The Physical Educator Vol. 73 • pp. 193–212 • 2016
http://dx.doi.org/10.18666/TPE-2016-V73-I2-6388

ADVOCACY

Physical Education Websites and Webpages in the State of Alabama: Are We Painting a Positive Self-Portrait?

Nicholas Washburn and Oleg A. Sinelnikov

Abstract

A well-designed, high quality physical education (PE) website is beneficial for establishing communication, presenting a positive image, encouraging and improving parental involvement, encouraging students to take control of their own health, collaborating with other educational resources, and most important, improving student learning. However, there is a dearth of research in which PE program websites have been examined. We investigated and described the online presence of PE programs by examining the prevalence, content, and design quality of public school PE program websites in the state of Alabama. Data collection included a review of all public school websites (N = 1,280) in Alabama for the presence of webpages and websites dedicated to PE programs. PE program webpages and websites (n = 84) were analyzed according to content, control, consistency, and corroboration features. Findings revealed an exceptionally low prevalence and quality of PE program websites or webpages in Alabama public schools. The results of this study underline the continued need to create and maintain profes-

Nicholas Washburn is a graduate student, Department of Kinesiology, University of Alabama. Oleg A. Sinelnikov is associate professor, Department of Kinesiology, University of Alabama. Please send author correspondence to osinelnikov@ua.edu

sional websites for all PE programs that are educational and can be used as a tool, as a supplement to instruction, and to enhance student learning and teaching effectiveness.

Physical education (PE) has long been marginalized as a profession that lacks seriousness, substance, credibility, and purpose, a discipline, inundated with programs of low quality, which remains at risk for continued inclusion (Griffey, 1987; Siedentop, 1987; Locke, 1992). That is to say that a percentage of PE programs include superficial planning, include little meaningful instruction, yield minimal student learning, devalue assessment, and focus on student enjoyment and keep students engaged in activities that lack educational direction (Placek, 1983, 1984; Hastie & Siedentop, 1999; Hushman, Hushman, & Carbonneau, 2015). Moreover, many individuals, now graduated, possess negative recollections with respect to PE (Sidwell & Walls, 2014) unless they have participated in meaningful and engaging PE programs or practices (Sinelnikov & Hastie, 2010). For the sake of establishing PE as necessary and credible, it is crucial that professionals in the field advocate their charge with a clear, unified vision and market the positive contributions of their programs to the education and lives of children across the United States. In today's technologically advanced society, one of the effective ways of delivering such a message to stakeholders is through creating and maintaining informative, user-friendly, and captivating websites.

To make relevant this point, it is useful to briefly examine some of the literature regarding the effect of maintaining a professional online presence outside the field of education. In the field of business, for instance, website quality has been shown to influence customer satisfaction and purchasing intention (Bai, Law, & Wen, 2008). Moreover, Lee and Kozar (2006) revealed a direct, positive relationship between website quality and business performance. Studies have also demonstrated the significant effect that quality websites can have in the areas of hospitality (Schmidt, Cantallops, & dos Santos, 2008) and fantasy sports (Suh & Pedersen, 2010). Some may argue that the fields of education—specifically PE—and business, hospitality, and fantasy sports are not all that alike, but they all intersect at one crucial point. Positive perception is a prerequisite for success, and Raita and Oulasvirta (2011) empirically established a connection between positive first impressions and user satisfaction.

Research conducted by Google (Tuch, Presslaber, StöCklin, Opwis, & Bargas-Avila, 2012) has revealed that first impressions of a website are established in as little as 17 ms. These crucial first impressions, positive or negative, have been shown to remain relatively stable for an extended time (Staw & Hoang, 1995). When information is sought, impressions are formed based on how readily accurate information is made available. Incomplete, inaccurate websites may foster negative impressions, whereas comprehensive and accurate websites may nurture positive impressions about presented content. In short, having a professional, working website has been shown to be advantageous regardless of the field.

The mere presence of a high quality website does not guarantee that a program is of high quality, nor does absence of a website signal program ineffectiveness. In Rink's (2013) reference to ALT-PE, a quality PE website may be conceptualized as being a "necessary but insufficient" component of a thoroughgoing PE program. Furthermore, we do not dispute the benefits of effective and appropriate PE programs here. Indeed, PE, when delivered by specialists demonstrating effective teaching behaviors (for a review of this literature, refer to Graham & Heimerer, 1981; Silverman, 1991; Mawer, 1996; Siedentop & Tannehill, 1999) and by those who use a range of teaching styles (Mosston & Ashworth, 2008), innovative pedagogical models and practices (e.g., Siedentop, Hastie, & van der Mars, 2011), and culturally relevant content (Ennis, 1999), deserves to hold a position of significance in every student's K–12 experience.

Nevertheless, we contend that a possible avenue of promoting and showcasing an effective PE program, and thus enhancing its status in and beyond a school, may be through the creation of a high quality website. A well-designed, high quality PE website is beneficial in a number of ways. For example, websites have been well documented as a means for establishing communication (Barnd & Yu, 2002), presenting a positive image (Baker, 2001; LeMaster, 2000; Tucker & Hill, 2009), encouraging and improving parental involvement (Wilkinson & Schneck, 2003), encouraging students to take control of their own health (Elliott, Stewart, Stanec, McCollum, & Stanley, 2007), collaborating with other educational resources (Azuma, 1999), and most important, improving student learning (Hill, Tucker, & Hannon, 2010). Additionally, school websites are

used as informational portals to inform communities of programs and events (Elliott et al., 2007). Unfortunately, many PE departments are failing to take advantage of this great resource (Woods, Karp, Hui, & Perlman, 2008).

The benefits of effective websites for PE programs seem to be clear, but there is a dearth of research in which their prevalence and quality have been examined. In fact, the only descriptive study in which this important issue was specifically addressed was by Hill et al. (2010), who examined a sample of 285 school websites from two southern California counties. From this sample, less than one fifth (17.5%) maintained an active PE departmental website. Furthermore, most of the PE websites "were incomplete and lacked important design and content features" (p. 116). Hill et al.'s research was useful in providing an initial descriptive account of the current status quo, but the sample size used in the study was limited to two counties from one state.

Purpose of Study

Given the research on benefits of an effective website for an organization and the unsettling findings from two counties in California (Hill et al., 2010), further investigation of PE websites is warranted to determine if professionals in the field are truly making every effort to legitimize their discipline and elevate its status in schools. Therefore, the purpose of this study was to investigate and describe the online presence of PE programs by examining the prevalence, content, and design quality of PE websites among public schools in the state of Alabama.

The significance of extending Hill et al.'s (2010) research has theoretical and practical implications. First, this is the first descriptive research providing current and complete data relative to PE from all public school websites from one state. Second, the results of this research contribute to the national discussion about discourse of PE and its public image in schools and in society. Third, this research study paves the way for other researchers to examine the current situation in their states, nationally and globally. Finally, practical recommendations of improving the image of PE in public domain for different stakeholders (students, parents, administration, community, public officials) can be made based on the results of this study.

Method

Data Collection and Analysis

Because the data used in this study exist in the public domain and are freely available, no approval by the university institutional review board was warranted. The status of the study was exempt. Data collection and analysis was conducted in three distinct phases. In Phase I, to ensure complete and accurate data collection, a comprehensive database of Alabama public school websites was created. Schools and their websites were identified using the complete school district directory from the Alabama State Department of Education (ALSDE, 2015). Phase I data collection resulted in identification of 1,280 public schools from all Alabama counties. Specifically, 648 elementary, 36 intermediate, 269 middle, 327 high, and 48 K–12 schools were identified. Technical, alternative, and vocational schools were not included in the analysis.

In Phase II, every school website (N = 1,280) was reviewed to determine if it contained a website or a webpage dedicated to PE. The school websites and webpages that included a PE website were cataloged. During this phase, specific staff webpages located in a staff directory and websites or webpages created specifically for the PE program were differentiated. Only webpages and websites that contained additional information about the PE program were included in further analysis. Staff directory webpages that merely contained PE teachers' contact information were excluded. This phase of data collection yielded the identification of 84 schools that contained websites or webpages dedicated to their respective PE programs.

During Phase III, the PE websites and webpages from the identified schools (n = 84) were analyzed for content and design quality. The assessment of the content and design quality of PE websites was based on the work of Barnd and Yu (2002); Miller, Adsit, and Miller (2005); and Tucker and Hill (2009). Hill et al.'s (2010) PE website checklist, in particular, was used to collect data. This checklist outlines the essential elements of a high quality PE website. Specifically, the checklist contains four major categories: content (the actual information and material included), control (the navigational qualities of the website), consistency (the uniformity of content and design), and corroboration (citation information). Each major category con-

tains specific criteria. Websites and webpages identified in Phase II were thus analyzed according to each criterion within the four categories. A form of event recording (Cooper, 1974) was recruited to examine website quality. For this study, an event was not necessarily a demonstrated behavior, but a particular observable element categorized under one of the four categories on Hill et al.'s checklist. If a criterion was met, this event was recorded in a Microsoft Excel 2010 sheet under the appropriate category heading. Upon completion of data collection, frequencies of observed events were tabulated. Subsequently, the quality of the websites was expressed through percentages, calculated under each criterion by dividing the number websites relevant to a given criterion by the number of websites in which the criterion was observed.

Interobserver Agreement and Analysis Credibility

To reduce and eliminate data omissions and inaccuracies, the first author repeated Phases I and II of data collection and analysis. No additional schools and webpages were identified in this process. To calculate interobserver agreement, the second researcher completed Phase III of data analysis by randomly selecting and analyzing 28 of the 84 websites identified during Phase II. Thus, interobserver reliability was calculated on over 33% of the sample size. The interobserver agreement percentage was calculated by dividing the number of criterion agreements by the sum of criteria agreements and disagreements and then multiplying the result by 100. The acceptable criterion for interobserver agreement was set to 85% (Cooper, Heron, & Heward, 2007). Overall, the interobserver agreement was 99.8%, which constituted an acceptable level.

Results

The findings of the study revealed that only 84 (6.5%) of the 1,280 school websites had a website or webpage specifically dedicated to the PE department or program. Because this study is posited as an extension of previous research conducted in California, and in the interest of consistency, the percentages and frequencies for the checklist criteria are presented in the same manner as in Hill et al.'s (2010) study.

The frequencies and percentages of Alabama public school PE websites and webpages containing specific teacher information are

listed in Table 1. As with public school PE websites in California (Hill et al., 2010), teachers' names were the most common content feature among public school PE websites in Alabama (89.2%). In descending order, the remaining teacher information content features were e-mail addresses (69.0%), experience (45.2%), pictures and education (44.0%), phone numbers (40.5%), and hobbies (27.3%).

Table 1
Percentage of Public PE Program Websites and Webpages With Specific PE Teacher Information

	Yes		No	
Specific information	**%**	***N***	**%**	***N***
Names	89.2	75	10.8	9
E-mail address	69.0	58	31.0	26
Experience	45.2	38	54.8	46
Picture	44.0	37	56.0	47
Education	44.0	37	56.0	47
Phone number	40.5	34	59.5	50
Hobbies	27.3	23	72.7	61

The frequencies and percentages of Alabama public school PE websites and webpages containing specific fitness information are listed in Table 2. Only 23.8% of the PE websites or webpages in this study included fitness information. The five components of health-related fitness were the most common fitness content feature (15.4%). Links to health-related sites were the second most common fitness content feature (14.2%). Little information was provided with regard to fitness testing procedures (8.3%), even less was provided about Fitnessgram (4.8%), and no existing website or webpage displayed recent fitness scores or healthy target zones.

Table 2
Percentage of Public PE Program Websites and Webpages With Specific Fitness Information

	Yes		No	
Fitness information	**%**	***N***	**%**	***N***
Fitness information of any type	23.8	20	76.2	64
Five components of health-related fitness	15.4	13	84.6	71
Links to health-related sites	14.2	12	85.8	72
Fitness testing procedures	8.3	7	91.7	77
Fitnessgram information	4.8	4	95.2	80
Recent fitness scores	0	0	100	84

The frequencies and percentages of Alabama public school PE websites and webpages containing specific program content information are listed in Table 3. Most websites or webpages (86.9%) contained the school name, either in the title or elsewhere. Less than half (47.6%) contained a calendar on which to include class activities, upcoming events, or other pertinent information. Only 12.5% of the calendars were kept up to date, and the majority were blank. Department policies were the only other content feature that existed on over one third of the websites or webpages (38.0%). Most of the policies included rules, routines, and expectations for lessons. Fun links to sport/physical activity websites (19.0%) and course descriptions (15.4%) were the only remaining content features present on at least 15% of the examined websites or webpages.

Table 3
Percentage of Public PE Program Websites and Webpages With Specific Program Content Information

	Yes		No	
Specific information	**%**	***N***	**%**	***N***
School name	86.9	73	13.1	11
Calendar of – activities/homework/class	47.6	40	52.4	44
Calendar up to date	12.5	5	87.5	35
Department policies	38.0	32	62.0	52

Table 3 (cont.)

	Yes		No	
Specific information	**%**	***N***	**%**	***N***
Fun links to sport/physical activity websites	19.0	16	81.0	68
Course description	15.4	15	84.6	71
Department philosophy	13.1	11	86.9	73
Department goals (for any year)	13.1	11	86.9	73
Community resources for physical activity	13.1	11	86.9	73
Announcements of upcoming events	13.1	11	86.9	73
PE tip of the day/week/month	12.5	5	87.5	77
Team sports schedules	10.7	9	89.3	75
Motivational quotes	10.7	9	89.3	75
Yearly unit plans	9.5	8	90.5	76
State PE standards/course of study	5.9	5	4.1	79
Fund-raising activities	4.8	4	95.2	80
Parenting information to assist with learning	3.5	3	96.5	81
Search engine for kids	3.5	3	96.5	81
Assessment tools used in grading	3.5	3	96.5	81
Student recognition	2.3	2	97.7	82
Department motto	2.3	2	97.7	82
After school/intramural information	1.2	1	98.8	83
Cues for certain skills (pictures/video clips)	1.2	1	98.8	83
Access to current grades for students	1.2	1	98.8	83
Community resources for health information	1.2	1	98.8	83
Examples of great work or accomplishments	0.0	0	100.0	84

Control features enable visitors to navigate through and read the information presented on websites more efficiently (Barnd & Yu, 2002). The frequencies and percentages of Alabama public school PE

websites and webpages containing specific control features are listed in Table 4. The majority of the websites and webpages were easy to navigate (96.5%) and had fitted dimensions (95.2%), meaning the user did not have to scroll laterally to view all content on a page. Related topics were frequently grouped together (88.0%) in a logical sequence or layout (89.2%). A site map, providing users with a list of links to access specific information, was the next most common control feature (85.5%). A large percentage of the websites or webpages (79.0%) were linked to the school page. However, navigation buttons were absent from all websites, requiring visitors to rely on the back button in the browser to navigate between pages.

Table 4
Percentage of Public PE Program Websites and Webpages With Specific Control Features

	Yes		No	
Specific information	**%**	***N***	**%**	***N***
Easy navigation	96.5	81	3.5	3
Fitted dimensions	95.2	80	4.8	4
Appropriate page layout	89.2	75	10.8	9
Grouped related topics	88.0	74	12.0	10
Linked to school page	78.5	66	21.5	18
Site map	70.2	59	29.8	25
Navigation buttons	0.0	0	100.0	84

As noted by Hill et al. (2010), consistency features improve the readability of websites. The frequencies and percentages of Alabama public school PE websites and webpages containing specific consistency features in descending order are listed in Table 5. All fonts on every page were readable (100.0%). Most site links were accurate and working (94.0%). The appearance and placement of navigational icons across the site pages were consistent in 17 websites (94.4%). The backgrounds of 90.4% of sites and pages were consistent, and 83.3% were overall visually consistent. Almost 73% of the examined PE websites or webpages were error free. Font color (69.0%) and style (58.3%) were consistent in the majority of observed websites and webpages.

Table 5
Percentage of Public PE Program Websites and Webpages With Specific Consistency Features

	Yes		No	
Specific information	**%**	***N***	**%**	***N***
Readable font	100.0	84	0.0	0
Icon location	94.4	17	5.6	1
Accurate working links	94.0	79	6.0	5
Background color	90.4	76	9.6	8
Visual consistency	83.3	70	16.7	14
All underlined words are links	75.0	45	25.0	15
No grammatical/spelling errors	72.6	61	27.4	23
Design matches district site	72.6	61	27.4	23
Font color	69.0	58	31.0	26
Font style	58.3	49	41.7	35
Other site links are blue	44.1	15	55.9	19
More than 50% of page contains content	30.9	26	69.1	58
Visited links change color	9.7	8	10.3	74

The concept of corroboration describes "the elements that support the information on the web page" (Barnd & Yu, 2002, p. 12). The frequencies and percentages of Alabama public school PE websites and webpages containing specific corroboration features are listed in Table 6. Features in this section include, for example, header and footer information, copyright statements, and dates of site publication and updates. With an increasing number of websites on the Internet, headers containing key words that provide a description of a site and that are clear to the reader when the site is searched via a search engine (Yahoo, Google, etc.) are crucial. Most websites or webpages in this study (90.4%) contained key words in the home page header. These key words often included the school and department name. Notwithstanding, 70.2% of the websites or webpages in this study included a footer source and 60.7% included a copyright statement, and some of the corroborative features that should be in-

cluded in a professional footer were absent. For example, dates of site publication and next planned update were not present on any examined website or webpage.

Table 6
Percentage of Public PE Program Websites and Webpages With Specific Referencing Features

	Yes		No	
Specific information	**%**	***N***	**%**	***N***
Key words for search engines	90.4	76	9.6	8
Footer source	70.2	59	29.8	25
Copyright	60.7	51	39.3	33
Footer source phone #	27.3	23	72.7	61
Footer source mail address	27.3	23	72.7	61
Date of site publication	15.4	13	84.6	71
Date of last update	10.7	9	89.3	75
Footer source e-mail	5.9	5	94.1	79
Date of planned next update	0.0	0	100.0	84

Discussion

We investigated and described the online presence of PE programs by examining the prevalence, content, and design quality of PE websites of public schools in the state of Alabama. The most important and ominous finding was the exceptionally low prevalence of PE websites or webpages in public schools. Specifically, only 84 school websites out of 1,280 (6.5%) contained a website or webpage dedicated to the PE department or program. Furthermore, the overall quality of the existing PE websites or webpages was deemed low based on the criteria of content, control, consistency, and corroboration. These results are in line with Hill et al.'s (2010) research. The following discussion is organized according to the aforementioned criteria.

Content

The results of this study revealed the absence or the superficial level of PE content on the examined webpages. Although crucial, less

than 1 out of 10 PE websites provided yearly or unit block plans. To provide perspective, only eight of the 1,280 PE programs in the state of Alabama present any semblance of the scope and sequence of the subject online (.00625%). The most common information found on existing PE websites was related to policies and rules. Although such information may aid in class management, it does not speak to the content taught in PE.

One charge of PE is to educate children and adolescents in leading healthy lives and, in doing so, to lower the rate of childhood obesity in America (McKenzie & Lounsbery, 2013). Given that PE is arguably one of the few classes in a child's curriculum that directly contributes to combating obesity through physical activity, it seems not only appropriate but also necessary to include on a PE department website, at the least, information about physical activity, fitness, and opportunities for engagement in physical activity outside of school. Unfortunately, for most PE websites in Alabama that information was absent. Even health-related fitness components, the foundation of what is needed by students to be physically active, were mostly absent. Few websites or webpages included links to health-related sites or information regarding fitness testing procedures. Moreover, information pertaining to fitness (i.e., the five components of health-related fitness and how their levels affect lifestyle, fitness testing procedures, and how fitness is infused throughout the course curriculum) should be included on PE websites to aid in student learning, act as a resource for parents and family members, and advance the perception of PE in the eyes of administrators and policy makers.

The findings of this study also demonstrated that more than half of analyzed websites failed to include information about teachers' qualifications and their teaching experience. As a result, a public display of credibility of many PE teachers as specialists in their profession may have been compromised.

Control

As with the websites in Hill et al. (2010) with respect to control features, the PE websites in this study were easy to navigate, with related information being grouped together. However, this finding should be interpreted with caution because the ease of navigation for the majority of the websites or webpages was due to a lack of included content rather than to intended design.

Consistency

The percentages of the websites meeting the consistency criteria in this study were higher than those of other categories and lower than those previously reported (Hill et al., 2010). The reader is, again, suggested to consider the incompleteness of the analyzed websites when using the information as the basis for judgment. Withal, over a quarter of the PE websites or webpages contained at least one grammatical or spelling error. Thus, PE teachers are advised to further edit and proofread their website content.

Corroboration

On a positive note, most of the websites or webpages included key words in their headers for search engines, often in the form of the school name and department. The issue of *searchability* is important because it makes the website visible to those searching the Internet. Additionally, most websites or webpages included a footer source, informing the reader of which entity was responsible for the website content. Unfortunately, contact information for the footer source was often nonexistent. Quality webpages need to be current (Barnd & Yu, 2002) and should include a date of publication, most recent update, and next planned update (Everhart, 1997). The findings of this study demonstrated that few websites or webpages provided a date of last update. Worse yet, no websites or webpages listed dates of the next planned update. The ambiguity of the freshness of the content on the websites and webpages is disconcerting, especially given that the few dates of most recent updates occurred several years ago.

Recommendations and Conclusions

The National Standards and Grade-Level Outcomes for K–12 Physical Education (Society of Health and Physical Educators, 2014) describe general principles that include using technology (a) as a tool, (b) as a supplement to instruction, (c) to enhance learning, and (d) to enhance teaching effectiveness. The literature is abundant with research-based and practical suggestions regarding the recruitment of technological applications to further the mission of PE, including heart rate monitors and pedometers (Cuddihy, Pangrazi, & Tomson, 2005; Morgan, Pangrazi, & Beighle, 2003), websites and Web-based portfolios (Erwin & Valley, 2005; Hastie & Sinelnikov, 2007), iPads

(Sinelnikov, 2012), and interactive video games (Schifferle, 2010; Trout & Christie, 2007). The online presence for K–12 PE programs is arguably more important given the reported benefits of maintaining a professional working website (Bai et al., 2008; Hill et al., 2010; Lee & Kozar, 2006; Miller et al., 2005; Schmidt et al., 2008; Suh & Pedersen, 2010). The results of this study underline the continued need for all PE programs to "have a comprehensive, well organized, and user friendly website" that is educational (Hill et al., 2010, p. 9).

We concede that sufficient time and effort are required on the part of PE teachers to create and maintain quality websites dedicated to their programs. However, when websites are created with a purpose and the four general principles of the appropriate technology use are adhered to (Society of Health and Physical Educators, 2014), we contend that these efforts are justified.

In the creation of program websites, we recommend that PE teachers (a) collaborate with information technology (IT) professionals within their districts to establish an online presence that portrays their discipline as credible and beneficial; (b) connect course material with participation opportunities and resource outlets in the community via website links, thus further facilitating student learning; and (c) frequently update their websites for the purposes of providing visitors with current information and communicating an unspoken message that the teachers place value in their work and in their charge. Furthermore, PE as a profession may be well served by PE teacher education programs equipping future teachers with the skills needed to create informative and professional departmental websites.

Future descriptive research is warranted in other states and countries to generate a clearer picture of the online presence of PE in America and globally. Furthermore, the extent to which the quality of a PE program website influences students', teachers', administrators', parents', and policy makers' perceptions of PE needs to be examined.

We concede that a high quality website may not translate to a high quality program. However, a high quality program in the modern era should include a high quality website. Understandably, PE teachers are not expected to be information technology experts and their websites should not be held to the same standard as websites

of major corporations. Nonetheless, PE teachers should consider attempting to promote their discipline as educationally significant and of high quality through the use of a professional website. If the rest of the world is advancing with and using technology to grow and get ahead, so should PE professionals.

References

Alabama State Department of Education. (2014). In schools & systems. Retrieved from http://www.alsde.edu/

Azuma, J. (1999). Creating educational web sites. *IEEE Communications Magazine, 37,* 109–113. http://dx.doi.org/10.1109/35.751506

Bai, B., Law, R., & Wen, I. (2008). The impact of website quality on customer satisfaction and purchase intentions: Evidence from Chinese online visitors. *International Journal of Hospitality Management, 27,* 391–402. http://dx.doi.org/10.1016/j.ijhm.2007.10.008

Baker, K. (2001). Promoting your physical education program. *Journal of Physical Education, Recreation, & Dance, 72*(2), 37–40. http://dx.doi.org/10.1080/07303084.2001.10605833

Barnd, S. M., & Yu, C.-C. (2002). Creating an effective web site. *Journal of Physical Education, Recreation, & Dance, 73*(5), 11–12. http://dx.doi.org/10.1080/07303084.2002.10607802

Cooper, J. O. (1974). *Measurement and analysis of behavioral techniques.* Columbus, OH: Merrill.

Cooper, J. O., Heron, T. E., & Heward, W. L. (2007). *Applied behavior analysis.* Upper Saddle River, NJ: Pearson Prentice Hall.

Cuddihy, T. F., Pangrazi, R. P., & Tomson, L. M. (2005). Pedometers: Answers to FAQs from teachers. *Journal of Physical Education, Recreation, & Dance, 76*(2), 36–40, 55. http://dx.doi.org/10.1080/07303084.2005.10607333

Elliott, S., Stewart, S., Stanec, A., McCollum, S., & Stanley, M. A. (2007). Uses of the internet by health and physical education teachers. *Strategies, 20*(5), 19–27. http://dx.doi.org/10.1080/08924562.2007.10590735

Ennis, C. D. (1999). Creating a culturally relevant curriculum for disengaged girls. *Sport, Education, and Society, 4,* 31–49. http://dx.doi.org/10.1080/1357332990040103

Erwin, H., & Valley, J. (2005). Creating a web site for advocacy. *Teaching Elementary Physical Education, 16*(5), 26–30.

Everhart, N. (1997). Web page evaluation: Views from the field. *Technology Connection, 4*(3), 24–26.

Graham, G., & Heimerer, E. (1981). Research on teacher effectiveness: A summary with implications for teaching. *Quest, 33,* 14–25. http://dx.doi.org/10.1080/00336297.1981.10483718

Griffey, D. C. (1987). Trouble for sure a crisis—perhaps: Secondary school physical education today. *Journal of Physical Education, Recreation, & Dance, 58*(2), 20–21. http://dx.doi.org/10.1080/07303084.1987.10609500

Hastie, P., & Siedentop, D. (1999). An ecological perspective on physical education. *European Physical Education Review, 5*(1), 9–30. http://dx.doi.org/10.1177/1356336X990051002

Hastie, P. A., & Sinelnikov, O. A. (2007). The use of web-based portfolios in college physical education activity courses. *The Physical Educator, 64,* 21–28.

Hill, G. M., Tucker, M., & Hannon, J. (2010). An evaluation of secondary school physical education websites. *The Physical Educator, 67,* 114–127.

Hushman, G., Hushman, C., & Carbonneau, K. (2015). Addressing educational reform: Exploring PE metrics as a system to measure student achievement in physical education. *The Physical Educator, 72,* 179–191.

Lee, Y., & Kozar, K. A. (2006). Investigating the effect of website quality on e-business success: An analytic hierarchy process (AHP) approach. *Decision Support Systems, 42,* 1383–1401. http://dx.doi.org/10.1016/j.dss.2005.11.005

LeMaster, K. (2000). Build a web page and promote your program. *CAHPERD Journal Times, 1,* 12–13.

Locke, L. F. (1992). Changing secondary school physical education. *Quest, 44,* 361–372. http://dx.doi.org/10.1080/00336297.1992.10484062

Mawer, M. (1996). *The effective teaching of physical education.* New York, NY: Longman.

McKenzie, T. L., & Lounsbery, M. A. (2013). The pill not taken: Revisiting physical education teacher effectiveness in a public health context. *Research Quarterly for Exercise and Sport, 85,* 287–292. http://dx.doi.org/10.1080/02701367.2014.931203

Miller, S., Adsit, K. I., & Miller, T. (2005). Evaluating the importance of common components in school-based websites: Frequency of appearance and stakeholders' judged value. *TechTrends, 49*(6), 34–41. http://dx.doi.org/10.1007/BF02763728

Morgan, C. F., Jr., Pangrazi, R. P., & Beighle, A. (2003). Using pedometers to promote physical activity in physical education. *Journal of Physical Education, Recreation, & Dance, 74*(7), 33–38. http://dx.doi.org/10.1080/07303084.2003.10609235

Mosston, M., & Ashworth, S. (2008). *Teaching physical education* (1st online ed.). Retrieved from http://www.spectrumofteachingstyles.org/e-book-download.php

Placek, J. H. (1983). Conceptions of success in teaching: Busy, happy, and good? In T. J. Templin & J. K. Olsen (Eds.), *Research on teaching in physical education* (pp. 46–56). Champaign, IL: Human Kinetics.

Placek, J. H. (1984). A multi-case study of teacher planning in physical education. *Journal of Teaching in Physical Education, 4*(1), 39–49.

Raita, E., & Oulasvirta, A. (2011). Too good to be bad: Favorable product expectations boost subjective usability ratings. *Interacting With Computers, 23,* 363–371. http://dx.doi.org/10.1016/j.intcom.2011.04.002

Rink, J. E. (2013). Measuring teacher effectiveness in physical education. *Research Quarterly for Exercise and Sport, 84,* 407–418. http://dx.doi.org/10.1080/02701367.2013.844018

Schifferle, K. (2010). Wii Sports Resort: "Fencing it isn't, fun it is." *American Fencing, 60*(1), 37.

Schmidt, S., Cantallops, A. S., & dos Santos, C. P. (2008). The characteristics of hotel websites and their implications for website effectiveness. *International Journal of Hospitality Management, 27,* 504–516. http://dx.doi.org/10.1016/j.ijhm.2007.08.002

Sidwell, A. M., & Walls, R. T. (2014). Memories of physical education. *The Physical Educator, 71,* 682–698.

Siedentop, D. (1987). High school physical education: Still an endangered species. *Journal of Physical Education, Recreation, & Dance, 58*(2), 24–25. http://dx.doi.org/10.1080/07303084.1987.10609502

Siedentop, D., Hastie, P. A., & van der Mars, H. (2011). *Complete guide to sport education.* Champaign, IL: Human Kinetics.

Siedentop, D., & Tannehill, D. (1999). *Developing teaching skills in physical education.* Mountain View, CA: Mayfield.

Silverman, S. (1991). Research on teaching in physical education. *Research Quarterly for Exercise and Sport, 62,* 352–365. http://dx.doi.org/10.1080/02701367.1991.10607533

Sinelnikov, O. A. (2012). Using the iPad in a sport education season. *Journal of Physical Education, Recreation, & Dance, 83*(1), 39–45. http://dx.doi.org/10.1080/07303084.2012.10598710

Sinelnikov, O. A., & Hastie, P. A. (2010). Students' autobiographical memory of participation in multiple sport education seasons. *Journal of Teaching in Physical Education, 29,* 167–183.

Society of Health and Physical Educators. (2014). *National standards & grade-level outcomes for K–12 physical education.* Champaign, IL: Human Kinetics.

Staw, B. M., & Hoang, H. (1995). Sunk costs in the NBA: Why draft order affects playing time and survival in professional basketball. *Administrative Science Quarterly, 55,* 474–494. http://dx.doi.org/10.2307/2393794

Suh, Y. I., & Pedersen, P. M. (2010). Participants' service quality perceptions of fantasy sports websites: The relationship between service quality, customer satisfaction, attitude, and actual usage. *Sport Marketing Quarterly, 19*(2), 78–87.

Trout, J., & Christie, B. (2007). Interactive video games in physical education. *Journal of Physical Education, Recreation, & Dance, 78*(5), 29–34, 45. http://dx.doi.org/10.1080/07303084.2007.10598021

Tuch, A. N., Presslaber, E. E., StöCklin, M., Opwis, K., & Bargas-Avila, J. A. (2012). The role of visual complexity and prototypicality regarding first impression of websites: Working towards understanding aesthetic judgments. *International Journal of Human-Computer Studies, 70,* 794–811. http://dx.doi.org/10.1016/j.ijhcs.2012.06.003

Tucker, M., & Hill, G. (2009). A checklist for designing and evaluating physical education program web sites. *Journal of Physical Education, Recreation, & Dance, 80*(9), 43–47. http://dx.doi.org/10.1080/07303084.2009.10598394

Wilkinson, C., & Schneck, H. (2003). The effects of a school physical education and health website on parental knowledge of the program. *The Physical Educator, 60,* 162–168.

Woods, M., Karp, G., Hui, G., & Perlman, D. (2008). Physical educators' technology competencies and usage. *The Physical Educator, 65,* 82–99.