

Executive Summary



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MONTANA ELEMENTARY PHYSICAL EDUCATION TEACHERS' PERCEIVED SELF-EFFICACY TOWARD TEACHING CHILDREN WITH ORTHOPEDIC IMPAIRMENTS: DO TEACHERS FEEL COMPETENT?

INTRODUCTION

Students with orthopedic impairments [0.43% in 2008-2009 for ages 6 to 21 in Montana, (U.S. Department of Education, 2009)] generally are included or mainstreamed into regular physical education classes, often without an accompanying paraprofessional or teachers' aid. Without access to adapted physical education supports, however, students with orthopedic impairments



are less likely to achieve physical education standards. K-8 educators assigned to teach physical education rely on their pre-service teacher training preparation (elementary or physical education teacher education) to implement appropriate strategies to meet the educational needs of students with and without disabilities.

Purposes of this study

- 1) Examine Montana public school elementary physical education teachers' self-efficacy toward teaching children with orthopedic impairments in general physical education class.
- 2) Adapt physical education teacher pre-service and in-service training needs in Montana.¹

This image is courtesy of the National Center on Physical Activity and Disability at www.ncpad.org

METHOD

The Physical Educators' Self-Efficacy Toward Including Students with Disabilities – Orthopedic Impairments (PESEISD-OI) was adapted from the PESEISD-Autism (PESEISD-A) (Taliaferro, 2010) through a participatory process involving Montana education professionals and national adaptive physical education experts. The PESEID-OI was distributed electronically to 295 public elementary physical educators in Montana (54% of the 547 elementary teachers in the state).

Adapted Physical Education State Mandate/Endorsement or Certification	No
Number of school aged (3 to 21) children with disabilities (2008-2009)	15,691 ^a
Physical Education teaching assignments	547 ^b (Total FTE – 313)
Physical Education teachers with PE/Health endorsement	420 ^b (77%)
Physical Education teachers with generalist endorsement	179 ^b (33%)
Teachers assigned to teach Adapted Physical Education	1.5 ^b (Total FTE – 4.99)
Note. ^a U.S. Department of Education, 2009. ^b Montana Office of Public Instruction, 2010.	

¹ Approximately 14 states have defined a certification or endorsement in APE (AK, CA, IN, LA, ME, MI, MN, NE, NV, ND, OH, OR, RI, WI and WY), (APENS, 2008).

RESULTS

Survey response

Eighty-three teachers completed and submitted an electronic survey (41% response rate).

Participants (37 males, 46 females; mean age 42.4 years old) represented 23 of the 56 counties within 67 Montana school districts. Participants (15.7%) taught in small rural towns with a population of less than 2,500; 25.3% participants were from towns of 2,500 to 19,999 in population; 24.1% from towns of 20,000 to 50,000 in population; and 34.9% were from urbanized areas with more than 50,000 in population.

Teacher self-efficacy ratings

10 items, 11-point scale; 0 = "cannot do at all" and 10 = "highly certain can do", ranked from highest to lowest mean scores:

1. Collaborate effectively with other teachers/ professionals regarding students with OI (M = 8.63, SD = 1.87)
2. Promote social interactions with peers (M = 8.40, SD = 1.70)
3. Manage behaviors (M = 8.08, SD = 1.73)
4. Create a safe environment (M = 8.05, SD = 1.99)
5. Motivate students with orthopedic impairments (M = 8.00, SD = 1.66)
6. Assess motor skills (M = 6.42, SD = 2.16)
7. Modify equipment" (M = 6.66, SD = 2.33)
8. Modify activities (M = 7.39, SD = 1.99)
9. Modify instruction (M = 7.77, SD = 1.63)
10. Modify game rules (M = 7.98, SD = 1.75)

Physiological states ratings

Two item anxiety scale, 5-point scale; 0 = "definitely false" and 4 = "definitely true":

1. Feeling uneasy about including a student with OI (M = .86, SD = 1.01)
2. Feeling tense about including a student with OI (M = 1.08, SD = 1.16)

Lower ratings on the anxiety scale (M = .95, SD = .97) were associated with higher levels of self-efficacy toward teaching students with OI ($r = -.59, p < .05$).

Table 2. Teacher attributes	%
Earned UG degree in PE	70.5%
Earned UG credits in SE	48.1%
Earned G credits in SE	20.8%
Earned UG credits in APE	66.7%
Earned G credits in APE	24.5%
Had earned any postgraduate credits	60%
Previously taught students with OI	77%
Currently teach students with OI	76%
More than 10 years of experience	55.4%
Number of in-services (last 10 yrs) regarding:	
teaching students with orthopedic impairments	
Zero in-service training	28%
One in-service training	21%
Two in-service trainings	12%
Three in-service trainings	2%
Four to ten in-service trainings	37%

Ratings of potential challenges to teaching P.E. to students with OI

12 items, 6-point scale (0 = "not applicable" to 5 = "very much an issue"), top-ranked three challenges of 12 potential challenges rated:

1. Large class sizes (M = 3.51; SD = 1.37)
 2. No appropriate equipment (M = 3.28; SD = 1.16)
 3. Limited training (M = 3.25; SD = 1.25)
 4. Skill level is different (M = 2.82; SD = 1.34)
 5. No aid or support (M = 2.77; SD = 1.48)
 6. Problems staying on task (M = 2.47; SD = 1.16)
 7. Limited information (M = 2.41; SD = 1.33)
 8. No time for modifications (M = 2.37; SD = 1.04)
 9. No information (M = 2.36; SD = 1.35)
 10. Behavior problems (M = 2.29; SD = 1.24)
 11. Modify activities (M = 2.11; SD = .92)
 12. Multiple classes (M = 1.78; SD = 1.77)
- Higher ratings of potential challenges were negatively associated with self-efficacy scores ($r = -.39, p < .05$).

P.E. teachers who reported greater self-efficacy toward teaching students with OI

Demographic attributes. There were no significant relationships between any of the following P.E. teacher characteristics and ratings on self-efficacy toward teaching students with OI and – age, gender, years of experience teaching, postgraduate work, and the number of previous or current students with OI. Physical educator ratings of self-efficacy toward teaching students with OI were higher for teachers in small rural towns (< 2,500 population) versus teachers in larger cities (20,000 to 50,000 population) ($F(3, 79) = 2.70, p < .05$).

Notably, teachers who had earned physical education or health enhancement degrees did *not* differ from physical educators with generalist degrees on their ratings of self-efficacy toward teaching students with orthopedic impairments. In terms of special education credits, there were only trends toward significance in terms of increases in self-efficacy scores. However, a significant positive relationship was found between perceived self-efficacy and physical educators' UG/G APE coursework and in-service training:

- UG APE credits earned ($r = .41; p < .05$),
- G APE credits earned ($r = .30; p < .05$).
- Number of in-services ($r = .33, p < .05$)

Ratings of teacher preparation

One item, 5-point scale; 1 = "extremely poor," 3 = "barely acceptable" and 5 = "very good."

P.E. teacher ratings of their undergraduate preparation for teaching students with OI was less than barely acceptable ($M = 2.67, SD = 1.17$), and were positively correlated with perceived self-efficacy toward teaching students with OI ($r = .54; p < .05$).

Importance ratings of training needs

7 items, 5 point scale; 0 = "unimportant", 3 = "moderately important," and 4 = "very important."

Respondents were asked to rate the importance of the following topics as in-service needs of physical education teachers

regarding teaching students with orthopedic impairments in general physical education classes. Percentages reflect the proportion of teachers who rated these items as moderately important to very important.

Table 3. *Training needs rated moderately to very important.*

Knowledge of disability conditions & APE information	82%
Curriculum materials	81%
Individualization of instruction	80%
Motor development & assessment of motor ability	78%
Modifying equipment & activities	77%
Behavior management	77%
Writing Individual education plans	64%

DISCUSSION

Study results suggest:

- A need to improve current teacher undergraduate and graduate coursework, whether in special education, physical education, or general education to better prepare teachers responsible for the inclusion of students with orthopedic impairments in elementary physical education;
- Adaptive physical education may result in greater self-efficacy toward teaching students with orthopedic impairments; and
- In-service teacher trainings should include information and training in the areas of assessing motor ability, and modifying equipment, activities and instruction for children with disabilities, specifically students with orthopedic impairments.

Montana requires state certification or licensure of physical education/health enhancement teachers at the elementary, middle school/junior high and high school levels. Elementary teachers (generalists) are certified to teach elementary school children, K-8, in all subject areas including health enhancement and/or physical education (National Association of Sport and Physical Education, 2008). Thus, a physical education or health enhancement endorsement or specific coursework in APE is not required in

Montana. Identifying specific in-service needs and the effectiveness of professional development trainings will help the Montana Office of Public Instruction plan and implement future workshops to foster on-going professional growth among physical education teachers in Montana. Universities need to strengthen and integrate special education and physical education learning objectives and content across coursework in order to graduate physical educators qualified to teach elementary physical education to students of all abilities.

Limitations

Study data resulting from a small sample of convenience is not representative of the population. Further research on teachers' self-efficacy toward teaching students with all types of disabilities is warranted. Qualitative data may provide further insights into Montana's teacher training needs.

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The University of
Montana

Table 1 shows the characteristics of physical education in Montana:

- No Adapted Physical Education State Mandate/Endorsement or Certification
- 15,691 school aged (3 to 21) children with disabilities (2008-2009)
- 547 (Total FTE – 313) physical education teaching assignment
- 420 (77%) physical education teachers with PE/Health endorsement
- 179 (33%) physical education teachers with generalist endorsement
- 1.5 (Total FTE – 4.99) teaching assignments for Adapted Physical Education

Table 2 shows the survey participants' experiences:

- Earned UG degree in PE or HE - 71%
- Earned credits toward advanced degree (Masters) - 60%
- More than 10 years of experience - 55.4%
- Previously taught students w/ orthopedic impairment - 77%
- Currently teach students w/ orthopedic impairment - 76%
- Number of in-services attended in the last 10 years regarding teaching students with orthopedic impairments:
 - Zero in-service training – 28%
 - One in-service training – 21%
 - Two in-service trainings – 12%
 - Three in-service trainings – 2%
 - Four to ten in-service trainings – 37%

Table 3 shows physical educators' training needs rated as moderately important to very important:

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