

An Examination of Technology Comfort Level and Usage in Physical Education



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Introduction

1. Technology and Physical Education appears to be an oxymoron, but the terms can complement each other. Video game consoles such as Wii (Nintendo, 2013), pedometers, heart rate monitors, mobile IOS devices, interactive whiteboards, digital video recorders, etc., can be used to help assess, and teach in physical education. How prepared are Physical Education teachers to utilize this technology?
2. NASPE's position statement addresses appropriate practices of technology use in Physical Education (NASPE, 2005a).
3. A variety of articles have been published describing technologies available, appropriate practices, and strategies that should be used to implement technology successfully into Physical Education (NASPE, 2009, 2007, & 2004; Lee, 2007).
4. When teachers become more competent with the technology available, then their effectiveness is increased, and thus yields enhanced student learning (Zemelman, Daniels, & Hyde, 1998).
5. A study examining perceptions of ability and use of technology in K-12 Physical Education found that most Physical Education instructors had little experience concerning technology in a Physical Education class setting and had fewer opportunities to learn how to use technology (Woods, Karp, Hul & Perlman, 2008)

Purpose

- The primary purpose of the study was to determine the comfort level of Physical Education teachers when they integrated technology in the gymnasium.
- The secondary purposes included determining specific technologies devices used in the gymnasium setting, types of professional development provided for technology use, and potential barriers associated with technology usage for Physical Educators.

Methods

- The study surveyed practicing teachers in Central District of SHAPE America identified by the CDSHAPE association.
- The survey was administered by an online survey system, Qualtrics®
- Questions developed for the survey were aligned with the Nat'l Education Technology for Teacher standards, and related to NASPE position statements on technology.
- Content validity of the survey was ensured by the completion of reviewer by professors from two Universities with degrees in Physical Education, Sport Administration, Exercise Science, and Instructional Technology.
- CDSHAPE board reviewed and approved the content prior to administration of the survey.



Methods (Continued)

- The survey consisted of directional questions developed to ask queries pertaining to Physical Educator's response to questions related to the research questions.
- Following data collection, survey responses were uploaded and analyzed using SPSS version 2.0.
- Descriptive statistics included: gender, years of teaching experience, grade level taught.
- Variables analyzed included: comfort level and implementation barriers (5 pt Likert scale [strongly agree (SA), agree (A), neutral (N), disagree (D), strongly disagree (SD)])
- Statistical analysis used to determine these outcomes were empirical sound descriptive notations, relationship correlations, and T-Tests. Significant alpha level was established at 0.05.

Results

A survey of 178 practicing Physical Education teachers located in the Midwest completed the online questionnaire in the spring of 2014. The survey was a census from 2,212 CDSHAPE members, with a 12.4% completion rate

Table 1. Teacher Comfort Level with Technology Usage in the Classroom

		Strongly Agree n (%)	Agree n (%)	Disagree n (%)	Strongly Disagree n (%)
Comfort	Integration	35(31)	106(57)	22(11)	1(1)
	Tech knowledge	40(21.5)	109(5)	37(19)	-
Professional training		25(13.4)	73(39)	77(41)	11(5.9)
	Resources	26(14)	93(50)	56(30)	11(5.9)

Table 2. Physical Education Teacher Comfort Level and Preparedness to Utilize Technology

		Combined M (SD)	Experience			
			1-5	6-10	11-15	16+
Comfort	Integration	1.82 ± 0.66	1.71	1.63	1.63	1.88
	Knowledge	1.98 ± 0.66	1.79	1.88	2.00	2.01
Preparedness	Professional development	2.40 ± 0.83	2.29	2.56	2.21	2.44
	Resources	2.28 ± 0.81	2.21	2.50	2.05	2.28

Table 3. Preference of Professional Development

	Rank	Agree (%)	Mean (SD)
Face to Face Workshop	1	58.95	1.42 ± (0.70)
Webinar	2	92.48	2.31 ± (0.93)
Online Class	3	32.94	2.76 ± (0.83)
Technology Book	4	11.50	3.67 ± (0.77)



Discussion

Technology can be implemented in a number of areas within the teaching of Physical Education: unit and lesson plan preparation; classroom management; communication with parents and students; instruction and feedback; and assessment. However, too often physical educators implement technology only to meet the standards without discovering the how, why, and when to best use the technologies available. Physical Education teachers must have a systematic strategy in place to keep technology current.

Physical Education teachers reported they felt comfortable with technology use in their classroom; 87.7% reported to agree that they felt comfortable integrating technology in existing student activities and 80% agreed that they were comfortable with the knowledge base of how to use the technology that was available at their school. Over 45% reported that they had not received adequate professional development on technology devices and usage. (See Table 1).

Teachers with 16+ years of experience reported to have the most difficulty in integration and technology knowledge represented by higher discomfort levels compared to teachers with less experience. Furthermore, Physical Education teachers with 6-10 years of experience noted higher discomfort levels concerning the lack of professional development and adequate resources for technology use (See Table 2).

Conclusion

- Technology is constantly changing and evolving training is a valuable asset to technology implementation for teachers of all ages and experience.
- The amount of professional development directly related to the occupation and technology is still lacking but improving.
- This study presents data suggesting that the integration of technology is important and additional resources and professional development need to be provided to successfully implement technology into the Physical Education curriculum.