportunity for student creativity and digital literacy (Cox et al., 2019; Gourlay et al., 2014; Lim et al., 2009). Future considerations toward student success via digital media tools should incorporate video-based projects that give students a real-world application of projects.

Professionalism and Learning Environment

Overall, professionalism was met by participants as well as the program as a whole. Based on interviews and observations, participants showed up on time, demonstrated the basic and advanced motor skills, and most participants continued to seek new information to enhance the PAC experience. As previously noted, participants considered student safety in a digital media context. The most relevant example was a participant who allowed an injured student to complete physical activity assignments via physical therapy. The same participant also considered student privacy, which is important to consider in a digitally driven society (ISTE, 2017; Yousef et al., 2014). When students had to upload or email assignments consisting of personal media such as photographs and screenshots, the participant deleted the media as a way to ensure student information would not be shared. Data privacy was not mentioned in PAC literature but should be considered in future instructional PAC guidelines (ISTE, 2017; Yousef et al., 2014).

Program Staffing

Peers and networking opportunities played a crucial role in obtaining resources. With no formal syllabi or course objectives set by the department, PAC instructors should provide mentorship and content resources from their fellow peers (Cox et al., 2019; Langdon & Wittenberg, 2018; Melton et al., 2015). Results of this study showed little indication that peers were consistently supporting one another throughout the entirety of the semester. In fact, participants were in separate offices across campus. Having GTAs teach different sections of the same PAC or change what courses they taught every semester, resources could either be transferred and recycled by fellow GTAs or simply be

discarded. Having no full-time coordinator to structurally archive digital media resources potentially led to GTAs spending more time interpreting or searching for recycled resources than needed.

Curriculum

Overall, the university physical activity program provided a variety of course offerings, student objectives, and an appropriate class size for students (NASPE, 2009). Results from this study indicated a greater focus should include students with disabling conditions. In fact, seven of eight participants either had a WIN student or a student with a physical limitation (e.g., injury or deafness). Although modifications were made, the unexpected amount of diversity proved to be challenging because participants did not know the extent of students' limitations and had limited pedagogical training for inclusive practices.

In summary, participants followed the instructional guidelines (NASPE, 2009), which included course content that offered students the opportunity to develop social skills as well as recognize and participate in physical activities benefiting student health. Although variations in teaching styles were found among the participants, it came as no surprise as all participants came from different backgrounds, teaching experiences, personal philosophies, and environmental variables (Cox et al., 2019).

Fink (2003) provided six ways to address significant learning: (a) foundational knowledge, (b) learning how to learn, (c) caring, (d) application, (e) human dimension, and (f) integration. Foundational knowledge included the basic content for students to understand other aspects of a course.

Conclusion

As part of an interpretive analysis of a collectively bounded case study, finding common experiences provided an overall essence of a homogenous phenomenon (Cox et al., 2019; Smith et al., 2012; Stake, 1995). If given the opportunity, GTAs were willing to experiment with digital media as a pedagogical tool to develop and hone their skills as educators. In other words, if PAC instructors were given the time, resources, or support to implement digital media within their class, instructors at least tried to use digital media in PACs. Whether attempting to increase student engagement or providing meaningful resources for students, PAC instructors were willing to experiment with digital media to improve their teaching effectiveness. Specifically, PAC instructors valued efficiency with the use and practice of Canvas as well as the consistently intended use of both video and audio formats. Looking for a “good” video resulted in participants looking for both very specific content as well as remedial content due to the variety of the student population. For example, a video that explained a breaststroke would be beneficial for students who had never performed a breaststroke but an experienced student who might understand the breaststroke would need a specific video to demonstrate detailed biomechanical movements. Based on the results and discussion mentioned above, having an archive of previously used digital media could potentially decrease the amount of time spent to search for resources, allowing more time for instruction and other responsibilities GTAs might have.

Future Implications

The results of this study suggested university programs without a full-time coordinator should invest greater support into professional development opportunities

that would generate meaningful resources for GTAs who taught PACs. Specifically, professional development opportunities should include digital media pedagogies that could be transferable yet structured enough to allow modifications while flexibly achieving student learning outcomes (Beaudoin et al., 2018; Melton et al., 2016; NASPE, 2009). Although the primary purpose of this study was not focused on professional development opportunities, this study provided a better understanding of the different contextual variables to consider when training GTAs and preparing PAC curricula. Reeves et al. (2016) provided multiple contexts to consider such as GTA cognition (e.g., knowledge/skills, attitudes and beliefs), GTA teaching practices (e.g., planning, instruction, and assessment), and undergraduate student outcomes (e.g., knowledge/skills, retention, interest). Professional development opportunities could include an intensive one-day training before the semester (Brock et al., 2018) or a series of on-going support throughout the semester (Langdon & Wittenberg, 2018). Ideally, it would be important to consider both a one-day workshops as well as on-going support for GTAs (Guskey, 2016; Langdon & Wittenberg, 2018). To completely capture the impact of professional development opportunities, future implications should consider objectively investigating PAC student outcomes, which was beyond the scope of this study.

As previously mentioned in the literature review, multiple conceptual frameworks (i.e., TPACK, Blooms taxonomy, Fink's significant learning model) were considered relevant for this dissertation but did not frame this dissertation's methodology. Future studies should consider such frameworks to examine the impact of digital media for PACs, PAC instructors, and the students. For instance, based on the findings of this dissertation, some participants provided an assignment for students to search for videos

related to the PAC content. The students returned the following class and either practiced or inquired about particular content (e.g., self-defense techniques). Future studies could examine the technological pedagogical content knowledge (TPACK; Mishra & Koehler, 2006) of the instructor's assignment in relation to the content, the instructor, the implementation of the assignment, and the student outcome of the assignment as noted via the flipped learning approach (Litchfield, 2018; NASPE, 2009; Ottenbreit-Leftwich & Brush, 2018; Stapleton et al., 2017). Other frameworks mentioned in the literature review chapter focused more on the student outcomes. As previously mentioned, this dissertation did not explore the students but rather the instructors. Based on the findings of this study, students practiced higher-order thinking practices such as media production by recording both audio and video as part of a PAC-specific assignment. Future studies should investigate the impact of media production, which was considered the highest order of thinking learning (Anderson et al., 2001; Lim et al., 2009). More specifically, Fink (2003) provided six ways to address learning (i.e., foundational knowledge, learning how to learn, caring, application, human dimension, and integration), which could provide greater specificity on the impact digital media could have within PACs for students. Finding in this study did not interact with these frameworks but are recognized as relevant avenues to investigate.

Overall, future implications toward an archival process of digital media content and practices should be considered for physical activity programs. Particularly, archiving course curriculum, instructional methods, assessments, and online links would provide valuable resources for GTAs to adopt, modify, and experiment within PACs (Reeves et al., 2016). Having an archival process at a college or university with no full-time

coordinator could prevent GTAs having to spend too much time developing new instructional strategies. Furthermore, having a digitally bound archival process could potentially benefit programs and GTAs for institutions across the country. For example, a university physical activity program that has a full-time coordinator could archive various documents and resources via cloud-based storage and then could be accessed by programs and GTAs without a full-time coordinator. Having a cloud-based archive would provide administration and instructors access to a digital hub that could essentially be used to download and modify to specific PAC needs (Stapleton et al., 2017). Graduate teaching assistants sometimes have limited teaching experiences (Langdon & Wittenberg, 2018; Melton et al., 2016). Therefore, future considerations toward ongoing professional development support and access to resources could hopefully benefit GTAs' pedagogical tools in their new teaching responsibilities while benefiting healthy behaviors toward students who enroll in PACs (NASPE, 2009; Reeves et al., 2016). One participant suggested a way to incorporate digital media as the backbone of an archival process that could potentially provide future GTAs the opportunity to learn, develop, and implement digital media as a pedagogical tool:

Having a working document where you have structure. Like, prepping a course and then you have [step A] equates to syllabus, [step B] is how to prepare [a PAC having] overarching themes that you can quickly navigate...with a very detailed and thorough process steps would be important. Maybe even like a testimonial section [explaining] what worked, what didn't... Dialogue [from peers would be] valuable... then you have somewhere to go back to, right?... So maybe something

like that's very structured and very thorough but constantly evolving where students can constantly add to it. And Faculty can even do it too.

In summary, PACs remain an integral and historical facet of higher education institutions by providing students the opportunity to exercise healthy habits that hopefully last a lifetime. As technological advancements continue to change the educational structure, PACs and their respective instructors remain responsible for incorporating contemporary practices that uphold quality content. Instructors who teach PACs should be equipped with the necessary resources and support, whether it comes from administration, peers, or online databases. Higher education institutions should pursue more open-resourced archive programs that could provide educators access to quality PAC content. With PAC-specific content available via online databased, neophyte educators such as GTAs could save instructor time searching for meaningful resources and ultimately allow instructors to spend more time experimenting with student engagement that could eventually lead to healthier and more active lifestyles.

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APPENDIX A

VERBAL SCRIPT FOR POTENTIAL PARTICIPANTS

Good afternoon/morning. My name is Dannon Cox, and I'm a doctoral student at UNC. I am here to enlist your participation in a study. As you know, per the standard SES physical activity course syllabus, you are required to implement technology into your course. Since you will be doing this, I want to explore ways physical activity instructors use digital media in their courses. Your involvement will remain confidential and participation is voluntary.

This study will include three 30-45-minute interviews, two observations of your course, an examination of digital media documents, and three technology journal entries throughout the Fall 2019 semester. Your participation will remain confidential.

If you choose to participate in this study, you will receive a \$50 gift card as compensation for completing all parts of this study.

If you are interested in participating in this study, complete the information and consent form given to you. Thank you. If you decide to participate, I will be in contact to schedule our first interview in the next week.

Thank you.

APPENDIX B
INFORMATION FORM

Name

Email

Your Degree Focus (e.g., Biomechanics, Sport Physiology, etc.)

Course(s) for which you are Instructor of Record (e.g. SES 146, 170, etc.)

APPENDIX C
CONSENT FORM



CONSENT FORM FOR HUMAN PARTICIPANTS IN RESEARCH
UNIVERSITY OF NORTHERN COLORADO

Project Title: Implementing Digital Media as a Pedagogical Tool in Physical Activity Courses

Researchers: Dannon G. Cox – email: dannon.cox@unco.edu

Dr. Jennifer Krause (Research advisor) – email: Jennifer.krause@unco.edu

What is the purpose of the study?

The primary purpose of this study is to examine the implementation of digital media pedagogies within physical activity courses. This study will provide information about the trends and pedagogical practices across physical activity courses related to digital media implementation.

What will you be asked to do?

This study will include three interviews, two observations of your course, an examination of digital media documents, and a completion of a monthly technology journal throughout the Fall 2019 semester. Your responses to the interviews and journal will remain confidential. The interview will take approximately 30 minutes to complete and will be audio recorded per the participant's preference. Audio recordings will be transcribed verbatim. The technology journal will take approximately 5-10 minutes to complete. Audio recordings and any other identifiable data will be stored in the lead researcher's office on the UNC campus and destroyed three years following the end of the data collection for this project.

What are the possible risks and discomforts?

Potential risks in this project are minimal. You may feel uncomfortable sharing your ideas and beliefs.

Will you receive any compensation for taking part in this study?

If you choose to participate in this study, you will receive a \$50 gift card as compensation for completing all parts of this study.

Will you benefit from taking part in this study?

There is no direct benefit from taking part in this study. Study findings will help the researchers understand ways in which to better prepare physical activity instructors to integrate digital media in their courses.

What if you have questions?

If you have questions about the study, you can contact Dannon Cox at Dannon.Cox@unco.edu.

Informed Consent

Participation is voluntary. You may decide not to participate in this study and if you begin participation you may still decide to stop and withdraw at any time. Your decision will be respected and will not result in loss of benefits to which you are otherwise entitled. Please take your time to read and thoroughly review this document and decide whether you would like to participate in this research study. If you decide to participate, your completion of the research procedures indicates your consent. Please keep or print this form for your records. If you have any concerns about your selection or treatment as a research participant, please contact Nicole Morse, Office of Research, Kepner Hall, University of Northern Colorado Greeley, CO 80639; 970-351-1910.

Participant's Signature

Date

Researcher's Signature

Date

APPENDIX D
EMAIL CONFIRMATION AND FOLLOW-UP

Good morning/afternoon

Thank you again for agreeing to participate in this study. For your records, attached is a copy of the consent form. As the semester begins, I would like to schedule a time to conduct an interview regarding your physical activity course(s).

During the interview, I will ask questions about your course and digital media. The interview will take approximately 30 minutes. Please reply with some available dates and times between August 26th and September 6th. that work best for you – I will be more than happy to work with your schedule throughout the semester. Please send your reply by August 23rd.

Additionally, you will be emailed on the 5th, 10th, and 15th Monday (September 23, October 28, and December 2) of this semester with a link to your technology journal. You will have one week to complete the technology journal and will also receive an email reminder.

Good morning/afternoon

This is a follow-up email that we have an <interview/observation> on <insert date/location> for SES <###>. Please let me know if there needs to be any changes or conflicts. Thank you again and see you soon!

APPENDIX E
INTERVIEW GUIDE I

1. Name
2. Age
3. Major / Plans after graduation
4. PAC courses (e.g., SES ###)
5. Thoughts on GTA orientation and workshop

Pedagogy

6. Teaching experience
7. Knowledge about course content
8. PAC planning
9. Personal thoughts about PAC

Digital Media

10. Experience with digital media (leisure)
11. Experience with digital media (education)
12. Thoughts about digital media physical activity courses?
13. Is there anything else you would like to share?

APPENDIX F
INTERVIEW GUIDE II

1. Name

Pedagogy

2. Catch up – How are classes?
3. So far, what have students learned in your PAC?
4. Any changes in your teaching/planning?

Digital Media

5. So far, what are your experiences using digital media in your PAC?

Extra Information

<Observation annotations>

<Technology journal>

6. Can you tell me about your technology journal entries?
(e.g., Time cost, student engagement)
7. Is there anything else you would like to share?

*Anticipate time cost, student engagement, etc.

APPENDIX G
INTERVIEW GUIDE III

1. Name

Pedagogy

2. Catch up – How are classes?
3. So far, what have students learned in your PAC?
4. Any changes in your teaching/planning?
5. What are your takeaways from the semester?

Digital Media

6. Any takeaways about using digital media in your PAC?

Extra Information

<Observation annotations>

<Technology journal>

7. Can you tell me about your technology journal entries?
(e.g., Time cost, student engagement)
8. Is there anything else you would like to share?

APPENDIX H
OBSERVATION GUIDE

Observation Guide

Date: _____ Time: _____ Location: _____

Participant name: _____ Course: _____

Length of activity:	
Descriptive notes	Reflective notes

APPENDIX I
DOCUMENT COLLECTION GUIDE
(CANVAS SPECIFIC)

Participant Name: _____

Canvas Details / screenshots / files

Y/N	Canvas	Notes / content
	Course details	
	Home	
	Announcements / Emails	
	Syllabus	
	Modules	
	Assignments	
	Files	
	Attendance	
	Instructor Course Evaluation	
	Quizzes	
	Collaborations	
	People	
	Zoom	

Extra Notes:

APPENDIX J
DOCUMENT COLLECTION GUIDE
(NON-CANVAS SPECIFIC)

Document Collection Guide (Non-Canvas Specific)**Participant Name:** _____**Handouts / screenshots / files****management/communication**

(e.g. email, announcements, apps, social media, etc.)

Instruction**Assessments and feedback****Misc.**

APPENDIX K

INITIAL EMAIL: TECHNOLOGY JOURNAL (#1)

Good morning/afternoon

Thank you again for your participating in this study. This is a friendly email requesting you to complete your first technology journal. Please complete the technology journal by this Sunday. Please feel free to use the additional technology journal that was provided to you at the beginning of the semester. You will receive a reminder to complete the technology journal at the end of this week. Do not hesitate to contact me if you have any questions.

Please complete the technology Journal #X by Sunday at 11:59pm.

<https://survey.az1.qualtrics.com/jfe/form/SV_5AR99FAqgUiD0gd>

Thank you again for your participation and have a great weekend!

APPENDIX L

EMAIL LINK: TECHNOLOGY JOURNAL (#2 & #3)

Good morning/afternoon

This is a follow-up email reminding you to complete next technology journal by Sunday at 11:59pm. Please feel free to use the additional technology journal that was provided to you at the beginning of the semester.

<insert link>

Thank you again for your participation and have a great weekend!

APPENDIX M

**EMAIL REMINDER: TECHNOLOGY JOURNAL
(#1, #2, #3)**

Good morning/afternoon

This is a follow-up email reminding you to complete the technology Journal #X by Sunday at 11:59pm. <insert link>

Thank you again for your participation and have a great weekend!

APPENDIX N
TECHNOLOGY JOURNAL

Initials

Course (e.g., SES 100)

Instructions: Please select all of the technology tools that you have used within in your physical activity course(s) over the past month. Please feel free to use your additional technology journal as a reference:

Microsoft Outlook to email students in physical activity courses

Mobile tablets or phones

Video/audio links

Video/audio files

Canvas

Announcements/email

Syllabus update

Modules

Discussions

Assignments

Files

Attendance

Instructor course evaluation

Quizzes

Collaborations

People

Zoom

Social Media (e.g. Twitter, Snapchat, Facebook, etc.)

Mobile apps (e.g. fitness tracker)

Wearable devices (e.g. Fitbit, pedometers)

Electronic equipment (e.g. treadmill or row machine)

Augmented reality

Other (please be specific)

1. Select one technology from the list above that you have implemented in the past two weeks and please describe in detail how it was used (i.e., date, how it was used, and purpose of implementation).
2. Were there any benefits in using this digital media tool? Please describe.
3. Were there any challenges in using this digital media tool? Please explain.
4. Was this implementation of this digital media tool a success? Why or why not?
5. Will you use this digital media tool again? Why or why not?

APPENDIX O
ADDITIONAL TECHNOLOGY JOURNAL

Microsoft Outlook	<i>(e.g., 8/14, Emailed students about syllabus update)</i>
Mobile tablets or phones	<i>(e.g., 8/14, Used student phones to track steps)</i>
Video/audio links	
Video/audio files	
Canvas Announcements/email Syllabus update Modules Discussions Assignments Files Attendance Instructor course evaluation Quizzes Collaborations People Zoom	
Social Media (e.g. Twitter, Snapchat, Facebook, etc.)	
Mobile apps (e.g. fitness tracker)	
Wearable devices (e.g. Fitbit, pedometers)	
Electronic equipment (e.g. treadmill or row machine)	
Augmented reality	
Other (please be specific)	

APPENDIX P
INSTITUTIONAL REVIEW BOARD APPROVAL



Institutional Review Board

DATE: April 19, 2019

TO: Dannon Cox

FROM: University of Northern Colorado (UNCO) IRB

PROJECT TITLE: [1421519-2] Implementing Digital Media As A Pedagogical Tool In University Physical Activity Courses

SUBMISSION TYPE: Revision

ACTION: APPROVAL/VERIFICATION OF EXEMPT STATUS

DECISION DATE: April 19, 2019

EXPIRATION DATE: April 19, 2023

Thank you for your submission of Revision materials for this project. The University of Northern Colorado (UNCO) IRB approves this project and verifies its status as EXEMPT according to federal IRB regulations.

We will retain a copy of this correspondence within our records for a duration of 4 years.

If you have any questions, please contact Nicole Morse at 970-351-1910 or nicole.morse@unco.edu. Please include your project title and reference number in all correspondence with this committee.

This letter has been electronically signed in accordance with all applicable regulations, and a copy is retained within University of Northern Colorado (UNCO) IRB's records.

APPENDIX Q
DATA COLLECTION CALENDAR

August 2019						
Sun	Mon	Tue	Wed	Thu	Fri	Sat
				1	2	3
4	5	6	7	8	9	10
11	12	13	14	15	16	17
18 Week 0 Schedule Interviews	19 Conduct Workshop/Orientation Invite participants Collect Consent and Information Forms	20	21	22	23	24
25 Week 1 Schedule Interviews Interview & Document Collection #1 Provide Additional Technology Journal	26	27	28	29	30	31

September 2019						
Sun	Mon	Tue	Wed	Thu	Fri	Sat
1 Week 2 Interview & Document Collection #1	2	3	4	5	6	7
8 Week 3	9 Begin interviews & observations analysis	10	11	12	13	14
15 Week 4 Observation #1	16	17	18	19	20	21
22 Week 5 Observation #1	23 Initial Email – Technology Journal #1	24	25	26 Email Reminder – Technology Journal #1	27	28
29 Week 6	30 Analyze Journals					

October 2019						
Sun	Mon	Tue	Wed	Thu	Fri	Sat
Week 6	Analyze Journals	1	2	3	4	5
6 Week 7	7	8	9	10	11	12
Interview & Document Collection #2						
13 Week 8	14	15	16	17	18	19
2 Interview & Document Collection #2						
20 Week 9	21	22	23	24	25	26
27 Week 10	28	29	30	31		
	Email Link - Technology Journal #2			Email Reminder - Technology Journal #2		

November 2019						
Sun	Mon	Tue	Wed	Thu	Fri	Sat
Week 10	Email Link - Technology Journal #2			Email Reminder – Technology Journal #2	1	2
3 Week 11	4 Analyze Journals	5	6	7	8	9
10 Week 12	11	12	13	14	15	16
17 Week 13	18	19	20	21	22	23
24 Week 14	25	26	27	28	29	30 Email Reminder – Technology Journal

December 2019						
Sun	Mon	Tue	Wed	Thu	Fri	Sat
1 Week 15 Interview & Document Collection #2	2 Email Link - Technology Journal #3	3	4	5 Email Reminder - Technology Journal #3	6	7
8 Week 16 Interview & Document Collection #2	9 Analyze Journals	10	11	12	13	14
15	16	17	18	19	20	21
22	23	24	25	26	27	28
29	30	31				