

Online Learning for School Administrators Regarding Physical Education: A Systematic Review

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Online learning may be an effective mode to deliver information about specially designed physical education (PE) to school administrators. The purpose of this study was to conduct a systematic review of the literature to evaluate the use of online learning to increase knowledge on PE for school administrators. The investigators identified two articles that met the full inclusion criteria. From the findings of this systematic review, it appears that more rigorous research is needed to better understand the benefits and challenges of online learning for school administrators.

School administrators are unique in that they need to understand the variety of curricula and accommodations needed within students with disabilities' school day (Gary, 2016; Thompson & O'Brien, 2007). School administrators, in particular special education administrators, are especially pertinent to effective physical education services for students with disabilities, which is commonly referred to as adapted physical education, as they directly oversee special education services. Adapted physical education programs have the same overall objectives as general physical education programs; however, adapted physical education programs specialize in making accommodations and modifications to personalize the programs to meet students with disabilities' individual needs (Dunn & Leitschuh, 2014). Although adapted physical education has numerous benefits (e.g., improved fitness, increased on-task behaviors, cognitive benefits, etc.) and is identified within the definition of special education, the Government Accountability Office (GAO, 2010) found that schools throughout the United States face various challenges concerning students with disabilities receiving quality physical education. The GAO also suggested that school administrators need additional training to be better prepared to supervise and monitor adapted physical education services.

One of the primary barriers that disrupts and prevents adapted physical educators from effectively delivering services to students with disabilities is school administrators' lack of support and knowledge with regard to adapted physical education (Bittner, McNamara, Katz, & Silliman-French, in press; Hodge & Akuffo, 2007; GAO, 2010; Gray, 2016; McNamara, Silliman-French, Morgan, & Stephens-Pisecco, in press; Stephens, Silliman-French, French, & Kinnison, 2011). For example, Gray (2016) investigated various school professionals' (i.e., school administrators, special educators, general and adapted physical educators, general educators, and para-educators) knowledge and perceptions of physical education services for students with disabilities. It was found that all these school professionals had a significantly lower perceptions of the importance of physical education compared to general and adapted physical educators. In addition, all of these school professionals (excluding general and adapted physical educators) generally lacked an understanding of fundamental components of adapted physical education, such as the special education laws that mandate access to physical education for students with disabilities.

Online learning focused on specially designed physical education that may assist with facilitating quality physical education services to students with disabilities. Online settings are becoming an increasingly popular format for learning and professional development, which has the ability to overcome accessibility and cost barriers (Elliot, 2017; Fidalgo, & Thormann, 2017). There is a growing amount of research which has demonstrated the effectiveness of online learning for a variety of teachers (e.g., special educators, physical educators) (Erickson, Noonan, & McCall, 2012; Healy, Block, & Kelly, 2019). Educators who have engaged in online learning have generally increased their knowledge in their subject area and their instructional practices (Erickson et al., 2012; Healy et al., 2019). However, there is a lack of research focused on the effectiveness of online learning for school administrators (Bizzell, 2011; Crockett, J. B., Becker, M. K., & Quinn, 2009; Leithwood & Levin, 2008). With the limited research currently available, school administrators tend to view online learning favorably as they allow convenience to connect, collaborate, and exchange information with others in similar professional circumstances across geographical distances. Furthermore, online learning for school administrators has shown to contribute to significant increases in their knowledge, as it offers resources that administrators may find helpful (Dempsey & Stephens, 2011).

The use of online learning for school administrators may be particularly advantageous, as this population has a severe lack of time due to their extensive job duties (Camburn et al., 2016).

Therefore, the purpose of this study was to conduct a systematic review of the literature to evaluate the use of online learning (e.g., online modules) to increase knowledge on physical education for school administrators. In addition, the Adapted Physical Activity Taxonomy (APAT; Carano, 2014) was used to evaluate the quality of the articles identified. The following research questions guided this systematic review:

- a) What research has been conducted on the use of online learning to increase school administrators' knowledge of physical education?
- (b) What is the quality of research that has been conducted on online learning used to increase school administrators' knowledge of physical education?

Method

Initial Search Procedure

Potential articles, published in the past 10 years (between 2007 and 2017), were initially located via online indexing system searches. The reference lists of the articles found through the online search were also manually searched for potential articles. The reviewers conducted an initial search of the literature using the following indexing systems/research platforms: SPORTDiscus, ProQuest Nursing and Allied Health Database, ERIC, Academic Search Complete, Education Administrator Abstracts, Professional Development Collection, and PsychINFO. Keywords used for the searches were used in all possible combinations from three separate groups: (a) educational leadership, (b) physical education, and (c) adult learning. Within each group, a set of keywords were used to combine with keywords from other groups. The group educational leadership used the keywords "school administration", "educational leadership", and "special education administration". The online learning group used the following keywords, "adult learning", "online learning", "professional development", "podcast", and "andragogy". The last group, labeled physical education group used the keywords "physical education" and "adapted physical education".

Criteria for Inclusion

The following six inclusion criteria were selected by the authors and required that articles be (a) published between January 2007 and June 2017, (b) published in English language journals, (c) located in periodical publications (i.e., books, unpublished papers, conference proceedings and book chapters were excluded), (d) involved implementation of an online intervention consistent with the adopted operational definition for online learning, (e) provided a clear description of the participants as individuals who worked in some capacity as school administrators or were in an educational leadership graduate school setting, (f) utilized an experimental/quasi experimental, correlation, single-subject, or qualitative research design (i.e., systematic reviews and meta-analyses were excluded). Only articles that met these criteria were eligible for evaluation. Prior to conducting the literature search, the reviewers unanimously agreed to the operational definition for online learning as a web-based, educational delivery system 'that is characterized by a structured learning environment, to enhance and expand educational opportunities, providing instruction that is teacher-led, and may be synchronous or asynchronous, and can be accessed from multiple settings' (Watson, Murin, Vashaw, Gemin, & Rapp, 2011, p.10).

Article Review

Articles that were identified through the initial search procedure were evaluated using a three-step process. First, the two primary investigators conducted a title and abstract review on the potential studies identified to confirm studies met the inclusion criteria. Articles identified as reviews of literature were excluded but the reference lists from these articles were examined for additional potential articles. In the second step, articles that met abstract and title review were then read by both investigators to ensure they met all of the inclusion criteria. Throughout the article review process, the two reviewers independently assessed the articles to determine whether the studies met the inclusion criteria. In instances of disagreement, articles were reassessed by the reviewers until there was 100% consensus. In the third and final step, the articles that were found to meet all of the inclusion criteria were independently evaluated by one of the investigators using the quality indicators from the APAT.

Instrumentation

The APAT was developed using the CEC indicators (Carano, 2014). The APAT was used as the decision-making tool to rate the quality of each individual study and the strength of the recommendations for each of the identified articles. The APAT was designed to address four types of research designs (i.e., experimental/quasi experimental, single-subject, correlation, qualitative), and contains five evaluation domains (i.e., Introduction, Method, Results, Discussion, Other) with quality indicators delineated within each domain. These domains guide the evaluation of the article and provide an APAT Quality of the Study rating (i.e., Level 1 = strong; Level 2 = moderate; Level 3 = weak). The two reviewers independently assessed each of the articles identified to determine the APAT quality. In instances of disagreement, articles were reassessed and discussed by the reviewers until there was 100% consensus.

Categorization of Themes

Using the constant-comparative method (Strauss & Corbin, 1990), data from the articles that met all of the inclusion criteria were individually reviewed and coded. Coding allowed the researchers to highlight and classify important areas that emerged from the data. Analysis for the coding and themes that appeared in this study consisted of open coding and axial coding (Strauss & Corbin, 1990). After all data sources were coded and compared with one another, the two investigators organized categories based on findings to determine keywords and themes found within the systematic review.

Results

In the initial search process, 197 articles were identified using the combination of keywords. From the abstract and title review, the investigators identified 28 articles that met the preliminary inclusion criteria. The articles were broken down by their research design and then read through by both investigators. After each article was reviewed using the inclusion criteria to guide the investigators, only two articles were found to have met all the inclusion criteria. The two articles were then independently evaluated by both of the investigators using the quality indicators from the APAT. See Figure 1 for an overview of the article review process.

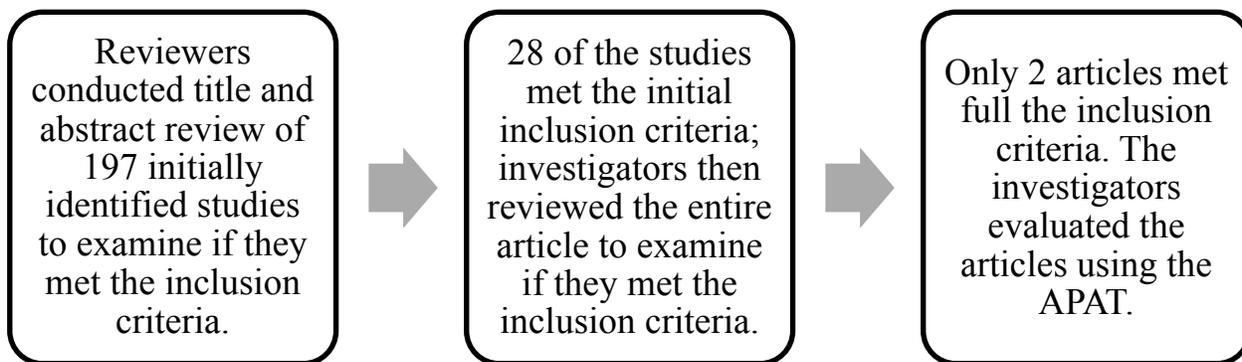


Figure 1. Overview of the article review process.

The two articles that were identified were: (a) ‘From Online Dialogue towards Critical Practice: Beginning School Administrators’ Reflections’ (Duncan, 2011); and (b) ‘Developing Educational Leaders: Using MBTI Form M in an Online Graduate Program’ (Flumerfelt, 2007). Both of the identified articles were given a Quality Rating of three. All of the articles that met the inclusion criteria were found using only a combination of the keyword groups ‘educational leadership’ and ‘adult learning’; there were no articles that met the inclusion criteria that were identified from the ‘physical education’ keyword group. Table 1 provides a summary of the quality indicators for each section of the APAT.

Table 1
Summary of the Adapted Physical Activity Taxonomy Evaluation

Author	Introduction	Method	Results	Discussion	Other	Overall Quality
Duncan (2011)	I	III	III	II	I	III
Flumerfelt (2007)	I	III	I	III	I	III

Note. I = Level 1/strong; II = Level 2/moderate, III = Level 3/weak (Carano, 2014).

Study One

Duncan’s (2011) article ‘From online dialogue towards critical practice: Beginning school administrators’ reflections’ used a qualitative case-study design. This study occurred over a three-month period. Data was collected from the participants ($n = 13$) through e-mails, online journals, online discussion boards, and an hour-long interview at the completion of the intervention. This study specifically used instructor-led discussion boards as a means to induce meaningful conversations between practicing school administrators ($n = 9$) and preservice administrators ($n = 4$). More specifically, the dialogues within the discussion boards were used to uncover the participants’ assumptions and values within the educational setting and within their professional lives. The author of this article found that through the online dialogues, the participants walked away with a deeper understanding on their own learning preferences and how their assumptions impact their leadership styles and professional lives. Table 2 displays an overview of the purpose, data collection methods, and key findings from this article.

Table 2
Overview of article one

Purpose	Data Collection	Key Results
To explore through a dialogical process how new and aspiring school leaders challenged their assumptions about learning and teaching and came to new understandings of self and the students they teach	Qualitative analysis conducted over three months. Data collection included e-mail correspondences with students and instructor, online journals, online discussion boards, and an hour long interview at the completion of the intervention	-Instructor-led discussion boards create meaningful conversation -Participants gained a deeper understanding of their personal learning preferences and how their assumptions about education impact their actions

Study Two

Flumberfelt's (2007) article, 'Developing educational leaders: Using MBTI form M in an online graduate program', utilized a qualitative design with 13 educational leadership graduate students ($n = 9$ practicing administrators; $n = 4$ preservice administrators). This study was guided by the research question, 'Can an online administration and debriefing course produce holistic student leadership learning outcomes?' (Flumberfelt, p. 105). Participants completed the Myers-Briggs Type Indicator survey prior to the beginning of the intervention; the results were used throughout the online course. The participants viewed presentations in an online format and were then given various discussion board exercises. The discussion board exercises focused on topics related to learning preferences, time management, and decision-making. Within the discussion board exercises, the participants were assigned to specific groups depending on their survey results. Participants used their survey results to answer questions and find contrasts with other participants' discussion board posts. Throughout the duration of the course, the participants interacted with one another and their instructor through an online forum, emails, and online journals. The author of this study concluded that one of the keys to their success within an online setting was high quality online instruction, and regular feedback and reflection. Table 3 displays an overview of the purpose, data collection methods, and key findings from this article.

Table 3
Overview of article two

Purpose	Data Collection Method	Key Results
To determine if quality learning experiences occurred for graduate leadership students when using online techniques for the administration and interpretation of the MBTI Self-Scoring Form M instrument.	Qualitative analysis of online presentations on the MTBI instrument and follow-up discussion board exercises.	-Online materials were used effectively to generate discussion board activity -Participants interacted positively within groups of their peers with similar MTBI results -A key to success was the high quality of online instruction, regular feedback and reflection

Note. MBTI = Myers-Briggs Type Indicator.

Themes

Several themes emerged in relation to the two articles' research design, data collection tools, and findings. Major characteristics that emerged with regard to methodology included: (a) a lack of an in-depth explanation of the online learning within each study, (b) a lack of research specifically on special education administrators, (c) a lack of experimental research, (d) a lack of well-defined frameworks guiding the online learning, and (e) similar tools and strategies used to implement the intervention (e.g., discussion boards, e-journals). In addition, both of these articles focused on preferences and interactions rather than on content knowledge outcomes. With regard to these studies' findings, one theme that emerged was that the participants consistently reported enjoying the use of online learning. A second theme that appeared was that the use of online discussions boards and online journals deepened the participants' understanding of the content and promoted interaction between the participants and the instructor.

Discussion

The purpose of this study was to conduct a systematic review of the recent literature to evaluate the use of online learning to disseminate information to school administrators using the APAT to evaluate the quality of the articles. Although numerous articles were initially identified with the keywords, only two articles met the full inclusion criteria, which were deemed to be of low quality according to the APAT criteria. Furthermore, none of the studies specifically focused on learning experiences associated with physical education; neither did they focus on special education administrators, which is the population that most typically oversees adapted physical education programs. Thus, there is a great need for future researchers to examine online learning programs that focus on physical education, and in particular adapted physical education, for school administrators.

The findings from the articles that met the inclusion criteria suggest that although there is some research that shows that school administrators may perceive online learning environments as beneficial (Duncan, 2011; Flumberfelt, 2007), there is a severe lack of rigorous research in the area of online learning and school administrators, especially with regard to experimental research.

As researchers design and conduct research to further establish trends and practices with relation to school administrators and online learning, they need to be mindful of the need for high quality research. Furthermore, researchers conducting online learning research with school administrators need to adequately report information critical to their research design and findings, such as the quality indicators outlined in the APAT (discussion section, results section) (Carano et al., 2014), in order to improve the quality of the study. Without a number of high quality research articles, agencies that develop online learning experiences for school administrators (e.g., educational leadership graduate programs) will continue to lack a foundation of knowledge on which to build and develop these experiences, thus leading to lower quality online learning programming for this unique population. If we are able to develop and disseminate more rigorous research with greater attention to the factors involved in a particular intervention within specific settings, we will be able to develop a number of evidence-based strategies that can be used within different settings (e.g., online settings versus face-to-face settings). Future researchers examining online learning for school administrators should consider using a taxonomy tool such as the APAT when designing and publishing research as to ensure that all of the components of high quality research are addressed.

Although high attrition rates are common within all experimental research, they are especially common when conducting research with school administrators (Camburn et al., 2016), which may be a contributing factor to the limited research that has been conducted regarding online learning for school administrators. School administrators are a particularly difficult group when conducting experimental designs, as this group is constrained by a lack of time, lack of interest, and varying levels of encouragement from their district staff. School administrators are autonomous leaders of complex organizations and are considered to be uniquely busy when compared to other education professionals. Although the research that has found it difficult to conduct empirical research with school administrators was conducted using traditional face-to-face methods (e.g., Camburn et al., 2016), it can be hypothesized that some of the same barriers found may be applied to research that is delivered fully online. For instance, Sener and Hawkins (2007) evaluated 16 studies that focused on online learning for university faculty members and found that one of the primary reasons for participants dropping out was a lack of time, which has also been a previously cited barrier when conducting experimental research with school administrators (Camburn et al., 2016). This may suggest that even when school administrators are given an easily accessible opportunity to participate in professional development, this population still has low participation rates, which leads to a lack of research regarding school administrators and online learning. Future researchers should examine how to motivate and retain school administrators who participate in online learning experiences and experimental research.

The apparent absence of any research that investigates school administrators' use of online learning in relation to physical education is concerning, as online learning may be one solution to school administrators' negative perceptions towards physical education and low levels of understanding of physical education (Bittner et al., in press; Gray, 2016; McNamara, 2018). For example, McNamara (2018) recently found that a majority of special education administrators ($n = 29$) scored less than 50% on a validated adapted physical education knowledge test, showing that there is a severe need for additional learning opportunities for special education administrators. When taking into account the challenges to conducting research with school administrators (e.g., lack of time) (Camburn et al., 2016) and the benefits of online learning (e.g., increased accessibility) (Elliot, 2017; Fidalgo, & Thormann, 2017), implies that online learning

may a viable solution to address the knowledge gap for school administrators with regard to physical education services for students with disabilities.

According to the findings from this study, a great deal of research in the area of online learning for school administrators is needed. Future researchers should examine the impact and feasibility of specific and well-defined types of online learning tools (e.g., webinars, podcasts, and social media) with specific populations within school administration (e.g., educational leadership graduate students, special education administrators). In addition, researchers in this area should describe in detail the online interventions that are employed. Refining the interventions and the population within research studies will give researchers more precise findings and allow for wider generalizations to the field of school administration and online learning. Future researchers should also examine school administrators' use of online learning tools to learn about specific areas within the education profession. This may be particularly important when addressing a field such as physical education for students with disabilities, which has been historically overlooked by school administrators (Bittner et al., in press; GAO, 2010; Gray, 2016; McNamara et al., in press; Stephens et al., 2011). Finally, researchers should also aim to identify the underlying reasons and motivation school administrators may want to use online learning for their professional learning. Although it has been found that school administrators have positive perceptions towards online learning (Duncan, 2011; Flumberfelt, 2007) and that online learning has cost and accessibility benefits (Elliot, 2017; Fidalgo, & Thormann, 2017), further research on this topic is needed to identify best practices to disseminate essential content through an online learning medium to school administrators.

Limitations

The limitations of this investigation should be acknowledged. The first limitation is that the APAT (Carano, 2014) is taxonomy that has not been published in a peer-review scholarly journal. Although the taxonomy is useful and has well-established validity, this taxonomy has not gone through the rigorous peer review process associated with most scholarly journals. The second limitation is that the use of a limited amount of databases (7) and keywords (10) may have resulted in excluding relevant articles. Future researchers should conduct larger systematic reviews that incorporate a greater number of databases and keywords to identify additional relevant articles on the topic of online learning for school administrators.

Conclusion

School administrators have a general lack of knowledge with regard to physical education and a negative perception towards physical education (GAO, 2010; Gray, 2016; McNamara, 2018). Although online mediums for learning may seemingly be a beneficial delivery method to inform school administrators about the field of physical education, there is limited research on the area of online learning and school administrators. Thus, the investigators conducted a systematic review of the literature to evaluate the use of online learning (e.g., online modules) as a means to increase knowledge on physical education for school administrators, using the APAT (Carano et al., 2014). Although the identified research showed that school administrators have positive views of online learning, more rigorous research is needed to identify best practices for school administrators engaged in an online learning environment. This is especially important to consider with regard to content areas, such as adapted physical education, that have been shown

to be historically overlooked by school administrators and educational leadership programs (Hodge & Akuffo, 2007; GAO; Gray, 2016; McNamara et al., in press; Stephens et al., 2011).

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