

PEDAGOGY

Preparing Adapted Physical Educators to Teach Students With Autism: Current Practices and Future Directions

Sean Healy, Joann P. Judge, Martin E. Block, Eun Hye Kwon

Abstract

For many students with autism spectrum disorder, physical education is the responsibility of an adapted physical education specialist. In this study, we examined the training focused on teaching students with autism spectrum disorder received by a sample of 106 adapted physical education specialists. Competencies necessary on a course to train adapted physical education specialists to work with students with autism spectrum disorder were also defined using a two-step process. First, a group of physical education and special education experts generated a provisional list of competencies that they saw as necessary. Participants in this study then provided their opinions on the validity of this list. Additional suggestions for future training were also sought from participants.

Certified adapted physical education specialists (CAPEs) are a select group of teachers who have specific training in physical education (PE) for students with disabilities. The competencies necessary to be a CAPE have been outlined (Lytle, Lavay, & Rizzo, 2010); they

Sean Healy is assistant professor of adapted physical education and pedagogy, Department of Kinesiology and Recreation Administration, Humboldt State University. Joann P. Judge is a doctoral student in adapted physical education, University of Virginia. Martin E. Block is professor, Kinesiology Department, University of Virginia. Eun Hye Kwon is assistant professor in the Department of Health, Physical Education, Recreation, and Athletics, Northeastern Illinois University. Please send author correspondence to sean.healy@humboldt.edu

include general PE content knowledge, safety, disability studies, assessment methods, knowledge of laws and individualized education programs (IEPs), individual teaching and learning styles, adaptations and modifications, collaboration and consultation, advocacy and inclusion practices, community and family resources, and professional leadership.

Such specialized skills and knowledge are essential when teaching students with unique, complex needs. Students with autism spectrum disorders (from here on referred to as autism) are one such population. Autism is the most prevalent developmental disability, affecting 1 in 68 children in the United States (Centers for Disease Control and Prevention, 2014). With its definition recently amended (American Psychiatric Association, 2013), it is now defined by symptoms present in two categories (as opposed to the previous three categories): social and communication deficits and repetitive and restrictive behaviors. A recent meta-analysis also demonstrates the prevalence of motor deficits in children with autism, and the researchers concluded that motor coordination deficits, including movement planning, upper extremity motor functioning, and gait and balance, are cardinal features of autism (Fournier, Hass, Naik, Lodha, & Cauraugh, 2010).

As PE environments can be highly physical, social, dynamic, competitive, and sensory stimulating, the symptoms associated with autism may conflict with the demands of PE. Researchers have recently highlighted many concerns that general physical educators have when including students with autism into their programs including inattentive and hyperactive behaviors, social isolation, emotional difficulties, problems understanding and performing tasks, and a narrow focus and inflexible adherence to routines (Obrusnikova & Dillon, 2011). However, overcoming these challenges is imperative because physical activity may have great benefits for children with autism. For example, Pan (2014) documented that physical activity interventions improve motor skills and fitness levels in children with autism. Therefore, a focus on motor skills and fitness levels is warranted and of utmost necessity so individuals with autism may attain and enjoy a more active lifestyle.

For many students with autism, PE is the responsibility of CAPEs. It is assumed that CAPEs receive specialized training and

experiences needed to provide an appropriate, safe, and successful PE program for students with autism. However, little is known about the method of preparing CAPEs to teach students with autism. The purpose of this study was to (a) survey practicing CAPEs to understand their training experiences in their APE teacher education program specific to teaching students with autism and (b) define the specific content and information needed in APE teacher preparation programs to prepare future APE specialists effectively to teach students with autism.

Method

Participants

To achieve the purposes of the research, 400 randomly selected CAPEs were e-mailed an invitation to participate in the study; contact details were obtained from the database of CAPEs housed in the Adapted Physical Education National Standards (APENS) office. Sixty-six e-mails were incorrect, resulting in 344 CAPEs receiving the e-mail invitation to participate. One-hundred six CAPEs, representing 22 states (see Table 1 for the distribution of participants per state), completed the survey for a 31% response rate. Age range of participants was 22 to 67 with a mean age of 42 years. Seventy-two percent of respondents were female. To achieve the second purpose, in addition to the CAPEs, a group of experts in APE and autism ($N = 11$) was also involved. This group consisted of professors of APE, professors specializing in autism, and other experts with practical experience in teaching students with autism and in preparing CAPEs. They were responsible for creating the provisional list of competencies deemed necessary on a course focused on APE and autism.

Table 1
Participants per State

State	No. of participants	State	No. of participants
AK	2	CA	1
AL	1	DE	2
AZ	1	FL	2

Table 1 (cont.)

State	No. of participants	State	No. of participants
GA	5	NM	1
IL	5	NY	6
IM	1	NC	3
MA	1	ND	1
MD	11	OH	8
MI	2	OR	1
MT	1	PA	1
NH	1	RETIRED	3
NJ	1	MX	1

Procedures

A survey methodology was used to fulfill both research purposes. First, to understand teaching and training experiences of the CAPEs, participants were asked to provide information pertaining to the number of years of experience they had in teaching students with autism as well as the nature of and their satisfaction with the training received focused on teaching students with autism.

To fulfill the second aim, defining content for a course on APE and autism, a two-step process was followed. First, the expert group generated a preliminary list of competencies deemed necessary for CAPEs to instruct students with autism effectively. Together, experts generated a final list of 17 competencies that they believed were important for CAPEs to know with regard to teaching PE to students with autism. Second, an online survey was used to assess the CAPEs' opinions on the 17 competencies defined by the experts. Participants were specifically asked, "Please provide your feedback on whether a particular content/competency regarding autism should be included in an APE preparation program." Participants responded to the necessity of each content/competency using a 1–5 Likert scale with 1 = *definitely yes* and 5 = *definitely no*. Finally, participants were asked if they had suggestions as to how APE teacher preparation programs could most effectively prepare future CAPEs to teach students with autism. This ensured the final list of competencies most reflected the demands experienced by practicing CAPEs.

Data Analysis

To address the first research question, quantitative and qualitative methods were used. Basic descriptive statistics were computed for quantitative items. For open-ended questions, including how “teacher preparation programs could most effectively prepare physical educators to work with students with autism” and identification of what “content areas (if any), related to teaching students with autism, do you feel you require additional training in,” the researchers independently coded the answers and grouped them into themes using the method suggested by Braun and Clarke (2006).

To address the second research question, defining the content necessary in APE teacher preparation programs focused on students with autism, quantitative and qualitative methods were used. To evaluate the CAPEs’ opinions on the validity of the experts’ provisional list of competencies, descriptive statistics were computed. To analyze the CAPEs’ suggestions of additional competencies that they deemed necessary for future APE teacher training programs, thematic analysis was again used (Braun & Clarke, 2006).

Results

Education

Sixty-eight percent ($n = 72$) of respondents held a master’s degree as their highest level of education, 17% ($n = 18$) completed a bachelor’s degree, and 15% ($n = 16$) completed a doctorate degree. The majority of respondents completed a bachelor’s degree in health and PE ($n = 70$), followed by kinesiology ($n = 9$), with some students studying subjects including special education ($n = 2$), exercise sports science ($n = 4$), and movement ($n = 1$).

The specific major for the 72 who completed a master’s degree varied. Of these participants, more than half ($n = 39$) majored in APE, 14% in special education ($n = 10$), and 13% in PE ($n = 9$). The remaining 19% majored in subjects such as administration and curriculum ($n = 6$), exercise and sport science ($n = 2$), health ($n = 4$), psychology ($n = 1$), and kinesiology ($n = 1$).

In regard to preparation to teach students with autism, 83% of participants did not take a specific course in teaching students with autism in PE, and 61% did not take a specific course in special edu-

cation related to autism. Only 48% of respondents stated that they were satisfied with how their graduate program in APE prepared them to work with students with autism, leaving 14% dissatisfied, 5% very dissatisfied, and 33% neutral. On average, the participants had 12.9 years of experience teaching students with autism.

Training Needs

Participants were asked to identify areas in which they felt they required additional training related to teaching students with autism. Forty-eight participants responded to this question, identifying 11 areas (Table 2). The most prevalent area highlighted was behavior management, which 25% of participants identified as being an area in which they required further training. This was followed by communication (6%) and curriculum development (6%).

Table 2

Areas in Which APE Specialists Expressed a Need for Further Training

Content area	No. of participants
1. Behavior management	12
2. Communication strategies	3
3. Curriculum development	3
4. Technology/assistive devices	1
5. Individualized education programs	1
6. Interaction with paraprofessionals	1
7. Professional collaboration with other APE specialists	1
8. Assessments	1
9. Inclusion	1
10. Visual supports	1
11. Teaching a self-contained class of students with ASD	1

Suggestions for Future Teacher Preparation

The majority (over 93%) of CAPEs agreed (yes or definitely yes) with the expert-generated list of competencies necessary for teaching students with autism. As a result, 17 items were agreed upon as being the recommended content requisites for a course on au-

tism for preservice CAPEs (see Table 3). When asked for additional suggestions on how to prepare CAPEs most effectively to teach students with autism, participants identified no additional competencies. However, many of the respondents noted the following as being particularly important for the training of preservice CAPEs to teach students with autism: practical experience (42%), observation of students with autism (9%), and training in behavioral support strategies (13%).

Table 3

Participant Agreement With the Expert-Generated List of Competencies Deemed Necessary on a Course for Preparing APE Specialists to Teach Students With Autism

Content areas	APE specialist agreement
1. Knowledge of sensory impairments associated with ASD	97%
2. Knowledge of motor impairments associated with ASD	97%
3. Knowledge of social impairments associated with ASD	95%
4. Strategies for communicating with students with ASD	97%
5. Developing social skills related to physical activity (turn taking, choosing partners, etc.)	98%
6. Knowledge of behavioral characteristics associated with ASD	97%
7. Positive behavioral support strategies	97%
8. Knowledge of the effect of common medical conditions for individuals with ASD	84%
9. Motivational strategies	93%
10. Methods for adapting activities/games for students with ASD	96%
11. How to modify assessments for students with ASD	93%
12. Awareness of potential safety concerns related to students with ASD	97%
13. How to create a safe and supportive learning environment	96%
14. Curriculum planning and goal and objective setting for students with ASD	89%
15. Knowledge of specific models and strategies to teach students with ASD (e.g., TEACCH model, social stores, modeling, and prompting)	94%
16. Experience through observing a student with ASD	88%
17. Practical experience of working with a student with ASD	98%

Discussion

Defining Course Content

According to this study, it is suggested that current APE teacher training programs take a closer look at how training related to teaching students with autism is provided. Only 48% of the respondents were satisfied with how their graduate program in APE prepared them to work with students with autism. It is suggested that the competencies identified in this study (Table 3), as agreed upon by experts and CAPEs, be incorporated as objectives in APE course syllabi. This would aid in the development of comprehensive teacher training programs and ensure that future CAPEs have the knowledge and insight necessary to teach PE to students with autism.

For preservice CAPEs, it appears that a specific course (or at a minimum more information in existing coursework) on autism is warranted. One issue with creating new courses or strengthening existing courses is the limited knowledge about autism of faculty in many universities. Piletic and Davis (2010) found that only 60% of professors teaching an introduction to APE course had terminal degrees in APE. In addition, autism is still a relatively new area such that special education and PE departments may not have professors with specialization on this topic. One solution is to provide distance education supplements via e-learning on issues related to autism to university faculty who are responsible for teaching APE coursework (Scott & Scott, 2010). Such e-learning supplements, created by experts in autism, could be posted on the Web and then used by faculty with limited expertise on teaching students with autism. In addition, e-learning allows course instructors to present videos for the student to see the use of specialized techniques, such as visual supports, video modeling, and peer tutoring. E-learning is still a relatively new teaching tool in APE, but it appears to have tremendous potential for providing new information and support to preservice and in-service physical educators.

The participants in this study also revealed that in-service CAPEs are in need of training to teach students with autism better; most prominently they reported a need for increased training in behavior management, communication strategies, and curriculum development. Professional development focused on these needs should be

offered to in-service CAPEs, whether through traditional professional development workshops or online courses.

Practical Experiences

Participants of this study noted that the practical experience of working with students with autism is a key component in CAPEs' preparation. Indeed, practical experiences have long been identified as an integral component of teacher preparation programs (Van Laarhoven, Munk, Lynch, Bosma, & Rouse, 2007) and have been touted as the most influential educational experience preservice teachers will have (Stowitschek, Cheney, & Schwartz, 2000). Although researchers have not yet examined the effect of the practical experience on CAPEs, they have revealed improvements in attitude and competence toward teaching students with disabilities in preservice general PE teachers after completing a practical experience (Ellis, Lepore, & Lieberman, 2012; Hodge, Tannehill, & Kluge, 2003). It is clear that the practicum experience for CAPEs could provide such benefits, allowing for the knowledge and skills learned in class to be applied and a positive attitude and disposition to teaching students with autism to be fostered. The preservice teacher should be fully supported through the teaching practicum and feedback provided on their teaching from experts. In addition, opportunities should be provided for the teacher to work with diverse student populations. The experience gained from teaching a student with autism is not comparable to the time spent with another student population; the diversity of students in schools should be reflected in a preservice teacher's placement setting. Research by Hodge, Davis, Woodard, and Sherrill (2002) showed that the practicum type (off campus and on campus) was not significantly different in the effects on the preservice teacher. Therefore, educators of CAPEs should consider both options as viable in their efforts to prepare their students.

Increased Training in Behavioral Support Strategies

Reschly and Holdheide (2008) found that teachers who are skilled in evidence-based instruction, classroom organization, and behavior management had the competencies to establish effective learning environments. However, novice teachers have expressed a lack of preparedness and readiness to deal with problematic behaviors (Cooper, Kurtts, Baber, & Vallecorsa, 2008), especially among

students with special needs in inclusive settings (Billingsley, Israel, & Smith, 2011; Regan & Michaud, 2011). Research with general PE teachers and CAPEs has revealed several behavioral challenges associated with teaching students with autism (Lavay, Guthrie, & Henderson, 2014; Obrusnikova & Dillon, 2011). Similarly, participants in this study expressed a need for increased training in behavioral management strategies. Future CAPE training programs should address these needs by providing evidence-based practices to their students, for example, use of visual schedules and visual cues, use of alternative forms of communication (i.e., pictures, sign language), positive reinforcement, and establishing routine (Groft-Jones & Block, 2006). In addition, preservice CAPEs should be given the opportunity to implement these newly learned strategies in practical settings. In-service teachers must also be given the opportunity to acquire these strategies through professional development workshops. This recommendation is reflected in research in which researchers have called for increased quality in in-service training in behavior management for CAPEs (Lavay et al., 2014). Increased competence in behavioral support strategies would result in more effective CAPEs and more success for students with autism in PE.

Conclusions

The CAPEs in this study provided insights into their readiness to teach students with autism and gave their perspective of how teacher education programs can best prepare future CAPEs. Results reveal a high level of dissatisfaction with teacher preparation in this area. Recommendations have been made as to how teacher training can be improved, including increased practical experiences, training in behavior management strategies and the provision of a course specific to teaching PE to students with autism. The participants also provided their opinions on a list of content areas that experts deemed necessary on a course to teach CAPEs to work with students with autism; 17 content areas were suggested for inclusion in future courses to train APE specialists. Future research should further explore training needs of CAPEs in teaching students with autism as well as students with other disabilities.

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