

Evidence Topic: Adapted Physical Education

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Evidence Question:

Specific area under investigation: Person, Intervention, Comparison, Outcome

Does improving gross motor skills in mobile children with mental retardation, help them participate more in physical education class?

Question Background:

What situations inspired this question?

The first evidence question researched was: Does improvement in motor coordination/ball skills in developmental milestones increase physical education participation with children with special needs? After thoroughly searching databases and evidence-based websites for research directly related to this question, it was determined that no research evidence related to this topic is currently available.

Therefore a second question emerged to broaden the research. Simplifying to: Does improving gross motor skills in mobile children with mental retardation, help them participate more in physical education class?

These questions were inspired from a team of occupational and physical therapists who work in Region X school district. Their main focus is to help children participate in school activities. Participation in exercise is important to a child's health. Exercising regularly can aid in improving a person's mood, confidence, and work efficiency (Gabler-Halle, D., Halle, J., & Chung, B., 1993). Sharen Kokaska in 1973, reviewed the advantages a child with mental retardation can receive through participation in movement activities. The child can learn independence and environment awareness, and discover a sense of self. During physical education, children who have

special needs are also able to socially interact with peers. This can facilitate social learning through peer modeling (Block & Obrusnikova, 2001).

In order to determine what inspires participation from a child with special needs, the whole environment needs to be considered. The child's internal thoughts and feelings towards the activity, social environment, and instructional methods were examined. All of these aspects could play a role in a child's motivation to participate in physical education class.

Parameters of the Search:

It is important to know how thoroughly the literature was searched for research studies concerning the question. If the search was not intensive, important information may be lacking from the review.

Exclusion: Ages below 8 years and no greater than 21 years; population of children that are not mentally retarded; lower than level 5 evidence; before the year 1990.

Inclusion: School ages 8 to 21, population that included mental retardation, participation/motivation in physical education/physical activity; after the year 1990; access to articles

Keywords: physical education AND mental retardation; physical education AND special education; adapted physical education AND mental retardation; adapted physical education AND special education; physical education; adapted physical education; mental retardation; mental retardation AND motivation; mental retardation AND participation; movement education AND mental retardation; gross motor AND mental retardation; physical activity AND mental retardation.

Resources: CINAL, ERIC, Medline, PubMed, AOTA website

Evidence Table:

Contains appraisals of evidence reviewed.

Key to Level of Evidence

(Level of evidence may be adjusted downward if study has poor rigor.)

Level	1	2	3	4	5
Type of Evidence	Systematic Reviews and meta-analyses	Randomized Control Trails (RCT)	Quasi-experimental and Comparative studies	Correlation and Non-experimental studies	Descriptive studies & Expert Opinion articles

Citation	Type of Evidence & Access	Description of Evidence/Type of study	Level of Evidence	Description of Population	Description of Intervention	Outcome/ Findings
<p>Kozub, F. (2002). Expectations, task persistence, and attributions in children with mental retardation during integrated physical education. <i>Adapted Physical Activity Quarterly</i>, 19, 334-349.</p>	<p>Research Article Available at Region X.</p>	<p>Randomized Control Trial</p>	<p>2</p>	<p>33 children ages 9-15 with mental retardation and 40 children ages 10-13 without disabilities. Total: 34 male, 39 female.</p>	<p>All children were randomly assigned to a task partner. Children performed the task within their physical education class off to the side. Their pre-task expectations, task persistence, and post-task attributions were reviewed.</p> <p><u>Pre-task expectations</u> were determine through one question: “How well would you do?” after the child watched a video on the task. Children were interviewed off to the side by themselves. Children were separated based on their pre performance expectation.</p> <p><u>Task persistence</u> was measured by the number of trails each child attempted.</p> <p><u>Post-task attributions</u> were measured by the child’s response to the interview question: “How do you feel you did when you played?” after the child viewed a video of them self performing the task. The child’s points were added up during the video viewing. All testing was recorded by the same investigator. Data collection took six weeks.</p>	<p>Data identified:</p> <p><u>Expectations</u> did not differ between children with and without mental retardation.</p> <p><u>Persistence</u> was less in children with mental retardation than children without mental retardation. However the child’s less persistence in the task did not change the outcome. It was noted the children with less persistence still had a successful outcome.</p> <p><u>Attributions</u> did not differ between children with mental retardation and children without mental retardation.</p> <p><u>Summary:</u> Only difference was children with mental retardation presented with less persistence toward the task than the children without mental retardation.</p>

<p>Murata, N., & Jansama, P. (1997). Influence of support personnel on students with and without disabilities in general physical education. <i>Clinical Kinesiology</i>, 51, 37-46.</p>	<p>Research Article Available at Region X.</p>	<p>Quasi-experimental</p>	<p>3</p>	<p>6 students total: 3 students with mental retardation and 3 students without mental retardation; 4 males and 2 females; ages 14-18 years;</p> <p>6 personnel total: physical educators, teacher assistants, peer tutors.</p>	<p>All students participated in pre-selected activities: fitness, volleyball, paddleball, and basketball. During baseline fitness activities, two orientation sessions were held for all students.</p> <p>Orientation consisted of information on classroom procedures, expectations, and introduction to research study.</p> <p>Training for personnel consisted of two, two hour training sessions on: basic academic learning time adapted physical education, tell-show-touch prompting levels, preferred adaptations and modification within physical activity units, specific roles and responsibilities of the teacher assistant and peer tutor.</p> <p>Each participant was required to make a 90% on a test over orientation information. Participants were randomly assigned to students with disabilities for 10 sessions.</p> <p>Video taped data was collected over an 8 week period for a total of 40 sessions.</p>	<p>Students with disabilities and without participated relatively equally when supported by personnel. The activity and knowledge time combined was equal.</p> <p>These findings support that including students with disabilities does not affect the motor performance and participation of students without disabilities.</p>
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<p>Porretta, D., Surburg, P., & Gillespie, M. (1999). Use of various instructional methods for enhancing gross motor skill acquisition in students with moderate mental retardation. <i>Clinical Kinesiology</i> 53 (3), 63-68.</p>	<p>Research Article Available at Region X.</p>	<p>Quasi-experimental</p>	<p>3</p>	<p>Participants 32 students with moderate mental retardation, ages 14-20 years old.</p>	<p>Randomly assigned to one of four instructional groups:</p> <ol style="list-style-type: none"> 1. Videotape only 2. Imagery only 3. Videotape plus imagery 4. Verbal directions only. <p>All participants received three orientation sessions. Orientation one focused on determining the child's hand preference and to teach the child the importance of paying attention.</p> <p>The second orientation session consisted of being divided into the four instructional groups. Each group received orientation by their certain instruction method and participated in throwing the ball ten times.</p> <p>The third orientation group was the same as the second. Then fifteen practice sessions were performed in their group, consisting of twenty throws per session.</p>	<p>Based on statistical analyses of data there was no particular instructional method that benefits all participants.</p> <p>Participants were able to increase throwing accuracy across sessions, regardless of instructional method.</p>
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<p>Ellis, N., Wright, M., & Cronis, G. (1996). A description of the instructional and social interactions of students with mental retardation in regular physical education settings. <i>Education and Training in Mental Retardation and Developmental Disabilities, 31</i>, 235-241.</p>	<p>Research Article Available at Region X.</p>	<p>Descriptive study</p>	<p>5</p>	<p>10 children with mental retardation ages range from 7-13 years.</p>	<p>Children with mental retardation were observed in six different physical education settings.</p> <p><u>Setting one:</u> 3 third grade classes, entire class disabled, 1 teacher and 1 aide, free play.</p> <p><u>Setting two:</u> 3 fourth grade classes, 2 children disabled, 1 teacher and 1 aide, free play.</p> <p><u>Setting three:</u> 1 kindergarten class, entire class disabled, 1 teacher and 2 aides, skilled stations.</p> <p><u>Setting four:</u> 3 fourth grade classes, 2 children disabled, 2 teachers and 1 aide, free play.</p> <p><u>Setting five:</u> 1 third grade class, entire class disabled, 1 teacher and 1 aide, free play.</p> <p><u>Setting six:</u> 2 third grade classes, entire class disabled, 1 teacher and 1 aide, free play.</p> <p>Participates were observed for an average of six hours during integrated physical educational activities. Behavioral data and setting conditions were recorded. Only one target student was the focus of each observation session. Two data collectors.</p>	<p>During observation sessions students engaged in social interaction only 15% of the time. The rest of the time the teacher was explaining the activity or they were participating.</p> <p>Overall social interaction time spent with peers was the same for children with or without mental retardation.</p>
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EBPX Summary

Summary of the EBPX team on the collective evidence reviewed.

The concept researched was very broad. There is not any direct evidence that increased motor skill results in more participation in physical education programs. Therefore, this is a preliminary exploration of the topic.

Research found indicated very little difference between children with and without mental retardation in the PE participation behaviors. One study found that children with mental retardation may show less persistence and less tendency to return to an activity.

EBPX Strength and Impact Summary

Interpretation of the collective evidence reviewed by the EBPX team.

The research topic needs a more in-depth review.

References

- Block, M., & Obrušnikova, I. (2007). Inclusion in physical education: a review of the literature from 1995-2005. *Adapted Physical Activity Quarterly*, 24, 103-124.
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