Models of Occupational Therapy Service Provision in the School System

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Occupational therapy is a related service when provided within the public schools, which means that services must enhance or support educational goals. Three service provision models have been described for school therapists: direct service, monitoring, and consultation. Direct service addresses individualized needs that require specialized intervention strategies which can safely be performed only by the occupational therapist. Monitoring, which is sometimes referred to as integrated programming, uses therapeutic expertise within functional tasks to maximize opportunities for practice and generalization. Consultation addresses problems by enabling others to work more effectively on the educational goals they have set for the students. Evidence is accumulating to demonstrate that each model is effective when chosen and applied appropriately. This paper reviews each model, provides examples of studies that have been conducted, and suggests directions for future research.

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The passage of Public Law 94-142 in 1975 (the Education for All Handicapped Children Act), in which occupational therapy was identified as one of several related services for school-age children, introduced both a new role and a new practice environment to the occupational therapist. The law's mandates challenged pediatric occupational therapists to focus their role on providing only those therapeutic approaches that would enhance a student's educational experience. In other words, occupational therapy intervention in schools must enhance or support the student's educational goals. The interventions and goals are written in the student's individualized education program (IEP), a document that coordinates the goals of all professionals involved with the student.

Models of Service Provision

The American Occupational Therapy Association (AOTA) has long recognized the need for specialized skills to effectively provide occupational therapy services in the public schools. In 1980 AOTA provided in every state training programs that addressed the unique skills of public school service provision. These programs are set forth in Training: Occupational Therapy Educational Management in the Schools (TOTEMS) (Gilfoyle, 1980). More recently, a special task force was formed to review TOTEMS materials, compile materials from several states, collect comments from identified nationwide experts, and summarize the results of survey data to design comprehensive guidelines for occupational therapy services in the public schools. The task force defined the specific models of school-based occupational therapy service provision that will be referred to here (AOTA, 1987).

Each service provision model (direct service, monitoring, and consultation) is viable within the public schools. As was discussed in the article by Coutinho (see pp. 706–712 of this issue), the members of the interdisciplinary team must carefully identify the student's needs within the context of that student's educational placement, and choose service models for both special education and related services accordingly. The intent of Public Law 94-142 is that the type and amount of service provision may not be determined by parental wishes or district resource limitations such as space or personnel shortages, but rather by the student's needs alone. A broader understanding of the various service provision models will facilitate application of the appropriate service.

Direct Service

Direct service is the most familiar model of service provision. In this model, occupational therapy practitioners use specific techniques and approaches with one student or a small group of students, and gener-
ally have frequent contact with them (e.g., once or twice a week) (AOTA, 1987).

The most critical feature in choosing direct service is the identification of an educational need that can be met only by direct interaction between the student and the occupational therapist. The intervention chosen might include treatment techniques that depend on an in-depth knowledge of the neuromuscular system or the integrative functions of sensory, perceptual, and motor performance. A key factor might be the necessity for ongoing clinical judgments to adjust the activities to best meet the student's ongoing needs. In all cases, the intervention must have a direct relationship to the educational needs of the student.

A number of researchers have demonstrated the effectiveness of the direct service model on students' performance. Kuharshki, Rues, Cook, and Guess (1985) found that vibration, inversion, and rotation techniques were effective sensory procedures for improving head and trunk control for classroom activities in three preschoolers with severe disabilities. Ottenbacher (1982) conducted a meta-analysis of studies that compared the outcome performance of direct service intervention using sensory integrative approaches with the performance of a control group and found that direct service intervention produced better outcomes more than 78% of the time. Ottenbacher, Short, and Watson (1981) investigated direct services with children who had severe disabilities by comparing a treatment and a control group on motor development and postural control. The children who received direct services made significantly greater gains than those who did not. Children with severe disabilities also made significant improvements in a study conducted by Sobsey and Orelove (1984). They used a reversal design to demonstrate that direct occupational therapy services produced better lip closure and less spilling from the mouth than routine classroom techniques.

However, some researchers have tested the limits of the direct service model. Jenkins et al. (1982) studied two intensities of direct service (once a week and three times a week for 15 weeks) with developmentally disabled children. They found that direct services produced improved gross motor skills in these children when they were compared with a control group, but that the two intensities of service did not differ from each other in the results they produced. The authors concluded that multiple sessions may not be necessary to produce developmental outcomes. More studies such as these are needed to determine the most efficient pattern of service provision.

**Monitoring**

The monitoring model of service provision requires diagnostic skills to identify student needs, program planning skills to design appropriate interventions, and teaching and supervisory skills to assist others in the immediate environment to carry out the procedures with the student. Regular contact (a minimum of twice a month) is needed to determine whether adjustments in the intervention procedures are necessary (AOTA, 1987). The occupational therapist continues to be responsible for outcomes, but entrusts another person with the regular implementation of the program plan. The most critical feature of monitoring is the identification of an educational need that will be best served by routine and consistent procedures needing ongoing guidance and practice. Activities of daily living, positioning and handling, reach and grasp, fine motor skill development, or coordination needs might be best served through monitoring. Three questions are asked to determine whether monitoring is a safe choice for a student: (a) Is the student's health and safety protected when the program is conducted by a person other than the occupational therapist? (b) Can the person being trained correctly demonstrate the activities without assistance? (c) Can the person being trained independently describe restrictions and signals of failure that would warrant discontinuation and making contact with the supervising therapist? (AOTA, 1987). If one cannot answer "yes" to all three questions, then monitoring is not the service model of choice, because a negative answer to any question would mean that monitoring would introduce a measure of risk into the service provision process.

Monitoring seems to be an effective means for service provision, perhaps because it provides an intuitive measure of validity and the possibility of good reliability through observation. Furthermore, empirical data on the effects of monitoring have demonstrated its value. Several authors have investigated integrated programming techniques, which incorporate the principles of monitoring discussed above (Campbell, 1987; Campbell, McInerney, & Cooper, 1984; Giangreco, 1986; Rainforth & York, 1987). For example, Giangreco (1986) found that when therapy techniques were incorporated into microswitch activation, the student performed at higher levels than when isolated direct services were provided prior to microswitch classroom activities. Campbell, McInerney, and Cooper (1984) incorporated neuromotor procedures into all reaching tasks performed during the school day by a preschooler with moderate disabilities, with therapists monitoring both correct application of the techniques and data collection. The child attained 65% competence in all activities, and attained 100% competence in more motivating activities, such as in activities carried out in a large group. They concluded that a combination of therapeutic and educational strategies may be the most effective approach to
achieve student goals. Further research is needed to identify other successful integrative approaches that use occupational therapy expertise to facilitate functional skill development for learning.

Consultation

This service model is the least familiar to occupational therapists. As applied to occupational therapy in the schools, consultation is a service model in which specialized expertise is used to facilitate the workings of the educational system. Consultation in which specialized expertise is used to facilitate the needs of (a) the student, (b) professionals, or (c) the system; in practice, these forms often occur together. Case consultation addresses the student's needs, focusing on developing the most effective educational environment for a specific student. Colleague consultation addresses the needs of other professionals to improve their skills and knowledge. System consultation improves the effectiveness of the agency or district by addressing the needs of generic groups within the system (AOTA, 1987).

The most critical factor in choosing consultation is the identification of an educational need that is most effectively met through a supportive environment. Designing proper seating, preparing an adaptive device for classroom use, suggesting alternate means for presenting or producing classroom work, or assisting with IEP goal development can all be considered examples of consultation. Consultation can be an effective means to create an environment that supports student learning, and offers the opportunity for the student to generalize his or her skills to different environments (Dunn, 1985).

Much of the writing on consultation comes from the medical literature, or from the literature on mental health, school psychology, and organizational development (Dunn, 1985; Idol & West, 1987; West & Idol, 1987). West and Idol (1987) reported on a composite definition of consultation from these bodies of literature that was originally designed by Meyers, Parsons, and Martin (1979). Several characteristics emerge: (a) Two persons interact, with one having the direct responsibility for a third person; (b) interactions are voluntary; (c) interactions are a shared problem-solving process; (d) the immediate goal is to solve a current problem of the person seeking consultation; and, (e) the long-range goal is to enable the person seeking consultation to handle future situations more skillfully. These characteristics clearly underline the importance of adult communication in producing successful outcomes from consultation.

West and Idol (1987) divided research on consultation in special education and related professions into three major areas: input, process, and output variables. Input variables include personal characteristics of the professionals and the problem to be addressed; process variables refer to the techniques used in the consultation process; and output variables are those observable results that emerge from the consultation. Methodological limitations and inadequate operational definitions were cited as the major reasons overall results have been inconsistent thus far.

Input variables have been given a small amount of attention in research (West & Idol, 1987). These, the most inwardly focused variables, are the most difficult to assess validly. For instance, the variable "years of teacher experience" yields inconsistent results when investigators look at frequency of consultation requests (Gutkin, 1980; Pryzwansky & White, 1983; West & Idol, 1987). Readiness for the consultation experience may be a factor related to the effectiveness of outcomes; this variable can include the expertise of the consultant as well as awareness, on the part of the person seeking consultation, of how the consultation process works. The consultant's personality and work traits, including flexibility, warmth and efficiency, are also important (Pryzwansky & White, 1983; West & Idol, 1987). More research is needed to clarify the role that input variables play in the success of consultation.

Only a few studies have investigated process variables. Even when teachers and administrators have been exposed to various consultation models, they overwhelmingly prefer the collaborative style of consultation (Babcock & Pryzwansky, 1983; West, 1984). Collaborative approaches use an equal partnership between the two individuals involved to identify, plan, and carry out recommendations. Both partners are then responsible for and committed to positive outcomes (Dunn, 1985). Effective collaboration can be time consuming, but may lead to more goals being met because of the commitment made by both parties.

Most research on consultation is being done on output variables. This research focuses on the changes, both in persons seeking consultation and in students, that are a direct result of consultation. Teachers receiving consultation have reported positive feelings about those experiences (Gutkin, 1980; West & Idol, 1987). Furthermore, teachers who received in-service training on consultation were thereafter observed to use consultation more often than a control group who did not receive this training (West & Idol, 1987). Peck and Killen (1987) found that preschool teachers provided their students with more opportunities to practice skills and got better outcome behaviors after consultation that focused on IEP treatment goals.

Consultation is a viable service provision alternative in the public schools because it provides a mech-
anism through which students have opportunities to practice skills and generalize what they have learned to different situations. Occupational therapy knowledge is used efficiently when it is applied through consultation approaches to adapt environments and alter teaching and learning strategies to facilitate better outcomes for the student. Occupational therapy research is needed to identify successful consultation methods and clarify what conditions must be present in order for consultation to be the service model of choice for specific situations.

Use of Service Provision Models

The art of service provision in the public schools is in choosing the model that would be the most appropriate to meet a student's educational needs. The American Occupational Therapy Association (AOTA, 1987) identified 10 parameters that help the therapist choose the best service model (see list below). These parameters are used to determine how important it is for the occupational therapist to be directly involved with the student, the teachers, and the environment. For example, if the teachers are experienced and knowledgeable about feeding and positioning, Parameter 7 would be ranked lower, suggesting that the occupational therapist might be better employed providing consultation or monitoring for classroom implementation. Parameter 6 (age of the student) is related to chronological age expectations; a student who is successfully meeting age expectations might require less direct intervention than one who fails at age-appropriate tasks. For example, a student may be coping with upper elementary school expectations with the help of adaptations, but may require direct intervention as he or she prepares for vocational training and placement. The assessment of all parameters leads to an impression of the entire situation, which in turn can assist the therapist in choosing an appropriate service model.

Parameters for Setting Priorities

1. Health and safety of the student
2. Necessity for external communication
3. Necessity for environmental modifications
4. Role of sensory, perceptual, and motor functions in the student’s educational performance
5. Potential for functional improvement
6. Age of the student
7. Expertise of other persons in the student’s environment to assist in the educational process
8. Availability of other persons in the student’s environment to assist in the educational process
9. Level of interference of the handicapping condition
10. Availability of space, time, and equipment in the local education agency (AOTA, 1987, pp. 9-1-9-2)

Each model has benefits and limitations. Direct service is time consuming and therefore costly, but can address very complex problems and be quickly adapted to meet the student’s changing needs. Monitoring is more time efficient, since others carry out the programs, but the student’s health and safety must be considered. Consultation is an effective mechanism for providing ongoing environmental support, but requires special skills to be administered properly. A few brief examples will illustrate the use of each model.

Case Number 1: Use of Direct Service and Consultation

Tommy is a 9-year-old boy with an educational diagnosis of learning disability. His psychoeducational testing revealed above average intelligence, but he is performing poorly in school. He has a difficult time completing his work in the regular classroom, even though his classroom teacher is giving him work that is at his tested reading and math levels. The occupational therapy assessment revealed that Tommy was having difficulty understanding information from touch, position, and movement receptors, and had poor ability to organize body and hand movements. During testing and later classroom observation, the occupational therapist noted poor attention to task and difficulty in carrying out verbal directions, even though he could repeat directions. The therapist concluded that Tommy’s related service needs might best be served through a combination of direct service and consultation. Direct service would address the poor sensory processing and difficulty with planning motor acts that seemed to be contributing to his poor organization of work, inattention to classroom tasks, and poor ability to carry out school tasks. Direct service seemed necessary because of Tommy’s specialized sensory-motor needs. Consultation would be used to adapt his regular classroom, to help the teacher understand the reasons Tommy’s problems were affecting his classroom performance, and to assist her with strategies to increase his performance capabilities in the classroom.

These recommendations were discussed at the IEP team meeting, and the team agreed that both direct service and consultation were appropriate approaches. They also recommended that the physical education teacher receive occupational therapy consultation, since Tommy had trouble performing physical acts and frequently became angry because of
The above examples depict only some of the combinations of service provision that might be necessary to meet a student's needs. The IEP team is responsible for the final decisions regarding programming, although the team must rely heavily on recommendations from the group members in order to make those decisions. All team members must be able to step back from their discipline's perspective to see the overall needs of the student when planning the most appropriate program, keeping educational goals in mind.

**Conclusion**

The AOTA 1985 manpower study revealed that in 1982, one third of employed occupational therapists worked in pediatrics, with many of these holding jobs in public schools. With the recent passage of Public Law 99-457 (the Education of the Handicapped Act Amendments of 1986), infants, preschoolers, and their families will also be eligible for occupational therapy services. To meet these demands, occupational therapy will need to devise successful strategies for implementing all of the service provision models discussed here. Under the auspices of AOTA, Henderson et al. (1987) have collected data to compare the type of educational and fieldwork experiences available to occupational therapists with those competencies that practicing clinicians deem necessary for successful service provision in public schools. The results of this study will be used to further delineate the characteristics of successful occupational therapy service provision in schools and appropriate preservice experiences for school-based occupational therapists.

**References**


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