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Ideas for Inclusion: A Resource for Occupational Therapists

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IDEAS FOR INCLUSION: A RESOURCE FOR OCCUPATIONAL THERAPISTS

by

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Submitted to the Occupational Therapy Department

of the

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In partial fulfillment of the requirements

for the degree of

Master's of Occupational Therapy

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This Scholarly Project Paper, submitted by Jason Browning and Roxanne Hartje in partial fulfillment of the requirement for the Degree of Master's of Occupational Therapy from the University of North Dakota, has been read by the Faculty Advisor under whom the work has been done and is hereby approved.

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PERMISSION

Title Ideas for Inclusion: A Resource for Occupational Therapists
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Signature Jason Browning Date 3/26/2008

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ABSTRACT

School-based occupational therapy practice is continually changing to meet the needs of the students and stay in alignment with federal mandates and current research. Current legislative regulations of No Child Left Behind Act of 2001 (NCLB 2001; Public Law 107-110) and The Individuals with Disabilities Education Improvement Act of 2004 (IDEIA 2004, Public Law 108-446) together require that education programs be provided in the natural or least restrictive environment. After the review of literature and personal interviews it was found that many occupational therapists, teachers and school based staff were having difficulty fulfilling this requirement, often using the direct, pull-out service model.

The author's intent of the scholarly project was to develop a guide for new and experienced therapists to promote collaboration between occupational therapists and school personnel. The guide was designed to address educationally relevant occupations and foundational skills for 4-6 year olds through activities that can be provided in an inclusive school setting. The intention of *Ideas for Inclusion: A Resource for Occupational Therapists* is to encourage occupational therapists to use a more inclusive, population-based service delivery model in the school setting through collaboration with and coaching of educational personnel. The activities suggested the product include sensory motor, gross motor, fine motor, self-care, and social skills. These skills were chosen because of their developmental characteristics which promote performance of the

higher-level educational tasks such as reading, writing, and socializing with peers based upon literature review. Practitioners and teachers are encouraged to integrate the guide's units and targeted developmental skills into the naturally occurring student's schedule and create new ideas to further the educational success of the targeted students.

CHAPTER I

INTRODUCTION

Occupational therapy, along with all disciplines in the school system are migrating to a new service delivery model. Occupational therapists, both new and seasoned, may have difficulty determining which delivery model is best for the student and aligning the service with recent legislation. Inclusive occupational therapy, being the least restrictive and most aligned with legislation, follows the same trend as a lot of other interventions and accommodations currently practiced in the schools. No matter which mode of service delivery is offered in today's classrooms, it must be about diversification, designing classroom instruction and activities to specifically meet the needs of all learners, all at the same time, in the same classroom.

Statement of the Problem

Occupational therapy has been a vital partner in the success of school-aged children since the adoption of the Education for All Handicapped Children Act of 1975 (Public Law 94-112). Although occupational therapy exists in the school system, it is typically offered in the more direct or pull-out model classified by the removal of a student from the general classroom environment to a remote location, where the therapy is conducted (Spencer, Turkett, Vaughan, & Koenig, 2006). Recent reauthorization of Individuals with Disabilities Education Improvement Act 2004 (IDEIA) (§614(d)(1)(IV)) and the No Child Left Behind Act of 2001 (NCLB 2001; Public Law 107-110) requires

that education programs be provided in the natural or least restrictive environment (LRE). The least restrictive environment in the school system implies the student must remain in the general education environment as much as possible to meet his/her educational needs. This legislative movement has proved problematic for school personnel. Therapists, teachers and administrators are affected by the difficulty of providing therapeutic procedures in the classroom, scheduling, and designing activities for large groups.

Occupational therapists are slowly moving to an inclusive model after the mandates of IDEIA 2004; however a national survey by Swinth and Hanft (2002) showed that 74% of therapists provided pull-out therapy in a dedicated therapy space. The extensive literature review completed for this project revealed three major concerns that may be the cause for the slow move to inclusive services: (1) definitions of the therapeutic models of service delivery were available in therapeutic sources but not readily obtainable to school personnel, (2) school staff are unfamiliar with occupational therapy and therapeutic procedures that can be offered within the classroom, and (3) basic programs to assist therapists in implementing therapeutic interventions in the general education environment are not easily accessible. A program to address these concerns makes an inclusive occupational therapy model a successful and more comfortable venture for students and all educational team members.

Purpose of the Product

The authors' intent for the product is to diminish the concerns discovered throughout the extensive literature review and to provide a helpful resource tool for occupational therapists to promote collaboration with teachers and to facilitate a

population-based model of occupational therapy in the school system. Many general education teachers are challenged with students with disabilities; additionally, these teachers must help students that are having trouble meeting expectations, but are not yet identified through special education. This resource is meant to be used as a tool to guide and assist registered occupational therapists, certified occupational therapy assistants, entry-level therapists, and occupational therapy students to provide a population-based model of occupational therapy intervention. The authors chose activities which can be successfully and easily implemented by an informed teacher into the general education curriculum in collaboration with an occupational therapist.

This resource is specifically intended to help serve children 4 to 6 years of age, or pre-kindergarten and kindergarten children, in the general education curriculum. The ideas used in this resource include a combination of preparatory methods, purposeful activity, and occupation-based activity. The purpose for this resource is to encourage therapist and teacher collaboration and to enhance the student's performance skills and everyday occupations of play, social skills, education, and self-cares through activity participation in the natural context.

Theoretical Models

The information provided and design of the product uses several theoretical perspectives including: Ecology of Human Performance (EHP), developmental and motor control/learning theories. The EHP model focuses on interdisciplinary orientation and most importantly focuses on the person, task and context within which the therapy is offered (Dunn, Brown, & Youngstrom, 2003). Five possible interventions outlined in

EHP were used in the development of the product design: establish/restore, adapt/modify, alter, prevent and create (Dunn, Brown, McClain and Westman, 1994). Developmental models such as Piaget's developmental stages assisted with the design and placement of activities. Developmental models are a universal language among disciplines, and have often formed a golden standard for understanding child development and the skills children acquire (Dunn, 2000). While developing a product to facilitate skill acquisition, the areas of child development and context were both taken into consideration.

Overview

In order to substantiate the product, a review of literature was completed, the methodology was defined, and recommendations are provided. This document is divided into five chapters with the review of literature following this introduction. The third chapter describes the methodology used to develop the product, which is presented in chapter four. The final chapter is a summary of the strengths and conclusions of the product, recommendations for implementation, and a description of the potential for future research or development. Also included are Appendices: (A) composition of an IEP team, (B), referral process, (C), special education process, and (D), Piaget's developmental stages.

CHAPTER II

REVIEW OF LITERATURE

School-based occupational therapy is influenced by reauthorization and ever evolving legislation, new studies and theoretical perspectives for human occupation (Fisher, 1989), and research pushing special educators into a new frontier (McGregor & Vogelsburg, 1998). According to Spencer, Turkett, Vaughan, and Koenig (2006), two other factors contributing to the evolution of special education and school-based occupational therapy practice include collaboration and promotion of student participation at the environment level or general curriculum. Researchers (Barnes & Truner, 2001; Nochajski, 2001) suggest that collaboration is a crucial piece to improving student performance. With the given research and legislation, it becomes best practice for school-based occupational therapists to provide intervention at the natural environment level. This includes a student's performance context at the school including physical, academic, and social factors that impact student participation and well-being (Richardson, 2002).

The first section of this chapter is an overview of literature and research pertaining to occupational therapy in the school system. The second section addresses theoretical perspectives and the next section includes an overview of foundational skills for educational success. The final section addresses the need for inclusive occupational therapy programming.

Overview of Occupational Therapy in the School System

The 2004 reauthorization of the Individuals with Disabilities Education Act (IDEA; Public Law 108-446) mandates occupational therapy be offered in every school district in the United States. According to IDEA, occupational therapy in schools must be related to the educational success of each student that qualifies for occupational therapy services. Occupational therapy practitioners in the school system use purposeful, goal directed activities or strategies to enable a student with a disability to benefit from the special education provided. Teachers frequently have children with and without disabilities that are not receiving services in kindergarten, but are having difficulties meeting expectations (Shasby & Schneck, 2005). In addition to the children not identified, teachers must meet the challenges of children with disabilities in their classroom. Occupational therapists are in a unique position to help teachers and students by providing information to help students improve and/or compensate for skills needed to be successful in the general education curriculum. Occupational therapists' contact and collaboration with teachers is an important factor in the student's achievement of goals. In a report by Dreiling & Bundy (2003), the authors noted that collaboration of team members was the key to successful goal attainment, which is the ultimate outcome of the IEP team and stake holders.

School-based practice is continually changing and evolving (Pape, Ryba, & Case-Smith, 2004). Occupational therapy practitioners must evolve with the laws and trends to expand their roles in the school system (Chandler, 2007). With a paradigm shift into a community model of practice, the occupational therapist must take the role of coach, enabler, and facilitator in current practice (Scaffa, 2001). Ideishi, Ideishi, Gandhi, and

Yuen (2006) suggest a model of service delivery in the school that shifts practitioners from the familiar one-to-one child and adult interaction to the less familiar social, population-based, and ecological model of shared interactions as part of the therapeutic intervention process. Occupational therapy practitioners must gain experience to deal with the shifting perspectives and roles in school-based therapy.

Definition of Occupational Therapy

Since its inception in the early 1900's, occupational therapy has been a profession of helping clients recapture purpose in their lives, because purpose is found in the occupations in which people are engaged. Occupations are defined as the ordinary items that occupy lives of people (American Occupational Therapy Association [AOTA], 2002). Since people of all ages have occupations, occupational therapy services are provided to individuals across the lifespan from birth to end of life preparation.

Occupational therapy as a profession today is defined as, "the skilled treatment that helps individuals achieve independence in all facets of their lives. Occupational therapy assists people in developing the 'skills for the job of living' necessary for independent and satisfying lives." (AOTA, n.d.c, ¶ 1) Occupational therapy practice specializes in bringing meaning to client's lives in all settings including home, school, work, play, and rest.

The American Occupational Therapy Association (AOTA), a governing body for the profession, was formed in 1917 (AOTA, 1991, 2004). The following is the mission statement of the AOTA: "the American Occupational Therapy Association advances the quality, availability, use, and support of occupational therapy through standard-setting, advocacy, education, and research on behalf of its members and the public" (AOTA,

n.d.a). Along with the AOTA, the National Board for Certification in Occupational Therapy, Inc. (NBCOT®) is one of the governing agencies for practitioners of occupational therapy. The NBCOT®s mission is:

To serve the public interest through the certification of occupational therapy practitioners. We provide a world-class standard for certification of occupational therapy practitioners. The National Board for Certification in Occupational Therapy, Inc., will develop, administer, and continually review a certification process based on valid certification standards (NBCOT, 1995, p.1).

According to an AOTA fact sheet about OT practitioners (n.d. b, ¶ 2), two types of practitioners of occupational therapy exist, the registered occupational therapist (OTR) and the occupational therapist assistant (OTA). AOTA (n.d b, ¶ 1) states, “Occupational therapy practitioners are trained professionals whose education includes the study of human growth and development with specific emphasis on the social, emotional, and physiological effects of illness and injury.” Occupational therapists are graduates of accredited programs with Master’s or Doctorate degrees; they are required to complete supervised clinical internships, and pass a national accreditation test prior to licensure (AOTA, n.d. b., ¶ 3). States have developed occupational therapy boards to govern over the practice and set forth rules and practice acts within each jurisdiction (AOTA, n.d. b, ¶ 3).

Definition of School-Based Occupational Therapy

Occupational therapy has been a vital partner in the success of school-aged children since the adoption of the Education for All Handicapped Children Act of 1975 (Public Law 94-112). This law made formal the promise to offer all children, regardless of disability, a free public education. The most recent reauthorization of this law proposed a name change to the Individuals with Disabilities Education Improvement Act

(IDEIA). According to Part B of the law (§300.34(a)), OT is a “related service” for eligible children aged 3–21 who require assistance to benefit from special education and who have diagnosed disabilities that are physical, behavioral/psychosocial, cognitive, or other delays that interfere with the child’s ability to benefit from special education (§602(26)(A)).

Occupational therapy services in the school environment differ greatly from services provided in through a medical model. In the school system, as previously noted, occupational therapy is a related service meaning it must enhance or support educational goals already set forth by the individual education plan (IEP) (Dunn, 1988). According to IDEA § 300.344, an IEP team consists of:

- (a) *General.* The public agency shall ensure that the IEP team for each child with a disability includes—
- (1) The parents of the child;
 - (2) At least one regular education teacher of the child (if the child is, or may be, participating in the regular education environment);
 - (3) At least one special education teacher of the child, or if appropriate, at least one special education provider of the child;
 - (4) A representative of the public agency who—
 - (i) Is qualified to provide, or supervise the provision of, specially designed instruction to meet the unique needs of children with disabilities;
 - (ii) Is knowledgeable about the general curriculum; and
 - (iii) Is knowledgeable about the availability of resources of the public agency;
 - (5) An individual who can interpret the instructional implications of evaluation results, who may be a member of the team described in paragraphs (a)(2) through (6) of this section;
 - (6) At the discretion of the parent or the agency, other individuals who have knowledge or special expertise regarding the child, including related services personnel as appropriate; and
 - (7) If appropriate, the child.

The student must be referred to a special education program to qualify for occupational therapy. Occupational therapists may work to enhance: (1) student performance skills, e.g., motor, process, communication/interaction skills; (2) performance patterns, e.g., needed or important school habits, routines, roles; (3) the student's educational context, e.g., physical, social, cultural, technology; (4) the student-activity match, e.g., space, objects, timing, student function needed; and (5) individual student factors, e.g., body structures and functions (AOTA, 2002). Regardless of the student's impairment, the ultimate goal of occupational therapy in the school system is to improve the educational performance and provide access to tasks and activities to allow all students the education granted to them by the IDEA (AOTA, 2000). The occupational therapist acts as a liaison with the faculty and staff of the school, as well as, guardians to ensure an understanding of student's skill/potential and the expectations of the chosen program (Whalen, 2002).

The student's educational performance may be impaired in a variety of areas including physical, developmental, sensory, or attention (Whalen, 2002). According to Royeen and Marsh (1988), the occupational therapist is in place to understand and articulate the internal functions of a child and understand if the child has issues that can be addressed to allow better function in the classroom. Occupational therapists also understand the interactions between the environment and behaviors of the child. Occupational therapists address the underlying dysfunction or establish compensatory strategies for skills they are unable to change. The school-based therapist must follow guidelines outlined in the IEP and document progress (AOTA, 2006). Unless school-

based occupational therapists can prove their work is significant to the student's educational success, the therapy provided may be discontinued (Royeen, 1986).

Overview of Laws Governing School-Based Occupational Therapy

Occupational therapy, as previously addressed, is a related service of the special education program under The Individuals with Disabilities Education Improvement Act of 2004 (IDEIA 2004, Public Law 108-446). This legislation was labeled as an improvement because it was written to coincide more with the general education initiative proposed in the No Child Left Behind Act of 2001 (NCLB 2001; Public Law 107-110). The two laws together require that education programs be provided in the natural or least restrictive environment (LRE). The least restrictive environment for young school children is defined as:

To the maximum extent appropriate, children with disabilities, including children in public or private institutions or other care facilities, are educated with children who are not disabled, and special classes, separate schooling, or other removal of children with disabilities from the general education environment occurs only when the nature or severity of the disability is such that the child cannot achieve academically in general education classes with the use of supplementary aides and services. (20 U.S.C. § 1412 (a)(5)(A)).

IDEIA 2004 also allows districts to use a portion of their funding for early intervening services (EIS) with the hope of preventing referrals to special education (Shasby & Schneck, 2005). EIS are for students in kindergarten through 12th grade who are at risk for school failure due to learning or behavioral concern (IDEIA, 2004). EIS, part of Response to Intervention (RtI), are a general education initiative. RtI focuses on general education interventions and instruction, and is designed to “reduce the number of students who experience academic frustration and failure, many of whom end up in

special education programs” (National Association of State Directors of Special Education [NASDSE], 2006, p. 18). This provision meets the academic, social, emotional, behavioral, and functional needs of students who do not receive special education services but who would benefit from interventions (Cahill, 2007). RtI poses opportunities for occupational therapy practitioners to use their skills and knowledge to promote academic success with all students and not just those with IEPs. In addition to understanding the federal mandates, it is important that therapists know their state practice regulations, especially those that relate to physician referrals for evaluation and intervention (Pape, Ryba, & Case-Smith, 2004). In addition to state and federal laws, the *Occupational Therapy Practice Framework: Domain and Process* offers guidance for school-based practitioners by identifying education as a key performance area in occupation (AOTA, 2002). Other occupations listed by AOTA (2002) for children include self-care, play and social skills.

Current Service Delivery Practices

IDEIA (§614(d)(1)(IV)) states that related services can be provided directly to or on behalf of a child or indirectly through program modification or support for school based personnel, OT is no exception. This statement aligns with the three main service levels through which occupational therapy is typically delivered within the school system: direct service, monitoring or consultation (Dunn, 1988). All three service levels are appropriate depending upon the need of the student. The decision as to which level is appropriate is strictly based upon needs identified by the IEP committee (Dunn, 1988). See Appendix A for composition of individualized education plan team.

Direct service is defined as the student in a one-on-one or small group setting with interactions being done by the therapist. Direct service is the most used method of service delivery (Dunn, 1988). This model uses the individualized plans and creates a specific service strategy based upon the needs of the student and is most often carried out in a one student to one therapist ratio. According to IDIEA 2004, this model is not the most appropriate because utilizing a one-on-one treatment approach often pulls the student from the regular education environment into a special education environment. According to IDIEA 2004, services must be completed in the LRE (20 U.S.C. § 1412 (a)(5)(A)). This model of delivery however does provide the most consistent contact with the therapist (Dunn, 2000). In a recent national survey, 74% of therapists provided pull-out therapy in a dedicated therapy space (Swinth & Hanft, 2002).

Monitoring differs from direct service because it is more IDEIA friendly. It is defined by the AOTA as a collaborative teaming approach to provide supervision for other professionals who are implementing intervention procedures developed by an occupational therapist (Dunn, 2000). The occupational therapist completes the occupational therapy evaluation process and develops the plan of action, which then becomes a part of the student's IEP. Other professionals such as teachers, paraprofessionals and other school-based staff are trained hands-on by the therapist to provide certain interventions with the child. All other staff members are supervised in accordance with state guidelines. In a recent survey, Swinth and Hanft (2002) found that 75% of therapists use this type of service delivery model to provide service for the children in their district when appropriate. Collaboration is used to identify the learning deficit following a referral process as outlined in Appendix B. The collaboration process

is used not only as a means of placing the child in the special education or related service programs, but is also used during the treatment process to allow maximal learning to take place (Hanft & Pace, 1996).

Consultation is an indirect model of service delivery and consists of contact with other professionals on an infrequent basis. A consultative approach was introduced to occupational therapy school-based practice in the early 1990's and was positively accepted by teachers (Dunn, 1991). This approach is characterized by verbal consultation with other professionals; the therapist shares his/her expertise to assist other professionals with the goals they are working on with each student (Dunn, 2000). In a study completed by Kemmis and Dunn (1996), the support for occupational therapist and teacher collaboration in the educational setting posed positive effects for intervention success in the classroom. The authors also noted that the teachers preferred compensatory strategies when working toward academic goals, which supports inclusion of occupational therapy techniques in the classroom. Consultation can be categorized three ways: case consultation, colleague consultation, and system consultation (AOTA, 1987, 1989, 1999). Case consultation is student specific with consultation to a specific person on the team about the needs of an individual student. Colleague consultation is a means of collaboration where the therapist will meet with other professionals to address concerns they have in general, and it is not student specific. System consultation focuses on improvements as a whole in a school or county wide process. General ideas or expertise are offered to address specific concerns within the departments of the county school system (Dunn, 2000). Dunn (1991) found in her research that a collaborative consultation approach for intervention with preschoolers yielded an equivalent number of

achieved IEP goals when compared to a direct service model. The U.S. Department of Education (2000) also reports inclusion to be the primary chosen method of service delivery for young children with disabilities.

All forms of collaboration are valid and beneficial but differ in benefits to each case. Knippenberg & Hanft (2004) conclude that through collaborative consultation, occupational therapists should increase the team's understanding of supports or strategies to aid a student to function to the best of their ability. Swinth and Hanft (2002) suggest that the service delivery model can be made more flexible by combining direct, "hands-on" intervention integrated within school activities with consultation and coaching for educational personnel. It is also important for therapists to follow practice guidelines and public laws while practicing and developing a service delivery model in the school system. Each type of service provision is evaluated by the IEP committee to ensure proper student achievement and it must be documented that services are provided in the LRE according to the individual needs of the student. Services are not provided in isolation, no matter what approach is used. It is important to look at all aspects of the student including: physical, emotional, social and therapeutic needs prior to choosing a treatment method. See Appendix C for an overview of the Special Education Process.

Problems Delivering Occupational Therapy in the School System

Present developments for delivery of occupational therapy services under an inclusive model of special education have revealed challenges for school-based occupational therapists. Literature supports collaborative efforts within the educational environment to address readiness skills (Bayona, McDougall, Tucker, Nichols, &

Mandich, 2006; Shasby & Schneck, 2005). Case-Smith and Cable (1996) report drawbacks to the use of the direct service model such as: limited generalization, fragmentation of services, and poor communication with teacher and parents. Still, many occupational therapists report providing services that contradict the emerging views of best practice.

According to a recent study by Spencer, Turkett, Vaughan, and Koenig (2006), practitioners spent most of their work week providing direct services in a pullout environment. The role of the initial occupational therapy training, the availability and nature of ongoing professional development, and the extent to which the practitioners access current practice trends are issues that have been explored to determine why an individual therapist prefers a particular service delivery model (Spencer et al., 2006). Occupational therapy practitioners must continue to adjust to current trends and laws. Creativity, cost-effective suggestions and activities, and good communication skills through collaboration and consulting, will prove inclusionary services are efficient and valuable in meeting the students needs (Ideishi, Ideishi, Gandhi, & Yuen, 2006).

Shasby & Schneck (2005) suggest the use of groups to enhance skills in young children. Even with the cons of planning time and funding, the authors feel that group interaction supports the concepts of the federal mandates by assisting children to learn within the natural environment. Through experience in the natural learning environment, children learn to use skills within the appropriate context and to anticipate the kinds of behaviors that are typically requested by the teachers and classroom staff (Shasby & Schneck, 2005). Ceci and Hembrooke (1995) determined children use different strategies when completion of the same task is demanded within a different context. This suggests

that acquired skills need practice in a variety of situations for a child to be able to problem-solve and associate learning (Ideishi, et al., 2006).

Theoretical Perspectives

In order to develop strategies within current occupational therapy school-based practice to facilitate skill acquisition, it is important to consider child development and context. Context has become an important factor when working in the school. The Ecology of Human Performance (EHP) model focuses on context and interdisciplinary orientation, and is compatible with occupational therapy (Dunn, Brown, & Youngstrom, 2003). The EHP framework focuses on the person, task and context within the therapy offered. EHP outlines five possible interventions that are utilized in the school system: establish/restore, adapt/modify, alter, prevent and create (Dunn, Brown, McClain and Westman, 1994). Since the school system personnel consists of teams with varying backgrounds, a framework such as the EHP provides common language for the entire team and facilitates collaboration. Ideishi, et al. (2006) stated collaboration between staff, child, and parents assists in identifying needs and interests of the child which help guide the team in the evaluation and intervention process.

When working with children, knowledge of the developmental milestones is a necessity. Developmental models have often formed a golden standard for the skills children possess (Dunn, 2000). While earlier aspects of development were strictly based upon observation of motor and cognitive development (Piaget, 1952), the new legislation aligning the IDEA and NCLB, emphasizes utilizing scientifically researched interventions and assessments (IDEA 2004, 34 C.F.R. § 300.35). Developmental models

have been researched and have an extensive influence on treatment practices with children in the educational setting (Dunn, 2000). Jean Piaget (1896-1980) is well-known for constructing one of the most famous models of child development, the learning stages of cognitive development (Child Development Institute, LLC, 2007). See appendix D for visual description of Piaget's developmental stages. It is important to acknowledge that all disciplines in the school environment often utilize developmentally researched assessments with reliability based up on developmental models of practice as required by IDEA 2004 § 614(d)(1)(A)(i)(IV), (AOTA, 2007). Developmental models are often utilized and tend to become a universal language among disciplines in the school based setting (Dunn, 2000).

Other important intervention theories used within the school system are the motor control and motor learning theories. Motor control is defined as the basic science of movement and the application of the movement to the environment is motor learning (Dunn, 2000). Occupational therapy practitioners in the school system assist students in learning new skills, which involve motor learning and emphasize the relevance of the skills to achieving a more independent existence (Gliner, 1985). With the time constraints and the move to inclusion based occupational therapy services, knowledge of motor learning techniques will assist the therapist to design therapy sessions to maximize learning for the student (Jarus, 1994).

Motor learning, which is a frame of reference used within educational based occupational therapy, involves a great deal of therapist student interaction or feedback. Feedback, both biological and extrinsic, is a key influential variable in the acquisition of motor skills, second only to practice (Bilodeau, 1966). Biological or intrinsic feedback

involves the sensory feedback from the body where as extrinsic feedback comes from an external source such completion of a task or praise from another person (Bilodeau, Bilodeau, & Schumsky, 1959). Using an inclusive model of occupational therapy provides an appropriate avenue for both intrinsic and extrinsic feedback for all students not just those involved in an occupational therapy program. In the classroom environment, children can reward each other during whole class activities. More importantly, the therapist or teacher can be present and deliberately planning to ensure each student has a successful activity experience regardless of disability. Providing the type of supportive environment where children are motivated participants is fundamental to student centered school-based occupational therapy practice (Missiuna & Pollock, 2000).

School-based occupational therapy practice draws from many different theories to provide the best care from a highly qualified therapist. New legislation requiring therapists to utilize all the necessary interventions to provide students with disabilities with a free appropriate education requires therapists of all disciplines to become knowledgeable about the many theoretical perspectives (AOTA, 2007). A review of the Ecological Model of Human Performance, Piaget's developmental levels and motor learning with appropriate feedback will assist most therapists in becoming an effective inclusive education model therapist.

Foundational Skills for Educational Success

Catherine Schneider (2006) stated in her book, "A firm foundation is necessary to create the best opportunity for learning" (p. 31). Opportunities for learning start with the functions of the brain which include: motor skills, cognitive skills, emotions, control of

the autonomic nervous system, and sensory integration (Schneider, 2006). Skills that develop the foundation for learning in the brain include moving, seeing, tasting, hearing, touching, smelling, and communicating. Participation with skills that are repeated and fun lays the foundation for learning (Ideishi, et al., 2006). In a study by Markham and Greenough (2004), findings revealed that influences such as specific learned tasks or responses to the environment had the power to sculpt the brain. In Greenough's experiments, exposure to more stimulating fun and games revealed brain growth in rats. This study shows the significance of making play fun, enriching, and developmental to create opportunities for learning.

Sensory Motor Skills

One of the newer trends in school based therapy involves treatment to address the function of the sensory system. Ayers (1979) states the sensory system is one of the first bodily systems to develop and a cornerstone upon which all other occupations are founded in children. Sensory integration is the presentation of the sensory input to the body, and the interpretation and response to the sensory input by the brain (Dunn, 2000). Children and all humans are constantly bombarded with sensory information through sensory input from the environment and contact with other people (Abraham, 2002). "Sensory motor processing/sensory motor integration is an essential to the functioning of the child, this processing and organizational ability is the foundation for motor skills, social behaviors, and the ability to accomplish more complicated tasks learned in school" (Schneider, 2006, p. 23). Ayers (1979) states the school environment adds stress and extra compensation for a child with sensory integration difficulties over a child in the general population. The purpose of treating from a sensory perspective is to create a state

of arousal, attention, and sensitivity to environmental stimuli that is optimal for learning (Ayres, 1972). Without these early opportunities to engage in learning through action, many young children begin school with inadequate motor skills (Abraham, 2002).

Movement is essential to the development of the sensory motor system. Input from all senses, equilibrium, proprioception, motor planning, tactile, vestibular, and bilateral motor coordination skills are used each time a person engages in fine or gross motor movements (Abraham, 2002). Although all activities involved with school entail the sensory system and movement, one of the most complex sensory and motor based tasks of a student is learning to transmit thoughts and feelings through written language (Admunson, 1992). Written language is one of the foundational skills that begin in kindergarten and are required throughout the school experience for most children. Given sensory motor integration is important to all students, Polcyn & Bissell (2005) promote developing school wide programs addressing basic developmental needs for movement and sensory input. Occupational therapists have the expertise to train staff members to integrate these activities and strategies throughout the daily routine (Polcyn & Bissel, 2005). Ways to address these needs include recommending sensory-enriched classrooms and playgrounds where students can be exposed to many sensory experiences from other students, outside noises and environmental stimulus. Woodward and Swinth (2002) report 92% of all American school-based occupational therapists utilize a multisensory approach to treat classroom motor impairments. By implementing strategies in the natural environment, student's needs are better met to support the educational goals. Learning to deal with the external sensory input within the natural environment will influence a child's future, by giving them skills to operate in the mainstream classroom.

Gross Motor Skills

Gross motor skills are the underlying skills needed for most schools-based occupations. Preschool and kindergarten activities facilitate the strengthening of gross motor musculature with greater amounts of play, physical education and less pen and paper or table top tasks. Gross motor development is one of the primitive movements involved in life. Included in gross motor functioning is the ability to move all large muscles of the arms or legs as well as the muscles of the abdomen and back, and the ability to incorporate reflexes that are naturally present. There are four key reflex patterns critical in the development of upper extremity readiness of hand reach and grasp: asymmetrical tonic neck reflex, symmetrical tonic neck reflex, and the tonic labyrinth in prone and supine reflexes (Goddard, 2002). An occupational therapist in the school system needs to have the knowledge of how activities for gross motor development, core muscle strengthening, and reflex development fit into the classroom environment. Dreiling and Bundy (2003) state consultation with teachers provides greater opportunities for repetition of foundational activities within the classroom. Daily repetition of the motor skills, strengthening and reflex development activities drives success in social and motor milestones translating to improvement in functional tasks at school (Poulsen, Ziviani, Cuskelly, & Smith, 2007).

Occupational therapy practitioners working with preschool level children integrate occupational therapy interventions into the gross motor outdoor play area including strengthening, visual perceptual, reflex integration, sensory integration and

socialization by assisting with classroom routines and providing information to the teaching staff on activities to encourage. Results of a study by Poulsen, Ziviani, Cuskelly, and Smith (2007) found that children with poor gross motor performance and minimal participation with physical activity had difficulties with social inclusion. Occupational therapists also have the knowledge of body placement and positioning and they can help ensure that a child is positioned appropriately in the classroom. Children who are seated optimally have an increased performance for in-hand manipulation skills (Smith-Zuzovksy & Exner, 2004). Occupational therapists understand that gross motor development leads to better fine motor performance within the classroom and they can convey this information to all the other members of the teaching staff to enhance a child's participation in the daily classroom routine.

Fine Motor Skills

School aged children participate in both fine and gross motor activities throughout the day to be successful. McHale and Cermak (1992) found that children in elementary schools spend 30%-60% of their daily routine involved with fine motor skills. The transition from preschool or Head-Start where there is an emphasis on gross motor development, occurs when a child starts kindergarten. In the kindergarten classroom there is an increase focus on fine motor skills and this transition can be difficult for some children. Kindergarteners in fact are often referred to occupational therapy because of poor fine motor performance; areas of concern include poor letter formation and handwriting (Marr & Cermak, 2002). Peterson and Nelson (2003) found that occupational therapy intervention can make a significant difference in handwriting scores. In every grade, starting with kindergarten, handwriting is an important functional

task that is required for everyday classroom participation (Marr, Windsor, & Cermak, 2001). Children not only have to concern themselves with handwriting but also other hand manipulation skills such as coloring, cutting, small object play and self care skills. Exner (1992) defines in-hand manipulation as the ability to adjust an object in the hand after grasp to allow more efficient placement of the object in the hand for use or for voluntary release. Buttoning, manipulating and adjusting a pencil or picking up a number of small objects and placing them in the palm or taking them out of the palm are a few examples of how in-hand manipulation skills are used in school. Five to seven-year-olds perform in-hand object manipulation skills throughout the school day. Children that have difficulties with fine motor tasks experience difficulties with their activities of daily living including functional performance at school (Polatajko, Fox, & Missiuna, 1995).

Occupational therapists inform school personnel of accommodations or specific interactions from which students with fine motor difficulties would benefit to facilitate the most productive and successful educational opportunity. Wehrmann, Chiu, Reid, and Sinclair (2006) stated that some strategies and programs used by occupational therapists in the schools could be taught to teachers to use with many, if not most, students within their classes, in addition to the child identified with fine motor difficulties. The service model identified in this article is consultation or monitoring; rather than using a direct service model, the therapist assists the teacher with activities to enhance the performance of the child with fine motor difficulties by involving the entire classroom in the activities. Case-Smith and Cable (1996) report drawbacks to the use of the direct model such as: limited generalization, fragmentation of services, and poor communication with teacher and parents; and Wehrmann, et al. (2006) found that the consultation or monitoring

model had a positive impact on the child's fine motor development.

Social Skills

School based social skills involve the interaction with other students, teachers and staff. Young children's peer-related social interactions are considered a critical developmental competency during early childhood (Brown, Odom, & Conroy, 2001). In a study by Brown, Odom, Li, and Zercher (1999) children with disabilities were found to be at risk for peer interaction difficulties. Mandich, Polatajko, & Rodger (2003) state children with motor impairments interacted with same age friends without motor impairments quality of life continues to improve. Participation in classroom and playground activities is the most popular social interaction in the school environment. By focusing occupational therapy intervention at an age appropriate level of participation in the natural context, children are able to develop coping skills for change, problem solving, and appropriate interactions with peers and the environment more effectively (Castaneda, Deitz, Skog, and Virnig, 2006). While at school, children with disabilities often attempt to initiate interactions but due to physical limitations, poor timing, inappropriate and/or lack of interest from peers are unsuccessful (Richardson, 2002). Occupational therapists provide expertise in social training or accommodations to allow students to become more involved therefore, less separated from peers. Loneliness can become chronic when participation in social activities is restricted over a long period of time (Rubin & Coplan, 2004).

Without the occupational therapist, the quality of occupational engagement is inconsistent, due to the availability and reliance on adults, for the child with disabilities.

Occupational therapists often know the child's functional capabilities, but spend little time in the classroom or consulting with the teacher because they are using a direct versus consultative service delivery model. Pullout services can limit the child's access for socially interacting with peers. When a child is pulled out of the classroom for therapy or adaptive gym, the child's ability to be fully engaged in classroom activities is disrupted (Richardson, 2002). Research has shown the positive effects of participation in meaningful activities with peers on health and well-being (Law, Steinwender, & Leclair, 1998). Activity participation with peers also leads to more effective social relationships (Masten & Coatsworth, 1998). Competence for pre-school and school-age children often is measured through developmental tasks, such as getting along with peers, following school rules and self-control (Richardson, 2002). Occupational therapists who utilize the inclusive model will increase the amount of time a student with disabilities can interact with peers in the classroom environment, and occupational therapists have the expertise to encourage socialization with education and social scripting.

Self-Care Skills

Self-care is defined as what children do to ensure health and wellbeing in their social and physical environment and it is a daily occupation for all individuals (Chapparo & Ranka, 1997). While at school, students need an array self-care skills to obtain a proper education including: dressing, hygiene, managing tools, and feeding themselves (Chapparo & Hooper, 2005). The goal set by the occupational therapist in conjunction with the teacher, should be to increase self-care independence of the student (Snell & Farlow, 1993). The performance of many self-care tasks depends upon the development of hand skills (Pape, Ryba, & Case Smith, 2004); but according to Berkell (1992) and

Snell and Farlow (1993), other factors should be considered as well when selecting tasks for instruction. Questions that need to be considered include: (1) Is the task currently performed by the student?, (2) Within what environment is the task going to be completed?, (3) What is the student's chronological and developmental age?, (4) In what manner at which other students perform the task?, and (5) What is the typical environment in which the task will be performed? Acquisition of self-care skills and daily living skills also depends on other related factors including the student's perceptual skills, cognitive skills, and the ability to motor plan to complete tasks that require multiple steps (Pape, Ryba, & Case-Smith, 2004). Henderson (1995) has indicated that developmental skills that are foundational for acquisition of self-care skill include grip abilities, bilateral hand use, proper hand positioning, and the execution of motor sequences. Pape, Ryba, and Case-Smith (2004) also state that gross motor components, such as head control and trunk stability, are needed for developing self-feeding skills, while fine motor components are needed for utensil use. Klein (1983) report prerequisites for successful dressing include sensory and motor performance skill components. These prerequisite skills include visual and tactile feedback; perceptual factors; active movement; coordination and balance; arm and hand control; and reach, grasp and release patterns. Teaching daily living skills is most effective in the natural environment; however it is not always possible secondary to scheduling, parental request, privacy concerns and staffing issues (Westling & Fox, 2000). Whenever possible all of the prerequisite skills for self-care can be offered using an inclusive model with all children in the classroom.

Need for Inclusive Occupational Therapy Programming

The reauthorization of IDEA, has led to a more inclusive model of special education services (Polcyn & Bissell, 2005). The authors of IDEA persist in efforts to align special education as part of general education, rather than a separate entity. The research of Dreiling and Bundy (2003) supports providing therapy in a child's natural environment; this allows children with and without disabilities opportunities for repetition of motor and social skills in the natural context of the school environment. Kellegrew (2000) states it is difficult for a child to master a skill that they do not consistently perform or that is not part of a routine in their natural environment. The reason for this shift is apparent and research has shown that students can develop skills when working in the natural context, versus a pullout model of therapy. Richardson (2002) found that when the pullout model is used, it limits social interaction time with peers, this affords children less opportunity to engage socially and meaningfully, which results in less classroom based interaction.

The World Health Organization (WHO, 2001) recognizes participation to have a positive influence on health and well-being. Occupational therapists use participation in occupations as a means and an end (Gray, 1998). Individuals engage in formal and informal everyday activities in work and leisure that provide meaning. Law (2002) discusses that participation in meaningful activities leads to self-fulfillment and satisfaction, which is important for psychological, emotional, and skill development. In an article by Law (2002), factors such as life span, disabilities, environment, family and person impact participation. Occupational therapists need to create an approach for increased participation in population based therapy service in a natural occurring

environment for classroom based activities and provide staff education to improve the functional outcomes of all children. The product of this scholarly project, *Ideas for Inclusion: A Resource for Occupational Therapists*, will assist occupational therapists to address important functional outcomes through integrating occupational therapy services into the classroom to promote generalization and socialization. The manual is designed to facilitate the use of a consultative model that includes flexibility for direct services within the activities if appropriate to meet an individual child's needs.

CHAPTER III

METHODOLOGY

Occupational therapists in the school system encounter an array of problems in working with the students. The main focus for this project is the inability for new graduate therapists and seasoned therapists, alike, to integrate occupational therapy into the general education environment. This integration is now required by the IDEIA and NCLB Acts of the federal government. Not only are occupational therapists affected by the difficulty with procedures, scheduling, and designing activities for large groups, but the teachers are also uncomfortable with this transition. The purpose of this project and end product is to make the shift from a direct service model to an inclusive services model a smoother transition for both therapists and teachers. The product of this scholarly project will also act as a guide for new graduates or a therapist just beginning a school-based career to embark on an inclusive occupational therapy model.

An extensive review of literature was conducted and compiled to support the need for an inclusion guide to occupational therapy provision in the school setting. The literature reviewed involved legislation, theoretical perspectives, service model delivery and basic foundational skills pertaining to school-based occupational therapy. The literature reviewed included both research and non-research based articles and was foundational to the development of the product to this scholarly project. Input from

various occupational therapists, occupational therapist assistants, teachers and school-based staff verified the need for this type of product.

The review of literature and input from the other school personnel lead to the belief that an inclusion model for therapy was not only required by federal law but would be best practice for occupational therapists for meeting the needs of most students with disabilities. The product was developed with a developmental perspective utilizing various theoretical resources including the Ecological Model of Human Performance, developmental learning theory, and motor control/learning theories. The product has not been tested in the classroom for use as a guide but individual activities have been used by the creating therapists.

CHAPTER IV

PRODUCT

Occupational therapy practice in the school setting is continually evolving. New graduates and seasoned therapists face challenges with the shift of service delivery from a pullout model to a more population-based model. In addition, “best practices” for school-based occupational therapists calls for promoting student participation and access to the general education in the natural context. “Best practice” and occupational therapy research encourages collaboration with teachers for progress of the students (Kemmis & Dunn, 1996).

The information gathered from an extensive literature review led to and supported the need to develop a resource tool for occupational therapists to promote collaboration with teachers and assist therapists to use a population-based model of occupational therapy in the school system. Many teachers face challenges with students that have a disability. In addition, these teachers must help students that are having trouble meeting expectations, but have not been identified through special education. This resource is specifically intended to serve children 4 to 6 years of age or pre-kindergarten and kindergarten children in the general education curriculum. The ideas used in this resource include a combination of preparatory methods, purposeful activity, and occupation-based activity. While developing the product to facilitate skill acquisition,

child development and context were taken into consideration. The Ecology of Human Performance, Piaget's Development Theory, motor control and motor learning theories were used to develop the product. The purpose for this resource is to encourage therapist and teacher collaboration and enhance the student's performance skills and everyday occupations of play, social skills, education, and self-cares through activity participation in the natural context.

This resource is a tool to guide registered occupational therapists, certified occupational therapy assistants, entry-level therapists, and occupational therapy students. The authors chose activities according to development, success, and ease of implementation by the teacher into the curriculum. Teachers are more likely to implement the activities if they have been educated and are knowledgeable regarding the logic behind the activity. It is recommended that therapists initially provide a one or two-hour workshop explaining the role of occupational therapy in the school. During the workshop, it is also important to describe the activities and their educational relevance or significance to student success. The authors suggest weekly collaboration and coaching for problem solving and encouraging implementation from the teacher. Emailing or an informal meeting to address questions or concerns could be the weekly collaboration. Occupational therapists may choose to translate their knowledge and experience through modeling, instruction, demonstration, visual handout, and observing in the classroom. Using a combination of these teaching methods during and after the training workshop with educational personnel will increase success and implementation of program activities.

The resource is intended to be photocopied and utilized as often as necessary for training and implementation purposes. It has been designed to meet the needs of occupational therapy staff, but may be beneficial to special education and general education teachers, speech therapists, physical therapists, and parents working with pre-kindergarten and kindergarten students.

Ideas for Inclusion: A Resource for Occupational Therapists provides activities organized into units by performance skills: sensory motor activities, gross motor activities; fine motor activities; social skills; and self-help strategies. Each unit has a brief description of the skill, tips for implementation, and the relationship of the skill to school success. Units were organized according to children's developmental acquisition of skills. Within the unit, each activity includes the materials needed, preparation, instructions, and targeted development for ease of training for the occupational therapist and implementation by teacher. Each activity can be adapted or modified if a child is having difficulty. Teachers should be encouraged to contact the occupational therapist if a student is having difficulty participating in an activity. The occupational therapist can assist with modification and adaptation to enable the child to participate.

Teachers and therapist can decide if the children are successful with an activity before choosing to move on to a different activity. Therapists can use their expertise to change/modify an activity to make it interesting while still addressing the same skills. The teacher and therapist may decide that the activity needs revisiting due to student success or difficulty.

The activities can be integrated into the classroom in a variety of ways or times. Sometimes teachers like to integrate one fine motor activity and gross motor activity per week, while others prefer to choose to complete one unit, one activity at a time, before moving on to the next. It may also work to use one activity per week as a center or station, especially the fine motor and gross motor activities.

The intention of this guide is to incorporate developmental activities that are flexible and easily integrated into the child's natural school day. Collaborating with teachers and educational personnel is critical to attaining successful implementation into the general education curriculum. Assisting educational personnel to be knowledgeable, confident, and comfortable with the activity and program may take extra consultation and coaching, but will be worthwhile in the end.

Ideas for Inclusion:

A Resource for Occupational Therapists



Developed by

Jason Browning, MOTS and Roxanne Hartje, MOTS

Gail Bass, Ph.D., OTR/L, Advisor

University of North Dakota

Occupational Therapy Department

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UNIT I:

SENSORY MOTOR
ACTIVITIES

INTRODUCTION:

Sensory motor processing and sensory motor integration includes the ability to process and organize information coming into the brain. It is the foundation for motor skills, social behaviors, and the ability to accomplish high-level tasks in school. Responding negatively to light touch or hugs, difficulties making transitions, avoidance of certain textures, seeking of extreme tastes, high or low tolerance for temperatures, difficulties calming or arousing self, fidgeting, disliking of playground equipment, craving intense motion, difficulties making friends, and reluctance to try new activities are just a few characteristics that you might see in individuals with sensory dysfunction. Occupational therapists can implement strategies in the natural environment to support educational goals. Learning to deal with the ongoing sensory input within the natural environment will influence a child's future and give them skills to operate in the mainstream.

TIPS:

The activities given in this unit are just a few examples of the many things you can do to integrate sensory enriched activities into the child's naturally occurring school day. Once the teachers have the basic knowledge of sensory integration, it is fun to watch their creativity. When educating teachers it is important to discuss incorporating vestibular, tactile, motor planning, bilateral motor coordination, proprioceptive, and equilibrium strategies into the activity. Please refer to Appendix A for definitions of sensory terms.

The activities listed in this resource include vestibular, motor planning, bilateral motor coordination, proprioceptive, and equilibrium strategies. These ideas serve as a guide or reference for teachers, in developing further activities that they can incorporate into their classroom. The authors have found that once the teachers understand the importance of sensory integration, teachers become skilled in finding creative ways of incorporating sensory motor skills into the curriculum. A group of teachers

at one of the author's school developed a cooking theme to assist the children in learning letters through sensory strategies.

Remind your teachers to *consult with the therapist, if a child is having difficulties completing or participating in the activity*. Materials and preparation were taken into consideration when choosing the activities, due to school demands.

Railroad tunnel

Materials Needed:

- ✓ Space to form a human tunnel with the children in the classroom

Preparation:

1. Have the children count out 4-6 children to be the train.
2. The rest of the children will form the tunnel.

Instructions:

- ❖ Have the children that are the tunnel stand in a straight line, shoulder to shoulder and facing the same direction.
- ❖ The children will form the tunnel by bringing their hands down on the floor, forming a “V” shape with their body.
- ❖ The train group will crawl under the human tunnel.
- ❖ Each child should have the opportunity to be the train and tunnel.

Targeted Social & Sensory Motor Development:

- ❖ Proprioceptive input (heavy work to the joints by bearing weight on hands)
- ❖ Equilibrium (static and dynamic balance)
- ❖ Gross motor skills (coordinating movement, upper extremity strengthening, and stretching)
- ❖ Bilateral motor coordination
- ❖ Motor planning
- ❖ Spatial awareness
- ❖ Social skills (playing in cooperation with others)

Over & Under

Materials Needed:

- ✓ 1 large rug (circle rugs work well and are readily available in the classroom)
- ✓ Numerous pillows or bean bags

Preparation:

1. Place pillows underneath the rug.

Instructions:

- ❖ Instruct the children to stand on one side of the rug.
- ❖ Have each child cross the “rugged terrain” to get to the other side. You can have the children walk forward, backward, sideways to develop dynamic balance.
- ❖ Once all children crossed the top of the “mountain,” have them take turns crawling under the rug and through the pillows.
- ❖ Discuss the importance of providing encouragement to each other.

Targeted Development:

- ❖ Equilibrium (when moving over the terrain)
- ❖ Gross motor skills (walking on uneven terrain)
- ❖ Motor planning
- ❖ Bilateral motor coordination
- ❖ Tactile system (touch input)
- ❖ Proprioceptive input (crawling under the rug)
- ❖ Social skills
- ❖ Turn taking

Special Delivery

Materials Needed:

- ✓ Box with handles (post office/mail carrying boxes work nicely)
- ✓ Library books

Instructions:

- ❖ Have the children deliver the library books back to the library.
- ❖ Variations: Delivering milk from the lunchroom for snack time or pushing/pulling carts with classroom lunches

Targeted Sensory Motor Development:

- ❖ Heavy work (proprioceptive input) provides children feedback to where their body is in space
- ❖ Bilateral motor coordination
- ❖ Equilibrium

Stack it!

Materials Needed:

- ✓ Classroom chairs

Instructions:

- ❖ Instruct the children to place their chair on top of the desk/table when they leave the classroom.
- ❖ This can be a useful transitional task and provide routine and warning of an upcoming transition.
- ❖ When the children return to the classroom, have them place their chair under their desk/table.

Targeted Sensory Motor Development:

- ❖ Heavy work (proprioceptive input) helps the children gain information of where their body is in space
- ❖ Equilibrium (dynamic balance)
- ❖ Bilateral motor coordination
- ❖ Provides routine and forewarning of a transition

Helping Hands

Materials Needed:

- ✓ Tables, chairs, chalkboard, or white board

Preparation:

1. Spray bottle filled with water and 10 drops of a natural cleaner such as lemon oil, purification, or thieves (Young Living Oils) for tables and chairs OR plain water for chalkboard and white board.

Instructions:

- ❖ Instruct the children to wipe down surfaces using paper towels and spray bottle after or before snacks and projects.
- ❖ The children should be thorough with wiping and use a flat hand.

Targeted Sensory Motor Development:

- ❖ Proprioceptive or heavy work (wiping)
- ❖ Bilateral motor coordination (one hand squeezes the bottle and the other hand does the wiping)
- ❖ Fine motor (squeezing spray bottle)

Abraham, M.C. (2002). *Practical strategies and sensory motor activities for use in the classroom*. Grand Rapids, MI: School Specialty Publishing.

Young Living Oil Website: <http://www.younglivingoils.com>

Stretch

Materials Needed:

- ✓ Large piece of Lycra or spandex type fabric

Instructions:

- ❖ Have the children stretch the fabric by pulling with their hands. A group of children can use one piece of fabric.
- ❖ Wrap the fabric snugly around the children (depending on the size, could have two or more children being “snugged”). Be careful not to cover any part of the children’s head.

Targeted Development:

- ❖ Tactile input
- ❖ Proprioceptive input
- ❖ Equilibrium
- ❖ Bilateral motor coordination
- ❖ Motor planning
- ❖ Hand strengthening

Spinning to Music

Materials Needed:

- ✓ Music
- ✓ Space for children to spin

Instructions:

- ❖ Instruct the children to put arms straight out to side with eyes closed and chin tucked slightly.
- ❖ Have the children begin spinning, approximately 15 seconds and 15 revolutions, when the music starts.
- ❖ The children should stop spinning when the music stops.
- ❖ Repeat spinning in opposite direction for another 15 revolutions/seconds.
- ❖ Repeat spinning in both directions 1-2 more times.
- ❖ Instruct the children to stay in their space and not bump into each other for safety.

Targeted Sensory Motor Development:

- ❖ Vestibular input
- ❖ Motor planning
- ❖ Equilibrium
- ❖ Spatial Awareness

Straw Games

Materials Needed:

- ✓ 1 Straw per child (larger barrels are easier)
- ✓ Masking tape
- ✓ Paper or a small plastic ball (ping-pong ball, golf balls, marbles)

Preparation:

1. Have the children rip off a chunk of paper and form a ball.
2. Place masking tape down on floor for start/end line (you can also have children assist you with this chore). You can also have them make a miniature obstacle course with a small group.

Instructions:

- ❖ The children can maneuver their “ball” across a table or floor or through the obstacle course by blowing through the straw.

Targeted Sensory Motor Development:

- ❖ Oral-motor skills (blowing can be very calming and organizing)
- ❖ Helps children focus by calming their system
- ❖ Visual system (encourages visual attention on objects)
- ❖ Bilateral motor coordination and fine motor skills (ripping tape and paper)
- ❖ Social skills if you have small groups or the class make a miniature obstacle course

Kranowitz, C.S. (2003). *The out-of-sync child has fun: Activities for kids with sensory integration dysfunction*. New York: The Berkley Publishing Group.

Frog Tongue

Materials Needed:

- ✓ 1 blow toy per child (birthday party favors)
- ✓ Double-sided tape
- ✓ Small pieces of paper with a letter on each piece
- ✓ Scissors
- ✓ Pencil

Preparation:

1. Place a small piece of double-sided tape on the end of the blow toy.
2. Children can cut out small squares (approximately 2-3 inches). Have them cut one square per letter of their name. Write a letter on each piece of paper.

Instructions:

- ❖ Instruct the children to blow the party favor out to catch the first letter in their name.
- ❖ Continue catching the letters in name in correct sequence.
- ❖ Place letters in correct order to form name.
- ❖ It is fun for the children to pretend that they are frogs catching their food.

Targeted Sensory Motor Development:

- ❖ Oral-motor input
- ❖ Visual system
- ❖ Bilateral motor coordination and fine motor skills
- ❖ Visual-perceptual skills (putting letters in correct order)

Adapted from Frick, S., Frick, R., Oetter, P., & Richter, E. (1996). *Discovering the developmental significance of the mouth: Out of the mouths of babes*. Hugo, MN: PDP Press, Inc.

Sensory Letters/Numbers

Materials Needed:

- ✓ Shaving cream, shaving gel, aloe, lotion, toothpaste, mud, or pudding
- ✓ Cafeteria trays (this will help contain the mess)

Preparation:

- ❖ Place materials on table or use cafeteria trays.
- ❖ The children can help with preparation, with supervision, by dispensing materials.

Instructions:

- ❖ Instruct the children to write letters with reminders to use correct letter/number formation.
- ❖ Have all children follow along with demonstration.
- ❖ Allow a few minutes of free play with the shaving cream, shaving gel, aloe, lotion, toothpaste, mud, or pudding at end.

Targeted Sensory Motor Development:

- ❖ Functional school skills (writing letters, shapes, and numbers)
- ❖ Bilateral motor coordination and fine motor skills (opening containers, squirting shaving cream/gel or aloe)
- ❖ Tactile input
- ❖ Motor planning

Adapted from Kranowitz, C.S. (2003). *The out-of-sync child has fun: Activities for kids with sensory integration dysfunction*. New York: The Berkley Publishing Group.

UNIT II:

GROSS MOTOR ACTIVITIES

INTRODUCTION:

Gross motor skills lead to better fine motor and social skills. Occupational therapists use their knowledge of child development to educate teachers of the importance of gross motor skills such as strength, reflex integration, coordination, and balance. Gross motor skills in cooperation with sensory motor skills are the foundation for building upon a child's fine motor, social and self-help skills. A child must have integrated reflexes to function with a higher-level task such as sitting at the desk and copying from the board. A child who does not have integrated reflexes will have poor posture, poor coordination of movement, and develop maladaptive movement patterns. Strength, coordination, and balance skills are important for moving the body throughout the day in a variety of tasks such as carrying cafeteria trays, playing on playground equipment, or participating in a game of kickball with friends. By integrating gross motor skills throughout the student's day, teachers will support the foundation for completing complicated school tasks such as reading and writing.

TIPS:

The authors recommend completing the first two units prior to beginning the other three units, secondary to child development. It is important for the teachers to have a working demonstration of the activity prior to implementing it into the classroom. This is best done through demonstration and return demonstration during collaboration or coaching time. Remind the teachers of the importance of observing for children who are unable to complete the activity as instructions state. ***The therapist should be consulted if a child is having difficulties completing or participating in the activity.*** Therapists can adapt and modify activities so students can be successful participants.

The ideas in the gross motor section, especially the first four reflex activities, should be integrated into the classroom routine ***at least daily*** until the students are able to complete the activity successfully. The authors and teachers that have used these ideas in the classroom have found these

activities work well when the children have been sitting too long or need a break. The gross motor ideas require minimal preparation and materials, so they can easily be used by teachers with low budgets and high curriculum demands.

Rocking Horse

Materials Needed:

- ✓ Space for all the children to be on their hands and knees

Instructions:

- ❖ Instruct child to be on their hands and knees, as they would if they were going to crawl.
- ❖ Have the children turn their chin to one shoulder, with the head and back level, and rock back and forth 10 times. Turn the chin to the other opposite shoulder and repeat rocking back and forth 10 times.
- ❖ Encourage them to keep toes, knees, and hands on the floor while rocking.
- ❖ Do not allow children to sit back on their heels, “rabbit fashion.”
- ❖ There should be no bending of the elbows. You can encourage them to keep their elbows straight by touching their elbows.
- ❖ If the child is having trouble and modifications are needed, contact your occupational therapist.

Targeted Motor Development:

- ❖ The asymmetrical tonic neck reflex (ATNR) is a primitive reflex. It is normal in infants up to 4 to 6 months in age. When the child turns their head, the muscle receptors in the neck stimulate straightening of the arm/leg on the side the face is turned to and bending in the arm/leg on the opposite side. Arms usually respond stronger than the legs.
- ❖ If this reflex does not fully integrate, the child’s movement will be partially controlled by the ATNR and interfere with their voluntary control.
- ❖ This can affect the child by not allowing arm movements separate from the head. If the child is attempting to copy from the board, his writing arm or stabilizing arm may flex or extend slightly creating inefficient, faulty, and adaptive movement patterns in order to complete task.

Oden, A. (2004). Ready bodies, learning minds: A key to academic success. Spring Branch, TX.

Giraffe

Materials Needed:

- ✓ Space for each child to be on the floor, while facing an object (wall or chair)

Instructions:

- ❖ Have students on hands and knees. Their toes should be on the floor, hands flat, and neck bent back looking forward at the chair or wall. They can be approximately 3 or 4 inches away from an object.
- ❖ It is fun for the child to pretend that they are the giraffe eating off the trees.
- ❖ Have them lean forward. Shoulders should move forward past the hands. The hip and knees will slightly extend (straighten), while the head moves forward.
- ❖ Ask them to hold their nose to the tree and hold it for a count of 10. Repeat that position one more time for another count of 10.
- ❖ Arms and feet should not move, as well as the hands need to remain on the floor
- ❖ If the child is having difficulties, contact your occupational therapist.

Targeted Motor Development:

- ❖ The Symmetrical Tonic Neck Reflex (STNR) is a reflex that helps the infant develop a crawling position. Similar to the ATNR, the STNR is affected by the position of the head and neck on the trunks and limbs.
- ❖ If the child looks up, his arms will extend (straighten) and legs and hips will flex (bend). If the child puts his/her chin down to chest, his/her arms will bend and legs will straighten.
- ❖ If the STNR remains in the school-aged child, posture and coordination of body will be difficult.

Oden, A. (2004). Ready bodies, learning minds: A key to academic success. Spring Branch, TX.

Superman

Materials Needed:

- ✓ Space for each child to be on the floor, with outstretched arms

Instructions:

- ❖ The child lies on stomach with arms next to ears (superman).
- ❖ It is fun for the child to pretend that they are superman.
- ❖ Have them lift up their arms and legs, keeping them straight, so that no part of their body is touching the floor other than the stomach. Their bodies will be in a slight curve.
- ❖ Ask them to hold the position as long as they can, up to 15 seconds. Repeat this 2 more times.
- ❖ Arms and feet should be straight and their bodies should not be rocking.
- ❖ If the child is having trouble and modifications are needed, contact your occupational therapist.

Targeted Motor Development:

- ❖ The Tonic Labyrinthine Reflex prone (TLR prone) is a primitive reflex that causes flexion (curling up like a ball), during an infant's first few months of life.
- ❖ If the TLR prone persists, children will have difficulties learning to move against gravity. This will contribute to poor posture and acquisition of motor skills.

Popcorn

Materials Needed:

- ✓ Space for each child to be on the floor, lying on his/her back

Instructions:

- ❖ The child lies on his/her back, with arms to the side of the body.
- ❖ It is fun for the child to pretend that they are popping popcorn.
- ❖ Have them bring their knees to chest, while wrapping arms around legs. Then lift head close to knees, so the nose is nearly touching the knees. Hold the position for 15 to 20 seconds. The children can “pop out” of the position, like popping popcorn. Repeat 2 more times.
- ❖ Do not allow the children to roll or move around.
- ❖ If the child is having trouble and modifications are needed, contact your occupational therapist.

Targeted Motor Development:

- ❖ The Tonic Labyrinthine Reflex supine (TLR supine) is a primitive reflex that causes extension (straightening) to dominate when the child lies on his/her back.
- ❖ If the child is placed on his/her back, the arms will go up over the head and straighten and his/her back will arch.
- ❖ When the TLR supine persists, children will have difficulties bringing hands to midline and coordinating bending and straightening of body.

Cross Crawls

Materials Needed:

- ✓ Space for each child to be standing, without touching other children

Instructions:

- ❖ Visually demonstrate alternating touching opposite knee to elbow.
- ❖ The children will continue alternating for 60 seconds.
- ❖ Rhythm and timing is important. A metronome set at approximately 50-60 beats per minute helps some children.
- ❖ Ask the child to stay in his/her spot. Dots or carpet squares can help.
- ❖ If the child is experiencing difficulties and modifications are needed, contact your occupational therapist.
- ❖ While completing the cross crawls, ask the children to read the alphabet strip backwards or a series of letters or numbers on the marker board or wall. This will incorporate reading.

Targeted Motor Development:

- ❖ Balance (Equilibrium)
- ❖ Crossing midline
- ❖ Activates the brain and body to work together
- ❖ Visual tracking (if reading is incorporated)

Dennison, P.E. & Dennison, G. (1997). *Brain gym handbook: The student guide to brain gym*. Ventura, CA: Edu-Kinesthetics, Inc.

Pass It!

Materials Needed:

- ✓ Space for each child to be on the floor
- ✓ Ball, scarves, or balloon

Instructions:

- ❖ Make partners
- ❖ Each set of partners lie on floor on their backs, with their feet touching their partner's feet.
- ❖ One child will have the balloon/ball/scarf. Instruct them to pass the ball to their partner by lifting upper body up and passing the ball to their partner. Continue passing the ball to each other 10 times. Have the children count aloud. Rest and repeat activity 2 more times.

Targeted Motor Development:

- ❖ Abdominal strengthening/core strengthening

Balloon Volleyball

Materials Needed:

- ✓ Space to form two lines, with children facing each other
- ✓ Balloon

Instructions:

- ❖ Each child will face his/her partner.
- ❖ Give each pair a balloon.
- ❖ Have the child turn their palms up to the ceiling and volley the balloon to their partner.
- ❖ Remind the children to keep their palms up when volleying the balloon.
- ❖ Variation: Have the children keep their hands above head while volleying back and forth.

Targeted Motor Development:

- ❖ Improves arm and wrist strength and endurance to help with writing
- ❖ Improves flexibility and coordination of upper and lower arms
- ❖ Eye-hand coordination

Crabwalk

Materials Needed:

- ✓ Space to allow children to move on hands and feet

Instructions:

- ❖ Each child will sit on the floor. Visual demonstration is helpful.
- ❖ The children will reach behind them with their arms and place palms down on the floor with fingers pointed in opposite direction as facing.
- ❖ Have the children lift his/her trunk and bottom off the floor.
- ❖ Tell the child to walk like a crab.
- ❖ You can make an obstacle course or have them crab walk to a sequence of numbers/letters on floor. This activity can be incorporated into the children's day, such as during transitioning from one area or activity to the next.

Targeted Motor Development:

- ❖ Improves upper body strength and endurance
- ❖ Improves coordination of upper and lower extremities
- ❖ Core strengthening
- ❖ Motor planning

Abraham, M.C. (2002). *Practical strategies and sensory motor activities for use in the classroom*. Grand Rapids, MI: School Specialty Publishing.

Wheelbarrow

Materials Needed:

- ✓ Space for children to move (gym, hallway)

Instructions:

- ❖ Put children into pairs.
- ❖ Give a visual demonstration first.
- ❖ Have one child be the wheelbarrow and the other child lift the wheelbarrow.
- ❖ The child that is the wheelbarrow will place hands on the floor. The other child will lift the wheelbarrow's feet, slowly, allowing the wheelbarrow to manage a portion of the weight on his hands. While the lifter, manages a portion of the wheelbarrow's lower body weight.
- ❖ Tell the wheelbarrow to walk with his/her hands. The wheelbarrow controls the speed, not the lifter. The wheelbarrow's body should be straight, with no sagging in the torso/trunk/back.
- ❖ This activity can be incorporated into transitioning from one area or activity to the next.

Targeted Motor Development:

- ❖ Improves upper body strength and endurance
- ❖ Improves coordination of upper body
- ❖ Core strengthening
- ❖ Motor planning

Henry, D.A. (2001). *Tool chest: For teachers, parents & students*. Phoenix, AZ: Henry OT Services, Inc.

UNIT III:

FINE MOTOR ACTIVITIES

INTRODUCTION:

Fine motor skills are a requirement for success in the school environment. Researchers have found that children in elementary schools spend 30%-60% of their daily routine involved with fine motor skills. Many of the referrals a school-based occupational therapist will receive will be due to poor fine motor performance. Occupational therapists have the skills and knowledge to educate school personnel of the student's needs or accommodations for fine motor difficulties. Through education and intervention of fine motor skills, occupational therapists can increase student's performance with writing, cutting, and coloring. Motoric separation of hand, translation, hand arches, bimanual hand use, bilateral integration, tripod grasp, pincer grasp, intrinsic muscles of the hand, strengthening, and eye-hand skills have been found to encourage development of fine motor skills. The activities used in this resource target development of these skills. Please refer to Appendix A for definitions of terminology.

TIPS:

Encourage the teachers to watch students for difficulties or incorrect ways of completing the tasks. It is very important when developing fine motor skills to complete the activities in the way that was intended or the children will not develop the refined movements needed and will use maladaptive patterns that are less efficient. Please stress the importance of ***contacting the occupational therapy staff, if children are having difficulties completing or participating in an activity.***

The authors have found it successful to use the fine motor activities as part of a center or station in the classroom. The teachers rotate the supplies/bins throughout the school year, which limits cost. From experience, it has worked best to put these bins together for the teachers. It is helpful to copy and laminate the instructions page and place within the bin. One author used education and parent teacher organization (PTO) grants to fund the fine motor activity bins.

Racetrack

Materials Needed:

- ✓ Long roll of paper (approximately a foot and half for each child)-Could also use marker board or chalkboard if space allows
- ✓ Washable markers or chalk

Preparation:

1. Hang paper on wall, approximately 4 feet from floor.
2. Draw an infinity loop, horizontal figure 8, for each child.
3. Size of infinity loop is approximately 16-18" wide.

Instructions:

- ❖ The child uses a marker or his/her finger to race on the track. Begin by having the child start in the center of the horizontal figure 8 and proceed up and to the left (the direction the letter "c" is formed/counter clockwise stroke). The child continues across the center up and to the right (clockwise stroke).
- ❖ Arm movement should be smooth, slow, and on the line as the child visually tracks. Do not allow them to move side to side when racing.
- ❖ Have the child go around the entire track 8 times with one hand, then switch to the opposite hand for another 8 laps, and then using both hands complete another 8.

Targeted Fine Motor Development:

- ❖ Promotes shoulder stability/strengthening by working on a vertical surface
- ❖ Eye-hand coordination
- ❖ Encourages a tripod grasp with the vertical position of paper
- ❖ Promotes correct letter formation
- ❖ Involves crossing the midline for efficient motor patterns for drawing

Dennison, P.E. & Dennison, G. (1997). *Brain gym handbook: The student guide to brain gym*. Ventura, CA: Edu-Kinesthetics, Inc.

High Rollers

Materials Needed:

- ✓ 8 dice for each child
- ✓ 5 erasers for each child (the erasers that are pink and go on the end of pencils)
- ✓ Small plastic bin to hold the dice and erasers

Preparation:

1. Place dice and erasers in the small plastic bin to keep organized.
2. Label bin.

Instructions:

- ❖ In each hand, have the child hold the pointed end of the erasures using the thumb, index, and middle fingers.
- ❖ Using the erasures, pick up a die by placing the die between the flat ends of the erasures.
- ❖ Stack the dice until they fall.
- ❖ Children can continue to stack until they get all 8 or they can mark tallies down on a piece of paper to see how many they stack each time.

Targeted Fine Motor Development:

- ❖ Bilateral integration
- ❖ Shoulder stability, wrist control
- ❖ Eye hand coordination
- ❖ Tripod grasp (promotes efficient grasp for writing/drawing/coloring)

Squirrel/Desquirrel Activity

Materials Needed:

- ✓ Same materials as Dice and Erasure Activity, could also use coins

Preparation:

1. Use the same bin as the Dice and Erasure Bin.

Instructions:

- ❖ In dominant hand, have child stabilize forearm with palm down on the table.
- ❖ One at a time, pick up small objects (can be the erasures, dice, or coins) with thumb, index, and middle fingers. Have them pick up approximately 5 of the same objects.
- ❖ Move the object toward the palm storing them with the ring and little fingers. This is squirreling objects.
- ❖ Release the objects one by one using a movement toward the thumb and index/middle fingers to place one object at a time, on the table. This is desquirreling objects.
- ❖ Children can place coins face up or each die to a certain number before placing it on the table.

Targeted Fine Motor Development:

- ❖ Translation skills (needed for manipulating small objects)
- ❖ Pronation/supination (allows you to pour, manipulate, and inspect objects)
- ❖ Motoric separation of hand skills (needed for cutting, writing, turning pages)
- ❖ Hand arches (provides stability in hand so fingers can complete the refined movement)

Benbow, M. (1999). *Fine motor development: Activities to develop hand skills in young children*. Columbus, OH: Zaner-Bloser, Inc.

Hungry Ball

Materials Needed:

- ✓ Tennis balls (# is dependent on how many children are in a station)
- ✓ Permanent Marker
- ✓ Utility knife
- ✓ Plastic bin to hold balls and beans
- ✓ Beans
- ✓ Plastic container to hold beans

Preparation:

1. Use utility knife to cut a “mouth” into the tennis ball, approximately 1 ½” in length. You may cut more or less, depending on the strength of the child.
2. Place eyes above the mouth with permanent marker.
3. Mark an “X” for the ears (this is where you want the children to have their thumb and index to pinch open the mouth).

Instructions:

- ❖ Students pick up beans and feed the tennis ball by squeezing the ears (marked by an X) with thumb on one X and index on other X.
- ❖ Students hold several beans in their dominant hand and bring the beans to their fingertips without assistance from their other hand as they feed the ball.

Targeted Fine Motor Development:

- ❖ Motoric separation of hand skills (needed for cutting and writing)
- ❖ Bimanual hand use (using both hands in a lead-assist fashion)
- ❖ Translation (needed for manipulating small objects)
- ❖ Hand strengthening (foundation for hand skills and object manipulation)

Thompson, S. (2003). *The write stuff: Developing fine motor skills & handwriting in students*. Flower Mound, TX: HL Seminars.

Zoo Keeper

Materials Needed:

- ✓ Tongs (# is dependent on how many children are in a station)
- ✓ Zoo animals (small erasures or plastic animals)
- ✓ Plastic bin to hold tongs and animals
- ✓ Plastic containers, zoo cage, to hold animals (# is dependent on how many children are in a station)

Preparation:

1. Cut a small hole in top of container. Make it only slightly larger than the animals.

Instructions:

- ❖ Tongs should be positioned in the hands so that the child uses thumb pad to oppose finger pads to squeeze the tongs.
- ❖ The tongs should not touch the palm of the hand.
- ❖ It is best to do this activity on the floor to promote trunk stability and wrist extension.
- ❖ You can have the children sort the animals into a cage (container)

Targeted Fine Motor Development:

- ❖ Motoric separation of hand skills (needed for cutting, turning pages, and writing)
- ❖ Intrinsic hand muscle development (hand strengthening)
- ❖ Thumb opposition (this aids in developing use of thumb with objects)
- ❖ Motor sequencing
- ❖ Eye-hand coordination
- ❖ Promotes joint stability and strengthening by laying on the floor

Thompson, S. (2003). *The write stuff: Developing fine motor skills & handwriting in students*. Flower Mound, TX: HL Seminars.

Nuts N' Bolts

Materials Needed:

- ✓ Plastic nuts and bolts with matching shapes/colors (Oriental Trading)
- ✓ Plastic bin to hold the nuts and bolts

Preparation:

1. Place nuts and bolts into plastic bin

Instructions:

- ❖ The child matches up shape and color of nuts and bolts and screws them together.

Targeted Fine Motor Development:

- ❖ Manipulating small parts of an object
- ❖ Bimanual hand use (using both hands in a lead-assist relationship)
- ❖ Distal finger control (using the ends of the fingers to manipulate an object)
- ❖ Pronation/Supination (Allows a person to rotate hands palm up or palm down to inspect and manipulate an object)
- ❖ Proximal stability (joint stability and muscle stability needed to do fine motor manipulation)
- ❖ Simple rotation (needed to open jar lids)

Oriental Trading Website: <http://www.orientaltrading.com/>

Thompson, S. (2003). *The write stuff: Developing fine motor skills & handwriting in students*. Flower Mound, TX: HL Seminars.

Pegboard Bin

Materials Needed:

- ✓ Pegboard (1 for each child)
- ✓ Pegs
- ✓ Designs to copy
- ✓ Plastic bin to hold the pegboards and pegs

Preparation:

1. Place pegboard and pegs into bin

Instructions:

- ❖ Place the pegboard on the floor. It is preferable to have the student lie on stomach and prop themselves up on their elbows.
- ❖ Have the children copy the designs on the card or make their own. They can do the first letter in their name or the letter of the week.
- ❖ Try having the child hold extra pegs in dominant hand as they place pegs in the holes. Do not allow them to use his/her other hand to assist bringing pegs from the palm to the fingertips.
- ❖ After the pattern is complete, children enjoy flipping it over and using their thumbs to punch the pegs out.

Targeted Fine Motor Development:

- ❖ Motoric separation of hand skills (needed for cutting)
- ❖ Hand arch development/translation skills (moving small objects from palm to thumb and fingers)
- ❖ Tripod grasp (three-finger grasp is the most efficient writing grasp)
- ❖ Wrist extension (promotes joint stability for writing, coloring)
- ❖ Eye-hand coordination and visual-perception
- ❖ Promotes upper body strengthening

Thompson, S. (2003). *The write stuff: Developing fine motor skills & handwriting in students*. Flower Mound, TX: HL Seminars.

Tangle

Materials Needed:

- ✓ Tangles, small size (1 per child) or can use macaroni noodles
- ✓ Small plastic containers with lids (yogurt containers work well), per child
- ✓ Plastic bin to hold the tangles and small plastic containers
- ✓ Pencil

Preparation:

1. Poke a hole with the pencil into the center of the plastic lid.
2. Make sure the tangles fit through the hold made by the pencil.
3. Place tangles and containers into plastic bin for easy storage.

Instructions:

- ❖ It is preferable to have the students lying on the floor, on stomach.
- ❖ The child takes the tangle pieces and inserts them, one at a time, through the hole in the top of the container.
- ❖ The child can also put the tangle pieces together and take them apart.

Targeted Fine Motor Development:

- ❖ Tripod grasp/pincer control (promotes strength and skill to use thumb and first two fingers with small objects)
- ❖ Intrinsic hand strengthening (promotes strengthening in the small muscles of the hand)
- ❖ Motoric separation of hand skills (helps with cutting and shaping the hand to adjust to a variety of size/shape objects)
- ❖ Bimanual hand use
- ❖ Bilateral integration (using both sides of the body at the same time)

Adapted from Thompson, S. (2003). *The write stuff: Developing fine motor skills & handwriting in students*. Flower Mound, TX: HL Seminars.

Clothespins

Materials Needed:

- ✓ Wood clothespins (26 per child)
- ✓ Permanent Marker (preferably black)
- ✓ Card stock for each child (5" by 7" piece)
- ✓ Ziploc bags (one for each child)
- ✓ Tape
- ✓ Plastic bin to hold the clothespins and alphabet cards

Preparation:

1. On the clothespins, write on each side of the clothespin's end that attaches to the paper, an upper case letter and the correlating lower case letter on the other side. Do all 26 letters of the alphabet.
2. On the edge of the card stock, write all upper case letters around only three edges. Approximately 10 letters will fit on the long sides and 6 on the shorter side. On the opposite side of the card stock, write all lower case letters around three edges. Laminate, if possible.
3. Place 1 set of clothespins and an alphabet card into a large Ziploc.
4. Store supplies in a plastic bin.

Instructions:

- ❖ Tape the card on edge of marker board, table, or desk, at or above eye level.
- ❖ Have the child sit on the floor.
- ❖ Have the child grasp the clothespin with his/her index and middle fingers and their thumb.
- ❖ Child pinches open clothespin and matches it to correct letter on the alphabet card.

Clothespins, continued

Targeted Fine Motor Development:

- ❖ Motoric separation of hand skills and hand arches (helps form the hand to adjust to unique shapes and tasks, helps with cutting skills)
- ❖ Tripod grasp (most efficient writing/coloring grasp)
- ❖ Intrinsic muscle development (strengthens small muscles in the hand)
- ❖ Thumb opposition (this aids in developing use of thumb with objects)
- ❖ Visual perception (Matching)
- ❖ Bimanual hand use (using hands in a lead-assist)
- ❖ Forearm supination/pronation (turning palm up and down)

Cutting Bin

Materials Needed:

- ✓ Scissors (1 for each child)
- ✓ Variety of plastic straws
- ✓ Playdough
- ✓ Index cards
- ✓ Card stock strips (varying from 1" in width to 3")
- ✓ Card stock paper (half and full sheets)
- ✓ Regular paper (half and full sheets)
- ✓ Any other media you can think of to engage child in cutting (used manila folders, magazines, coupons, ad inserts, old playing cards)
- ✓ Plastic bin to hold cutting supplies

Preparation:

1. Place cutting supplies and scissors into plastic bin and keep stocked.

Instructions:

- ❖ The child begins by snipping and then progresses to cutting. The thicker and smaller the media, the easier it is typically. As the child gains confidence, use the larger and thinner media.

Targeted Fine Motor Development:

- ❖ Eye-hand coordination
- ❖ Bimanual hand use
- ❖ Bilateral integration/sequencing (using both sides of upper body together to complete a task)
- ❖ Motoric separation skills of hand skills (helps shape the hand for turning pages of a book and promotes cutting skills)

Benbow, M. (1999). *Fine motor development: Activities to develop hand skills in young children*. Columbus, OH: Zaner-Bloser, Inc.

Lacing Cards

Materials Needed:

- ✓ Card stock, file folders, or any kind of thick and stiff paper to make home-made lacing cards (1 for each child)
- ✓ Paper hole puncher
- ✓ Laces
- ✓ Small plastic bin to hold the lacing cards and punched

Preparation:

1. Punch holes into a piece of card stock or part of a file folder, approximately 5" by 7".
2. You can make a letter, animal, zigzag, straight, circular, or shoe design with the holes punched. Be creative.
3. Secure one side of the lace into a hole by tying a knot.

Instructions:

- ❖ The child holds the end of the lace with his/her dominant hand using thumb, index, and middle finger.
- ❖ Child places the lace through the holes.
- ❖ Cue child to hold paper steady with one hand.
- ❖ Kindergartners may be able to use the puncher to create their own lacing design.

Targeted Fine Motor Development:

- ❖ Eye-hand coordination
- ❖ Bimanual hand use
- ❖ Bilateral integration/sequencing
- ❖ Pronation/supination (helps to manipulate and inspect objects)
- ❖ Promotes tripod grasp (efficient writing/coloring grasp)

UNIT IV:

SOCIAL SKILLS ACTIVITIES

INTRODUCTION:

Social participation is an area of occupation for children. Movement has a direct impact on the social and emotional development of children. Recent research has shown that children that do not engage in organized and recreational social and physical activities are at higher risk for loneliness. The following activities were developed to promote social participation through physical activity by including social and coping skills. Please refer to Appendix A for definition of social and coping skills.

TIPS:

The activities listed in this unit use readily available materials. The beach balls, flags, and Hula Hoops are typical equipment that is available for use from the gym teacher. Recommend implementation of these activities in the child's recess or play area to promote generalization of socialization skills in the naturally occurring context.

It is important to instruct the teachers to **contact the building occupational therapist or certified occupational therapy assistant, if a student is having difficulties participating in an activity.**

Hula Hoop Hustle

Materials Needed:

- ✓ 1 Hula Hoop per group

Preparation:

3. Form groups of 3-6 children.
4. Each group will form a circle, holding hands. Place the Hula Hoop on one student's arm (they will need to let go of their neighbors hand briefly, so the Hula Hoop can be placed into the human circle).

Instructions:

- ❖ Instruct the children not let go of their neighbors hand or they will need to restart the Hula Hoop at the beginning.
- ❖ They will need to wiggle the Hula Hoop over their whole body, all the way around the whole circle, without breaking hold of hands.
- ❖ The first team to have the Hula Hoop pass through the entire group, without breaking hold of each other, wins.

Targeted Social & Sensory Motor Development:

- ❖ Social skills (working together as a team)
- ❖ Coping skills
- ❖ Spatial Awareness
- ❖ Motor planning (moving Hula Hoop over body)
- ❖ Tactile input (holding hands)

Splish Splash

Materials Needed:

- ✓ 2 ice cream pails per group
- ✓ 3 oz. cup for each student
- ✓ Stop watch
- ✓ Outdoor space would be optimal due to use of water

Preparation:

1. Have each group form a straight line, with one pail full of water at beginning of the line and an empty pail at the end of the line.
2. Give each child an empty cup.

Instructions:

- ❖ Start each group at the same time.
- ❖ The first in line will scoop their cup in the pail of water and pour it into the next student's cup. The last student in line pours their cup into the empty bucket. The first in line begins scooping once the last person has emptied their cup into the bucket.
- ❖ Time the children for approximately 3-5 minutes.
- ❖ See who has the most water at the end of the time.

Targeted Development:

- ❖ Social skills
- ❖ Coping skills
- ❖ Pronation/supination (pouring cup)
- ❖ Coordination and dexterity (manipulating cup and body movements)
- ❖ Motor planning and attention

Adapted from Wooden Spoon Relay. Retrieved March 10, 2008,
http://familyfun.go.com/games/indoor-outdoor-games/games/famfgam_spoonrelay/

Beach Ball Catch

Materials Needed:

- ✓ 1 Beach ball per group

Preparation:

1. Form groups of 3-6 children.
2. Line the children up in a “zigzag” pattern, approximately 3-5 feet apart.

Instructions:

- ❖ The first child will throw the beach ball to the next child in line.
- ❖ The ball will go back and forth down the line, starting with the child at the beginning of the line and going in order down the line, until the ball reaches the last person.
- ❖ If the ball drops/falls, start the ball at the beginning.
- ❖ The first group to go back and forth two or three times wins.

Targeted Development:

- ❖ Attention
- ❖ Social skills
- ❖ Coping skills
- ❖ Position in space
- ❖ Eye-hand coordination (catching and throwing)
- ❖ Motor planning and sequencing

Adapted from: Beach Ball Boogie. Retrieved on March 10, 2008, from <http://portal.peoriaud.k12.az.us/C3/student%20Activities/Web%20Part%20Pages/BeachBallBoogie.aspx>

Beach Ball Boogie

Materials Needed:

- ✓ 1 Beach ball per group (small beach ball)

Preparation:

1. Form groups of 4-6 children.
2. Line the children, one behind the other.

Instructions:

- ❖ The first child will put the beach ball over their head to the next in line who will pass it between their legs to the next in line. The children will continue this movement pattern of over, between, over, between...until the last one gets it. That child will run up to the front and start the pattern again.
- ❖ Continue until the child that started at the beginning of the line, ends up first in line.

Targeted Development:

- ❖ Attention
- ❖ Social skills
- ❖ Coping skills
- ❖ Position in space
- ❖ Spatial relations and spatial concepts
- ❖ Eye-hand coordination
- ❖ Motor planning and sequencing

Adapted from: Beach Ball Boogie. Retrieved on March 10, 2008, from <http://portal.peoriaud.k12.az.us/C3/student%20Activities/Web%20Part%20Pages/BeachBallBoogie.aspx>

Flag Hunt

Materials Needed:

- ✓ Rolls of colored flagging or barricade tape (1 color per child in group)

Preparation:

1. Form 2-4 groups by dividing class (at least 4 kids per group).
2. Tie colored flags in separate areas on the playground, just slightly out of the child's reach. You can place 2 flags of same color in each location.

Instructions:

- ❖ Send one group at a time.
- ❖ Instruct the group that each student is to collect one flag. All members of the group must have different colored flags. The group must decide who will collect what color.
- ❖ It is best to repeat this activity over a period of time (daily or weekly). The children should progress with group problem-solving skills and physical confidence on the playground equipment.
- ❖ If the children are having difficulties untying the flags due to physical skills or placement (on slide or on monkey bars), use adhesive loop and hook Velcro on flags and playground equipment.
- ❖ If there is a child having difficulties participating in this activity, please call your building occupational therapist for accommodations.

Targeted Development:

- ❖ Promotes play skills on the playground
- ❖ Social skills (participating in an activity with other children)
- ❖ Coping skills (sharing, agreeing, following, leading, and tolerating others)
- ❖ Spatial relations
- ❖ Motor planning and sequencing (getting the flag and untying it)
- ❖ Bilateral motor coordination, equilibrium, and proprioception

Castaneda, C., Deitz, J., Skog, K., & Virnig, E. (2006). Promoting participation and success on the playground. *OT Practice*, 11(21), 11-16.

Animal Instincts

Instructions:

- ❖ Choose a child to lead the group in pretend play.
- ❖ Each child will choose an animal to imitate.
- ❖ The other children will follow the leaders play. It may be fun to have them guess what animal they are pretending to be.
- ❖ If the child is having trouble coming up with an animal, the teacher or a student may pick the animal for the leader. The leader can come up with an action of the animal.
- ❖ It is helpful to do a teacher demonstration, so the children get the hang of the game.
- ❖ Encourage large body movement.

Targeted Development:

- ❖ Attention
- ❖ Coping skills
- ❖ Motor planning

Adapted from Castaneda, C., Deitz, J., Skog, K., & Virnig, E. (2006). Promoting participation and success on the playground. *OT Practice*, 11(21), 11-16.

UNIT V:

SELF-HELP STRATEGIES

INTRODUCTION:

Self-help skills are essential in teaching children independence in the school, home, and community environments. At school, children need to be able to feed, dress, and toilet themselves to ensure health and well-being in their physical and social environment. Self-help skills were addressed last since many self-help skills are dependent upon a combination of fine motor, gross motor, and sensory motor skills. Included in the unit of self-help strategies are two commonly used methods of shoe tying. The intention of the handouts for shoe tying is to provide a visual for children, teachers, and families. It by no means indicates that these are the only two ways to teach children to tie their shoes.

TIPS:

The strategies in this unit address shoe tying and using eating utensils. Many kindergarten teachers introduce shoe tying around Christmas break. Some of the teachers give the handouts to the students before break as homework. There are numerous ways to tie shoes. Many times parents have their own way of teaching shoe tying. Parents should be consulted prior to introducing this through a brief letter that could be returned with the parent's preferences and wishes for shoe tying. It is a good idea to make a contract with the parent(s) so that everyone is on the same page, when teaching shoe tying.

SHOE TYING

Regular Method

Intended audience: Parent, student, and teacher

Learning objective: Shoe tying



Make an "X"



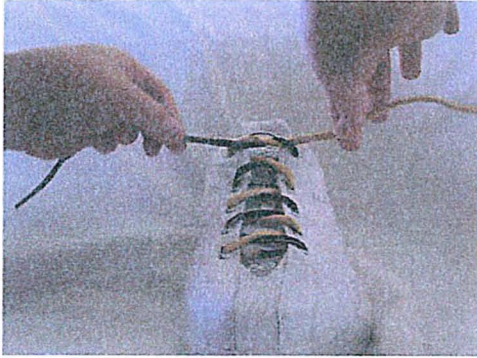
Use one hand to pinch "X" with thumb and index finger

Take lace **closest** to you and take it in **front** of other lace and **under** the "X"
OR

Take lace **farthest** from you and take it **behind** other lace and **under** the "X"



Grab each lace



Pull laces tight!



Make a "bunny ear" or "loop" by folding over one lace

Grasp at the bottom of the "loop" or "ear"

Be sure to make the "loop" or "ear" no taller than your thumb



With the other hand, take the other lace (not formed into a "loop/ear") and wrap it around the base of the "loop/ear"



Push the lace that is wrapped around the "loop/ear" into the hole by using finger

This will form a loop by pushing the lace through the hole with finger

Do not use the end of the lace



You will now have two loops



Pull each loop tightly



CONGRATULATIONS!

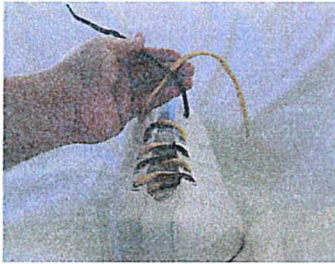
Laces pictured from: Wilk, K. (2001). *Shoe-tying made simple*. Oxford, NC: The School of Graphic Arts.

SHOE TYING

Adapted Method

Intended audience: Parent, student, and teacher

Learning objective: Shoe tying



Make an "X"



With one hand pinch "X" with thumb and index

Take lace **closest** to you and take it in **front** of other lace and **under** the "X" OR

Take lace **farthest** from you and take it **behind** other lace and **under** the "X"



Pull laces tight



Make an "X"



With one hand pinch "X" with thumb and index

Take lace **closest** to you and take it in **front** of other lace and **under** the "X" OR

Take lace **farthest** from you and take it **behind** other lace and **under** the "X"



Pull laces until there is only enough room to fit your finger in between the first and second "X"



With one hand pinch with index and thumb over the top "X"

With other hand, take the first lace and put it between the space of the first and second "X"

This will form the loop

Make loop into the size of your thumb



Take the other lace end and put it between the space of the first and second "X"

This will form the second loop

Make loop the size of your thumb



Pull each loop tightly



CONGRATULATIONS!

Laces pictured from: Wilk, K. (2001). *Shoe-tying made simple*. Oxford, NC: The School of Graphic Arts.

Using a Spoon

Materials:

- ✓ Spoon (1 per child)
- ✓ Dry beans or rice in a large plastic container
- ✓ Bowl (1 per child)

Instructions:

- ❖ Complete a visual demonstration first.
- ❖ Have the child pick up the spoon in his/her favorite hand.
- ❖ They should hold it as they hold their pencil/crayon: The hand is palm and thumbs up with the utensil resting on the index and middle finger. The thumb is on top forming a triangle with the three fingers. Curl the ring and little fingers up.
- ❖ Have the child move the arm to scoop up the beans/rice and place into their bowl. Continue scooping until the bowl is full. You can incorporate math skills, such as counting the scoops or filling container half full.
- ❖ Remind them to continue with correct grasp.
- ❖ If the child is having difficulties with the task, contact the building occupational therapist for modifications or adaptations.

Targeted skill:

- ❖ To help the student learn to hold the spoon correctly
- ❖ The same grasp to hold onto the spoon is the same grasp used to hold writing tools.
- ❖ Great way to reinforce correct grasp patterns for efficient use of eating utensils and writing tools

Adapted from Berry, J. (1999). *Fine motor skills in the classroom: Screening and remediation*. Framingham, MA: Therapro Inc.

Cutting with a Fork

Materials:

- ✓ Fork (1 per child)
- ✓ Microwave playdough (see Appendix B) or use store bought Playdough

Instructions:

- ❖ Complete a visual demonstration first.
- ❖ Have the child pick up the fork in his/her favorite hand.
- ❖ To cut with a fork, have them start with the fork angled on its side. Have the child face the palm down and place the fork so the index finger is straight along the side of the fork. The thumb and middle finger pinch together to hold the fork.
- ❖ The index finger presses the fork down through the playdough to cut.
- ❖ Remind them to continue with correct grasp while cutting the playdough.
- ❖ If the child is having difficulties with the task, contact the building occupational therapist for modifications or adaptations.

Targeted skill:

- ❖ To help the student learn to cut with a fork
- ❖ Great way to reinforce correct grasp patterns for efficient use of eating utensils

Adapted from Berry, J. (1999). *Fine motor skills in the classroom: Screening and remediation*. Framingham, MA: Therapro Inc.

Cutting with a Fork and Knife

Materials:

- ✓ Fork (1 per child)
- ✓ Knife (1 per child)-due to school safety use a plastic or butter knife
- ✓ Microwave playdough (see Appendix B) or use store bought Playdough

Instructions:

- ❖ Complete a visual demonstration first.
- ❖ Have the child pick up the knife in his/her favorite hand, with the palm and thumb facing down. The index finger should be straight along the side of the knife handle with the cutting side of the knife pointing down.
- ❖ The helper hand holds the fork with the thumb and palm facing down. The pointer of the helping hand is straight along the back of the fork, with the fork tip pointing down. The thumb and middle finger pinch together to hold the fork.
- ❖ To cut, instruct the children that the fork holds the playdough in place, while the knife moves back and forth to cut the playdough.
- ❖ Remind them to continue with correct grasp while cutting the playdough.
- ❖ If the child is having difficulties with the task, contact the building occupational therapist for modifications or adaptations.

Targeted skill:

- ❖ To help the student learn to cut with a fork and knife
- ❖ Great way to reinforce correct grasp patterns for efficient use of eating utensils

Adapted from Berry, J. (1999). *Fine motor skills in the classroom: Screening and remediation*. Framingham, MA: Therapro Inc.

APPENDICES

Appendix A
Glossary of Terminology

Glossary of Terminology

Abdominal/core strength: The ability to demonstrate muscle contraction and endurance in the abdomen.

Bilateral integration: The neurological process of integrating both sides of the body.

Bilateral motor coordination: An individual's ability to coordinate both sides of the body in a smooth, simultaneous, and coordinated manner.

Bimanual hand use: Using both hands in a lead-assist fashion.

Coping skills: Involves the skills of sharing or choosing a new activity when the desired one is not available, agreeing to play by the rules, accepting accidental motion by others, expressing frustrations, following others, tolerating physical play with others, and accepting boundaries placed by others.

Dynamic balance: The ability to maintain balance while the body or surface is moving.

Equilibrium: The sense of maintaining balance of the body.

Eye-hand coordination: The ability to use the eyes and hands to complete motor tasks.

Fine motor: The small movements of the hand.

Gross motor: The large movements of the body.

Hand arches: The muscles and bones that allow the hand to cup or flatten.

Intrinsic muscles: Small muscles of the hand.

Motor planning: The ability to complete a sequence of unfamiliar motor actions.

Motoric separation of hand skills: The ability to separate functions of the hand where the ring and little fingers usually stabilize the object, while the middle and index fingers manipulate the object.

Oculomotor skills: The movements of the muscles in the eyes.

Pincer grasp: Using the thumb and the index finger to pick up and hold objects.

Proprioception: The information that an individual receives from their muscles, tendons, and joints to notify the body where it is in space.

Pronation: The act of turning the palm downward.

Sensory integration: The ability to organize, discriminate, coordinate, and modulate sensory input in daily life.

Sensory-motor: The process of the brain receiving sensory input and producing a motor response.

Social skills: Involves the skills of turn taking, asking for help, helping others, participating in group problem solving and pretend play, allowing newcomers to join, switching activities at other's suggestion, and celebrating accomplishments with others.

Spatial relations: The relationship of the body to itself and to its surroundings.

Static balance: The ability to maintain balance when the body is not moving.

Supination: The act of turning the palm upward.

Tactile: Relates to the information an individual receives from their sense of touch on the skin.

Translation: Moving objects between the palm and the fingertips.

Tripod grasp: A mature grasp in which the pencil is placed against the side of the middle finger and supported by the pads of the index finger and thumb.

Vestibular: Informs the body to the position of the head in relation to gravity and to whether the body is moving or standing still.

Visual: The engagement of the eyes in what is seen.

Visual perception: Involves recognition, discrimination, and processing of sensory integration through the eyes and the central nervous system.

Definitions have been adapted from the works of Abraham (2002), Benbow (1999), Castaneda, C., Deitz, J., Skog, K., & Virnig, E. (2006), Kranowitz (2003), and Thompson (2003).

Appendix B
Microwave Playdough

Microwave Playdough Recipe

2 cups flour

1 cup salt

2 tablespoons cooking oil

4 teaspoons cream of tartar

Mix in microwavable bowl. Microwave on high 3-4 minutes, stirring after each minute, until a ball forms. Let it cool.

Store in plastic bags to keep soft.

Appendix C

Resources

RESOURCES

Oriental Trading Website: <http://www.orientaltrading.com>

Young Living Oil Website: <http://www.younglivingoils.com>

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CHAPTER V

SUMMARY

Based on the literature reviewed in Chapter II, school-based occupational therapy practice continues to shift according to federal mandates, research, and theoretical perspectives in human occupation. Occupational therapy is a related service of the special education program under The Individuals with Disabilities Education Improvement Act of 2004 (IDEIA 2004, Public Law 108-446). No Child Left Behind Act of 2001 (NCLB 2001; Public Law 107-110) and IDEIA together require that education programs be provided in the natural or least restrictive environment (LRE). Current research indicates that providing children with the opportunity to practice skills in the natural context increases generalization and learning of skills and improves communication between the stakeholders (Dreiling and Bundy, 2003; Ideishi, et al., 2006; Richardson, 2002; Shasby & Schneck, 2005). The *Occupational Therapy Practice Framework: Domain and Process* offers guidance for school-based practitioners by identifying education, activities of daily living skills, play, and social participation as key performance areas in occupation (AOTA, 2002). This framework helps practicing therapists to focus assessment and intervention on supporting participation in life. Human participation in meaningful activities leads to self-fulfillment and satisfaction, which is important for psychological, emotional, and skill development (Law, 2002).

The purpose of the scholarly project was to develop a guide for new and experienced therapists to promote collaboration between occupational therapist and school personnel. The guide is designed to address educationally relevant pre-kindergarten and kindergarten occupations and foundational skills through activities that can be provided in an inclusive school setting. The intention of this project is to promote occupational therapists to use a more inclusive, population-based service delivery model in the school setting through collaboration with and coaching of educational personnel. The activities suggested in the guide include sensory motor, gross motor, fine motor, self-care, and social skills. These skills were chosen because of their developmental characteristics to promote performance of the higher-level educational tasks such as reading, writing, and socializing with peers. Practitioners and teachers are encouraged to integrate the guide's units and targeted developmental skills into the naturally occurring student's schedule and create new ideas to further the educational success of the targeted students.

Implementation of the guide should be done in phases. It is recommended that occupational therapists gain the approval of administration and teachers to implement a population-based, inclusive model of occupational therapy. A workshop or training session is recommended to gain support for the ideas and for proper implementation of the activities. Administrators, teachers, and practicing therapists need to understand the benefits of intervention for students through collaboration and monitoring versus the traditional pull out model. Maintaining communication with teachers and educational personnel is vital for accomplishing population-based, inclusive occupational therapy practice.

Best practice for school-based occupational therapists calls for promoting student participation and access to education in the natural context and encourages collaboration with teachers to facilitate progress for students. By providing services in the student's natural context, occupational therapists have increased opportunities to collaborate with teachers and parents; this collaboration increases school personnel's understanding of an occupational therapist's full potential in the school system and will help all children and not just students identified with a disability. Occupational therapy scholars, Swinth and Hanft, (2002) suggest using a service delivery model that is flexible by combining direct, "hands-on" intervention integrated within school activities with consultation and coaching for educational personnel. The resource guide is intended to encourage collaboration and help guide practitioners to integrate foundational skills needed for success with routine school tasks such as cutting, handwriting, tying shoes, interacting with peers, and playing on the playground.

A limitation of the guide is that the authors have not used the guide in an educational setting, but some activities and units have been integrated into classrooms. It is also a limitation that at this point in time, there is no documentation as to the effectiveness of the use of the guide for occupational therapy intervention in the natural environment.

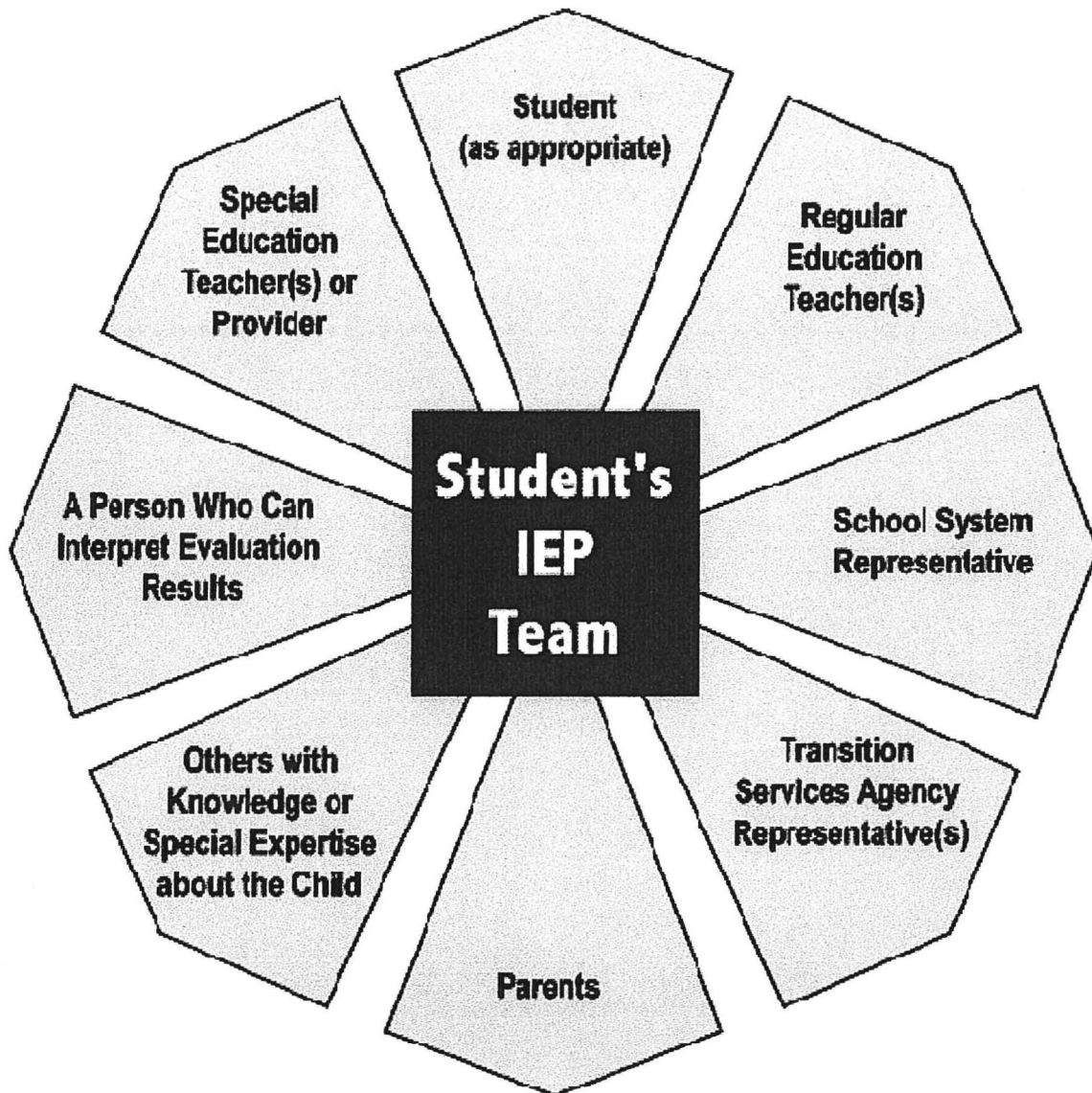
Recommendations for marketing this product may utilize a small marketing plan, implementing the program in a selected school district and future research for validity and reliability. The effectiveness of this program can be measured through pre and post

testing of the student skill achievement based on the grade level expectations and state education guidelines. Research is needed to establish validity and reliability for the activities and for the order of developmental presentation of activities in the product. Evidence-based research is needed on the effectiveness of these activities on school performance and educational relevance. Based on the literature review findings, ongoing studies are needed to determine why school-based occupational therapists continue to primarily use a pullout model of service delivery. Research on and/or development on procedures for collaboration with educational personnel would be helpful for occupational therapists practicing in the school system.

APPENDICES

Appendix A

Composition of and IEP team



Küpper, L. (Ed.), (2000). A Guide to the Individualized Education Program, U. S. Department of Education. Retrieved January, 29, 2008 from <http://www.ed.gov/parents/needs/speced/iepguide/iepguide.pdf>

Appendix B

Referral Process

New York State Referral Process

Step 1: Initial Referral for Special Education Services

Students suspected of having a disability are referred to a multidisciplinary team called the Committee on Special Education or the Committee on Preschool Special Education.

Step 2: Individual Evaluation Process

The Committee arranges for an evaluation of the student's abilities and needs.

Step 3: Determining Eligibility for Special Education Services

Based on evaluation results, the Committee decides if the student is eligible to receive special education services and programs.

Step 4: Individualized Education Program (IEP)

If the child is eligible to receive special education services, the Committee develops and implements an appropriate IEP, based on evaluation results, to meet the needs of the student. Based on the IEP, the Committee must determine the student's placement, ensuring that services are provided in the least restrictive environment (LRE). Placement must be as close as possible to the student's home, and unless the student's IEP requires some other arrangement, the student must be educated in the school he or she would have attended if not disabled. For more information see least restrictive environment.

Step 5: Annual Review/Reevaluation

The IEP is reviewed and, if needed, modified or revised by the Committee at least once a year (annual review). The student has a reevaluation at least once every three years, to review the student's need for special education programs and services and to revise the IEP, as appropriate. A reevaluation may also occur when conditions warrant or when requested by a parent or teacher.

The process occurs sequentially with each step building on the previous one. In this way, comprehensive information about the student is obtained and considered. Timelines are in place so that delays are avoided. Parents are an integral part of this process, and your involvement is encouraged (The University of the State of New York, 2002, The Special Education Process).

Special Education in New York State for Children Ages 3–21: A Parent's Guide (2002) Retrieved online January 29, 2008 at <http://www.vesid.nysed.gov/specialed/publications/policy/parentguide.htm>

Appendix C
Special Education Process

Child Find and Identification

- A. Review records
- B. Conduct screening
- C. Conduct and document pre-referral activities
- D. Make referral for evaluation
- E. Provide PWN
- F. Provide PSN

SPECIAL EDUCATION PROCESS



1. Initial Evaluation and Determination of Eligibility

- A. Provide Meeting Notice, if a meeting is held
- B. Review existing data by MET/IEP team members

C1. If NO additional data needed	C2. If additional data needed
<ul style="list-style-type: none"> Determine eligibility Develop evaluation report Provide PWN* ; Obtain parental rights regarding initial evaluation 	<ul style="list-style-type: none"> Provide PWN Obtain parental consent Gather additional data Determine eligibility Develop evaluation report Provide PWN*
<ul style="list-style-type: none"> D. Provide parent evaluation report and eligibility determination 	

2. IEP Development

- A. Provide Meeting Notice
- B. Complete IEP
- C. Determine levels of service and LRE
- D. Provide PWN*, and copy of IEP

3. Initial Placement

- A. Obtain written parental consent
- B. Provide PWN*

* If one PWN is provided, it must address all actions proposed or

4. IEP Implementation in the Least Restrictive Environment

- A. Inform teachers of IEP responsibilities and provide IEP access
- B. Provide services
- C. Prepare progress reports

5. Review and Revision of IEP

- A. Provide Meeting Notice and Annual Procedural Safeguards Notice (PSN)
- B. Review/revise IEP
- C. Determine levels of service and LRE

6. Reevaluation and Determination of Eligibility

- A. Provide Meeting Notice as appropriate
- B. Document the Review Existing Data by MET/IEP team members

C1. If NO additional data needed	C2. If additional data needed
<ul style="list-style-type: none"> • Notify parents of the right to request additional data; (PSN) • Document parent agreement that no additional evaluation is needed. • Determine continued eligibility • Provide PWN* 	<ul style="list-style-type: none"> • Provide PWN • Obtain parental consent • Gather additional data • Determine continued eligibility • Develop reevaluation report • Provide PWN*

7. Review and Revision of IEP

OR

Dismiss from Special Education

- A. Provide reevaluation report and eligibility determination
- B. Provide PWN*

Special Education Process. (2005). Retrieved February 27, 2008 from www.ade.state.az.us/ess/resources/forms/SpecialEducationProcessFlowChart.doc

Appendix D

Piaget's Developmental Stages

Piaget's Developmental Stages

Stage	Characterized by
Sensori-motor (Birth-2 yrs)	Differentiates self from objects Recognises self as agent of action and begins to act intentionally: e.g. pulls a string to set mobile in motion or shakes a rattle to make a noise Achieves object permanence: realises that things continue to exist even when no longer present to the sense (pace Bishop Berkeley)
Pre-operational (2-7 years)	Learns to use language and to represent objects by images and words Thinking is still egocentric: has difficulty taking the viewpoint of others Classifies objects by a single feature: e.g. groups together all the red blocks regardless of shape or all the square blocks regardless of colour
Concrete operational (7-11 years)	Can think logically about objects and events Achieves conservation of number (age 6), mass (age 7), and weight (age 9) Classifies objects according to several features and can order them in series along a single dimension such as size.
Formal operational (11 years and up)	Can think logically about abstract propositions and test hypotheses systemtically Becomes concerned with the hypothetical, the future, and ideological problems

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