
Occupational Therapy in Full-Inclusion Classrooms: A Case Study From the Moorpark Model

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This article provides a historic review of the movement toward integrated classroom placements as well as the characteristics of full-inclusion classrooms relevant to occupational therapy school-based practice. A full-inclusion model adopted by the Moorpark Unified School District is described. This model incorporates occupational therapy as a vital and integral component of the school's inclusive education efforts.

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Legislation mandating that children with disabilities be provided with the least restrictive educational environment has had a profound influence on the types of classroom placements available to these students. Over the past several decades, classroom placements have evolved from segregated classes to mainstreamed classrooms where students with disabilities participate in general education for some portion of their school day. Most recently, the practice of fully including students with disabilities in general education settings has gained momentum (Burrello & Wright, 1993).

The growing trend toward full inclusion of children with disabilities has implications for occupational therapy school-based practice. Fully included students continue to require occupational therapy services to support their educational placement. However, these services are affected by the changes in implementation and educational philosophy inherent in full-inclusion classrooms. This article explores the characteristics of a full-inclusion educational model, examines the influence of this model on occupational therapy practice, and describes a case study that implements occupational therapy in a full-inclusion setting.

Historical Perspective of the Full-Inclusion Movement

During the 1960s, conceptual changes regarding the best and most appropriate way to educate students with disabilities influenced the movement toward integrated educational settings (Simpson & Sasso, 1992). At this time, successful outcomes were reported for educational programs that trained children with disabilities in the general education environments. In contrast, decreased academic achievement outcomes were reported for children with disabilities who remained in segregated classrooms (Heller, 1982; Kaufman, Gottlieb, Agard, & Kukic, 1975; Kirk, 1964). Educators also began to advocate that consonant with assisting students in becoming competent and independent citizens, functional skills could best be taught in natural settings (Brown et al., 1989).

With increasing concern regarding the efficacy of special education services and mounting court cases on behalf of children with disabilities (Tremblay & Vanaman, 1979), the U.S. Congress passed a series of laws that sought to strengthen and improve the education of children with disabilities. The cumulative effect of this legislation resulted in the passage of the 1975 landmark statute, Education for All Handicapped Children Act (Public Law 94-142), which was amended and expanded in 1990 by the Individuals With Disabilities Education Act (IDEA, Public Law 101-476).

A central tenet of this legislation is the least restrictive educational environment principle. This tenet asserts that an integrated setting should be provided for students with disabilities. Furthermore, implementation of the least restrictive environment (LRE) principle was envisioned as a continuum model in which a range of options from most restrictive, typified by segregated special education settings, to the least restrictive, such as full inclusion in a general education classroom, are made available to students.

Concurrent with the federal legislation mandating the LRE, some educators advocated not only integrated classroom placements, but also a paradigm shift away from the view of special education as distinct and separate from regular education (Stainback & Stainback, 1984). After 20 years of support for segregated special education placements, Dunn (1968) provided a major impetus for this movement. He took the position that expansion of special education was a consequence of pressure from general educators, and he challenged special educators to resist segregated class placements and develop a system responsive to the needs of socioculturally deprived children with mild disabilities.

Stainback and Stainback (1984) provided an additional rationale for the merger of general and special education, known as the Regular Education Initiative (REI), into a system structured to meet the needs of all students. These authors argued that there were not two distinct types of students or discrete sets of instructional methods but rather that all students were unique individuals with different intellectual, physical, and psychological characteristics. Learning is acquired through the same instructional methods. Such methods may need to be tailored to individual characteristics, but few, if any, apply only to one group or another.

Therefore, the full-inclusion model of classroom placements is built on the foundation of both the LRE principle of IDEA and the REI. The LRE principle advocates that the child with disabilities has a right to an education in a general classroom. The REI asserts that providing services in the general education setting is an environmentally referenced approach based on the rationale that children learn best when skills are taught in the natural environment.

Characteristics of Full-Inclusion Versus Mainstreamed Classrooms

Historically, the integration of students with disabilities into general education settings has taken the form of either mainstreaming or full inclusion. The full-inclusion version of integration has gained momentum since the

mid 1980s. These two concepts are similar in that both are forms of integrating students with disabilities. They can be envisioned as points along the continuum of least restrictive classroom placements, with full inclusion being the least restrictive option available. However, mainstreaming and full-inclusion models differ considerably in philosophy and implementation.

The mainstreamed student with disabilities is placed in a special education setting and participates in a general education setting for some portion of the classroom day. However, the primary responsibility for the student's academic program remains with the special educator (Heller, 1982). The amount of time and degree to which the student is incorporated into the mainstream of general education varies. One component to determining the degree of mainstreaming is the student's ability to perform in the general education setting. Mainstreaming practices propose that the student is prepared for the more integrated setting and moved to that environment when the prerequisite skills for success are demonstrated. In this way, the student "earns" the right to move to increasingly integrated classrooms. In particular, mainstreamed settings focus on academic goals (Buscaglia & Williams, 1979).

Full inclusion is similar to mainstreaming in that the student with disabilities is integrated into the general education classroom. However, the primary classroom placement is considered to be the general education classroom. Although academic progress continues to be an important goal for fully included students, social goals are also incorporated because social integration is perceived to be a valuable outcome of full-inclusion placements. Full inclusion also proposes that all services that support the student's goals, such as occupational therapy, should be based in the general education environment (Brown et al., 1989). In this way, the student receives training in the natural environment as a full member of the general education classroom. Although the full-inclusion model builds on early mainstreaming efforts, Rogers (1993) described the differences between mainstreaming and full inclusion of students with disabilities as a reconceptualization of special education services. In mainstreamed settings, the student is brought to the services. In full-inclusion practices, the services are brought to the student.

The Impact of a Full-Inclusion Model on School-Based Occupational Therapy

The philosophical and service delivery changes brought about by the full-inclusion model have several implications for school-based occupational therapists. One effect

can be seen in the context in which occupational therapy services occur. The full-inclusion model requires that services are tied to the general education setting. An occupational therapist may provide services in the classroom and in such settings as the lunchroom, playground, or neighborhood bus stop. Participation in these natural settings can assist occupational therapists in understanding and providing intervention that is sensitive to the occupational demands of the environment relative to the academic and social expectations for the student (Griswold, 1994). Ecological models of occupational therapy practice see the match between student and environment as a crucial variable for remediation. Furthermore, intervention delivered in the natural environment has been associated with increased generalization and maintenance of skills (Stokes & Baer, 1977). Occupational therapy's rich history of delivering context-bound service is congruent with the philosophical premise behind full-inclusion classrooms (Dunn, Brown, & McGuigan, 1994).

A second area of school-based occupational therapy practice affected by a full-inclusion model deals with interventions offered. All school-based occupational therapy services are based on an educational model, where intervention seeks to enhance the student's ability to take advantage of the academic placement (McEwen & Shelden, 1995). However, a full-inclusion model also includes the social integration needs of the student with disabilities. As a result, social relationships between students with disabilities and students without disabilities are important elements for satisfactory classroom placements and are frequently addressed in the individualized education program (IEP). With dual training in physical disabilities and psychosocial issues, occupational therapists have provided a valuable contribution to students' social skills objectives. As implementation of the full-inclusion model of service increases, the social skills of the fully included student with disabilities will become an increasingly important area for school-based practice. This service should routinely be offered in conjunction with other areas of school-based occupational therapy practice, such as motor skills, sensory processing, safety and access issues, and vocational and self-care skills training.

A third effect on school-based occupational therapy practice concerns the model of service delivery most appropriate for full-inclusion classrooms. Proponents of full inclusion contend that a collaborative approach is important to ensure that professionals work cooperatively and share responsibility for components of the fully included students' education. Idol, Paolucci-Whitcome, and Nevin (1986) described collaboration as "an interactive process that enables teams of persons with diverse

expertise to generate creative solutions to mutually defined problems" (p. 1). This process facilitates the development of an expanded range of new intervention strategies, blended from multiple perspectives. Addressing student needs in this manner is critical to full-inclusion classrooms because of the logistical challenges in coordination of both classroom routines and professional services. This collaboration is an integral part of all good occupational therapy practice.

Although it is recommended that professionals working with fully included students do so collaboratively, occupational therapists have a full range of service delivery models available to meet the students' needs (Case-Smith & Cable, 1996). The service delivery options range from direct treatment, to consultation, to collaboration. In addition, the use of service delivery models may fluctuate within any given treatment session. Responsive service delivery geared toward the student's needs provides more efficacious treatment and increased support and training in new techniques for the general educator. The teacher's acquisition of new skills and competencies can, in turn, benefit all students in the classroom (Schulte, Osborn, & McKinney, 1990).

The Moorpark Model

The Moorpark Unified School District in Moorpark, California, began fully including children with mild disabilities during the 1988 school year. The next year, Allen (1991) compared the effects of segregated special education with the full-inclusion model used by this district. Using a multiple baseline setting design, 42 students with mild disabilities were clustered into nine general education classrooms within three elementary schools. Outcome variables were curriculum-based math scores (Addison-Wesley, 1981), written compositions, and behavior ratings (Revised Behavior Problem Checklist; Quay & Peterson, 1987). The results indicated improved performance under the full-inclusion condition as evidenced by enhanced math, writing, and behavior scores.

The full-inclusion program at Moorpark Unified School District expanded each year and in 1995, incorporated children with mild to severe disabilities from preschool through high school. The philosophy of the program is based on the notion that students with disabilities have a right to participate as full members of the general education environment. The framework for the Moorpark Model full-inclusion program is drawn from the literature detailing best practices in this area (Sailor, 1991) and incorporates the following elements:

- General education classrooms in the neighborhood

school will be the first placement consideration for all students with disabilities.

- School placement is age and grade appropriate. In addition, the student will move with peers to each subsequent grade.
- Special education and related services, such as occupational therapy, are provided in the general education classroom or other integrated settings.
- All IEP team members work collaboratively to support initial and ongoing program development for each student.
- General disability awareness training is provided to the staff members, students, and parents at each school site.
- The district provides an appropriately trained specialist, such as an occupational therapist or special education teacher, to supervise and assist paraprofessionals working with fully included students.

An important element of the Moorpark Model revolves around collaboration of all IEP team members involved with the student. Active participation from both the parents and the student is strongly supported. The academic needs of the students are addressed by both the regular teacher and the full-inclusion specialist, a special educator. In addition, the IEP team frequently involves classroom aides who are assigned to the class for some portion of the school day. In this model, the aides work with the fully included students only when physically necessary or when an adapted or individualized curriculum requires direct instruction.

The school psychologist handles the counseling for both staff members and parents of students in the full-inclusion classrooms. All students, including those with and without disabilities, are prepared for their classroom placement through group conversations about the individual differences present in each person. The parents of these students are reassured that the educational program will not be diminished but rather enhanced through the additional special services available within the class. Fully included students also receive speech therapy, adapted physical education, behavior or counseling services, and health services commensurate with their needs.

The occupational therapist assumes a multidimensional role with the fully included student. In this district, school-based occupational therapy has already provided remediation for a wide variety of issues affecting the student's ability to take advantage of the classroom placement, including intervention for gross and fine motor delays, sensory processing problems, and access to equipment and services. Occupational therapy intervention also

considers the student's social skills as a primary area for intervention. The service needs are based on an ecological evaluation in keeping with the full-inclusion model.

Treatment also takes place in the natural environment whenever possible. For treatment objectives that require a pull-out or direct treatment approach, the demands of the natural environment are incorporated into the occupational therapy intervention session so that generalization and maintenance of skills are enhanced. The occupational therapy service in full-inclusion classrooms at Moorpark Unified School District is illustrated in the following case example.

Case Example

Client History

Marie was a 6-year-old child with Down's syndrome entering a general education first grade class. The teacher for this class volunteered to participate in the full-inclusion program and attended several conferences and inservices pertaining to this topic. The class consisted of approximately 30 students. Marie was the only fully included student, although three other pupils in the class received speech therapy services. One part-time classroom aide was also assigned to the class. In the prior school year, Marie attended a mainstreamed special day class where she participated in a general education kindergarten class in the morning and a segregated special education class in the afternoon.

Marie was able to follow two- to three-step activities within the class and independently played on all playground equipment. She could recognize all letters of the alphabet and identify letters needed to spell her name. She could not perform simple math operations but showed beginning understanding of numerosity. Her receptive language skills were at age level; however, she spoke very softly and needed encouragement to engage in conversation with adults. With children, she was initially shy but would eventually warm up and become quite boisterous and talkative. At the beginning of the school year, the occupational therapist (the first author) conducted standardized testing and an ecological evaluation of Marie's participation in classroom activities. Multiple occupational therapy needs were identified. The treatment domains and results of intervention are detailed as follows.

Access to Classroom Equipment

Typical of many of the fully included students, Marie was physically much smaller than her classmates, necessitating a stool to reach the water faucet, a footstool for her

chair, and an adjusted desk size. These modifications were made before the start of school during a meeting with the occupational therapist, teacher, parent, and Marie. In this way, the equipment was adjusted and in place when class began, easing transition to the new setting. The occupational therapist also made individual modifications to school computer equipment, such as adapting a keyboard, to suit Marie's individual needs.

Adjusting to Classroom Routines

One important domain for the occupational therapist in the full-inclusion classroom revolves around classroom routines. Typically, special education teachers are adept at developing and maintaining classroom routines that are salient, specific, and easily followed by slower learners (Semmel, Abernathy, Butera, & Lesar, 1991). In our experience, the classroom routines of many general education classes, although adequate for the general education student, were difficult and confusing for the new fully included students. The general education teachers were frustrated when the fully included students had difficulty in following simple classroom routines, such as hanging up coats or finding their seats.

Although Marie had been able to follow all school routines at her previous school placement, the occupational therapist noted that Marie initially exhibited some difficulty in this area during the initial few weeks of first grade. For example, Marie did not notice that all other children hung up their jackets on first entering the room and, therefore, she would wait until she was uncomfortably hot before hanging up her jacket. This was disruptive in her first grade class setting. Simply making the routine of hanging jackets upon entering the classroom clear to Marie solved this problem. In another instance, placing a picture of Marie sitting at her desk at home on a folder containing homework provided the necessary cue for Marie to take the right folder home each night.

However, understanding the nature of some of Marie's difficulty with school routines took effort. For example, Marie would occasionally wander around the campus after being excused to go to the bathroom during class time. This puzzled the teacher because Marie seemed to know how to use the bathroom and return to class independently. The IEP team members were reluctant to have the classroom aide accompany Marie to the bathroom because of its proximity to the classroom and their evaluation that she should be able to go independently. After observing the situation, the occupational therapist noted that if Marie made a wrong turn after leaving the bathroom, she became disoriented and wan-

dered the campus. If she turned correctly, she promptly returned to class. To solve the problem, a small arrow pointing in the right direction was placed on the wall for Marie to see as she left the bathroom.

Social Skills

While in the class, Marie had no difficulty with social integration in that she was talkative with classmates, spontaneously engaged in games, and was generally well accepted by her classmates. However, the lunchroom aide noted that Marie took the entire 45 minutes to eat her lunch and as a consequence, did not have time to play during the recess that followed lunch. The occupational therapist suspected possible oral motor problems and evaluated the situation with an ecological observation. The occupational therapist found that Marie had adequate oral motor skills and the ability to manipulate lunch materials so that she could finish her meal on time if she desired. However, by eating slowly, she had the opportunity to interact with children from different classes that would come and sit with her. When one class would finish eating and go to recess, another class would soon join her. It was obvious that Marie wanted to interact with other children but had difficulty breaking into the social circle of her peers during free-play situations.

The occupational therapist worked with the playground supervisor to devise a role for Marie during recess. When her class left the lunch table to go to recess, Marie was encouraged to do the same. During recess, she was paired with another student in the ball room, a special assignment coveted by most of the children. Students that wanted to check out balls for playground use would ask Marie for a ball and give her their names. In this way, Marie learned the names of many of her classmates and became known to many of them. Later, she was invited to play ball with a small group of students, thus naturally integrating into the playground activities.

Fine Motor Skills

Standardized testing with the Peabody Developmental Motor Scales and Activity Cards (Filio & Fewell, 1982), along with clinical observations confirmed that Marie's motoric deficits were primarily fine motor in nature. Marie inconsistently used a mature dynamic tripod grasp, which was compounded by difficulty with in-hand manipulation activities. As a result, she could not form any letters and had great difficulty manipulating classroom tools, such as scissors. Intervention was multifaceted. The occupational therapist, teacher, and classroom aide collaborated on classroom activities and crafts that would

promote fine motor manipulation skills for Marie and incorporate curriculum goals and age-appropriate tasks for the other pupils. These activities were included in the classroom routines. For example, a clothes line with clothes pins was used to display students' artwork, and Marie's classroom job was to hang the artwork on the line each day.

In addition, a specific handwriting program was developed that used a shortened pencil to facilitate the web space of Marie's hand, paper with dark line guides to promote proper letter placement on the page, and a letter formation guide strip taped to her desk. She was carefully instructed on letter formation, beginning with the letters of her name. The goal was for her to properly form all letters of her name rather than approximate each letter with an incorrect sequence of letter formation. A perceptual approach to printing was incorporated and taught to the classroom aide so that this handwriting program could be reinforced during all classroom writing tasks. Marie's fine motor progress by the end of the school year was considerable. In 7 months, she demonstrated 12 months' progress as measured by the Peabody Developmental Motor Scale and Activity Cards. In addition, she was able to use a dynamic tripod grasp with good web space and improved in-hand manipulation. She also demonstrated the ability to use scissors independently. Marie's handwriting had improved to the point that she was able to write her name and weekly spelling words legibly.

Summary

In addition to the progress made in occupational therapy goals areas, Marie's involvement in the full-inclusion program at Moorpark Unified School District was a success for both she and her peers without disabilities. Marie demonstrated major academic progress in that she began reading and was able to perform simple addition and subtraction equations by the end of the school year. In addition, she was socially integrated within the classroom and made friendships that extended outside the classroom. The teacher also noted a difference in the class culture in that the class as a whole was more cooperative and tolerant of individual differences than her past classes that had not included a student with disabilities. In addition, general education students who were lower functioning benefited from the special activities (e.g., the fine motor projects) provided as part of the regular class milieu. Related service interventions incorporated into the instructional programs also allowed other students to be served without the necessity of a special education classification.

Full-inclusion classroom placements offer a unique

opportunity for involvement of a school-based occupational therapist. Although it is just one option of the continuum of classroom placements available to students with disabilities, full inclusion is becoming increasingly common for students with all levels of disabilities. The philosophy behind full-inclusion class settings dictates that related services, such as occupational therapy, be provided within the context of the activity. This focus on naturalistic settings is congruent with the basic training of occupational therapists. The gross motor, fine motor, and perceptual interventions common to school-based occupational therapy can easily be adapted to the natural setting. Comprehensive intervention will seek to provide remediation involving classroom routines and occupations and social skills training and address accessibility issues present in full-inclusion classrooms. ▲

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