



# AOTA Evidence Briefs

## School-Based Interventions

*\*A product of the American Occupational Therapy Association's Evidence-Based Literature Review Project*

### SCH #4

## **Large-group therapy combined with small-group therapy, and large-group therapy combined with consultation with classroom teacher may be effective methods of serving schoolchildren with disabilities**

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Palisano, R. J. (1989). Comparison of two methods of service delivery for students with learning disabilities. *Physical and Occupational Therapy in Pediatrics*, 9, 79–100.

#### **Level: IIB2b**

Nonrandomized controlled trial, 2 groups, fewer than 20 participants per condition, moderate internal validity, moderate external validity

### **Why research this topic?**

Methods of delivering therapy in the school setting calls for alternatives to one-on-one therapy because of the large number of children and the many schools to be served. However, research is lacking on the relative effectiveness of alternatives.

### **What did the researcher do?**

Palisano (1989), of Hahnemann University (Philadelphia), designed a study to compare two methods of service delivery. He recruited 34 participants from five special education classes in three school districts served by the Delaware County (Pennsylvania) Intermediate Unit. All had scored 1.5 standard deviations or lower on at least one of three tests (see later discussion of outcome areas), and a therapist had determined that they warranted treatment. Nineteen students (13 boys and 6 girls) from three classes constituted a group receiving a combination of large- and small-group therapy (the therapist-directed group). Their average age was 7.2 years. Fifteen students (12 boys and 3 girls) from the other two classes made up a group receiving a combination of large-group therapy and consultation (the consultation group). Their average age was 7.5 years.

The therapist-directed group received occupational therapy twice a week for 6 months. One weekly session took place in a large group and lasted 45 minutes. The other took place in small groups (two students per group) and lasted 30 minutes. Six students also received physical therapy in a weekly small-group session of 30 minutes.

The consultation group received occupational therapy once a week for 6 months. The session took place in a large group and lasted 45 to 60 minutes. The therapist also consulted with each class for 30 minutes a week and provided the teacher with a monthly lesson plan of follow-up activities. The students performed these three times a week for a total of 30 to 45 minutes. The treatment activities provided to each group were similar. They emphasized “sensory integration,” a therapeutic approach that focuses on the capacity to process and organize sensory inputs.

The outcome areas of interest to the researcher were *visual-motor functioning* (as measured by the Test of Visual-Motor Skills); *visual-perceptual skills* (as measured by the Test of Visual-Perceptual Skills); and *motor skills* (as measured by the Bruininks-Oseretsky Test of Motor Proficiency). Measurements were taken before the study began and after it ended.

## What did the researcher find?

The consultation group improved **significantly** (see Glossary) more in motor skills than the therapist-directed group. The therapist-directed group improved more in visual-perceptual skills than the consultation group. The difference was clinically but statistically **not significant** (see *Glossary*).

The therapist-directed group significantly improved its mean proportional change index (PCI) score on the Test of Visual-Motor Skills, all seven subscales of the Test of Visual-Perceptual Skills, and five of the eight subscales of the Bruininks-Oseretsky test. The consultation group significantly improved its mean PCI score on the Test of Visual-Motor Skills, five subscales of the Test of Visual-Perceptual Skills, and five subscales of the Bruininks-Oseretsky test. The PCI score is “the ratio of a child’s rate of development during intervention to the pre-test rate of development.” It “provides a more sensitive estimation of a child’s response to intervention than change in standard score” (pp. 87–88).

## What do the findings mean?

For therapists and other providers, the findings suggest that each method of service delivery was effective for the particular group it served. More research is needed, however, with a larger sample, random assignment to groups, and a **control group** (see *Glossary*).

## What are the study’s limitations?

The study has several limitations. First, the sample size is small. Small samples are less likely to represent population characteristics and may not be large enough to detect statistically significant or clinically important differences between intervention groups. The study lacked a control group; thus, outcomes could not be compared with a group receiving no treatment. Teacher expectations and attitudes towards students and interventions may have influenced student performance and outcomes. The lack of random assignment to groups also may have biased the results. It is unclear whether evaluators were aware of the participant’s group status and whether study participants were receiving other forms of intervention that may have influenced the results of this study.

## Glossary

**control group**—A group that received special attention similar to that which the treatment group received, but did not receive the treatment.

**nonsignificant or no significance**—A statistical term that refers to study findings that are likely to be due to chance differences between the groups rather than to other factors (like the treatment of interest). A nonsignificant result is not generalizable outside the study. Like significance, a nonsignificant result does not indicate the clinical effect. Often studies will show nonsignificant results, yet the treatment group’s mean will be better than the control group’s. This is usually referred to as a trend in the right direction. Because significance is closely determined by sample size, nonsignificant results would often become significant if the sample size were increased.

**significance (or significant)**—A statistical term, this refers to the probability that the results obtained in the study are not due to chance, but to some other factor (such as the treatment of interest). A significant result is one that is likely to be generalizable to populations outside the study.

Significance should not be confused with clinical effect. A study can be statistically significant without having a very large clinical effect on the sample. For example, a study that examines the effect of a treatment on a client’s ability to walk may report that the participants in the treatment group were able to walk significantly longer distances than the control. However, if you read the study you may find that the treatment group was able to walk, on average, 6 feet, while the control group was able to walk, on average, 5 feet. Although the outcome may be statistically significant, a clinician may not feel that a 1-foot increase will make his or her client functional.

■ Terminology used in this document is based on two systems of classification current at the time the evidence-based literature reviews were completed: *Uniform Terminology for Occupational Therapy Practice—Third Edition* (AOTA, 1994) and *International Classification of Functioning, Disability and Health (ICIDH-2)* (World Health Organization [WHO], 1999). More recently, the *Uniform Terminology* document was replaced by *Occupational Therapy Practice Framework: Domain and Process* (AOTA, 2002), and modifications to *ICIDH-2* were finalized in the *International Classification of Functioning, Disability and Health* (WHO, 2001).

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