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Promoting Interdisciplinary Collaboration Across School Contexts: A Toolkit for Occupational Therapists

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Promoting Interdisciplinary Collaboration Across School Contexts: A Toolkit for Occupational
Therapists

by

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This Scholarly Project Paper, submitted by Sidney Luers and Shayna Shaffer, in partial fulfillment of the requirement for the Degree of Master 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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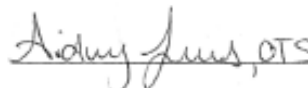
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ABSTRACT

The purpose of this project was to create a toolkit for occupational therapists who work within the elementary school settings to promote collaboration with teachers and other school personnel. In recent years there has been an increase in children who qualify for occupational therapy services within the school, which creates a need for collaboration with occupational therapists and teachers. Kennedy and Stewart (2011) found that while occupational therapists and teachers desire a collaborative relationship, there is little evidence supporting a way to achieve effective collaboration between the professions.

An extensive literature review was conducted in order to acquire information to create evidence-based strategies for occupational therapists to use in collaboration with teachers. The authors utilized research articles, textbooks, and resources available from the American Occupational Therapy Association and other reliable databases. The Ecology of Human Performance model (EHP) was the guiding model in the development of this toolkit, creating opportunities of intervention into various contexts within the elementary school setting.

Our toolkit, *Promoting Interdisciplinary Collaboration Across Contexts: A Toolkit for Occupational Therapists*, was organized by context with suggestions to occupational therapists for intervention strategies to use in collaboration with teachers. The toolkit begins with operational definitions followed by strategies for collaboration, educational materials for occupational therapists and teachers, EHP model application, possible assessments to use in the school and finally case studies to provide an example of how to use the toolkit.

CHAPTER I

INTRODUCTION

Due to an increase in number of children with special needs in the mainstream elementary classroom over recent years, there is a pressing need for a team of both educational and healthcare professionals to support these students and meet their needs within school contexts. According to the National Center for Education Statistics (NCES, n.d.), the percentage of students who are served under the Individuals with Disabilities Education Act (IDEA), who spend 80% or more of their day in the regular classroom increased from 33% in 1990-1991 to 62% in 2013-2014. This increase of individuals with special needs in the mainstream classroom requires strengthened collaboration between teachers and occupational therapists, however, research indicates that there is little evidence supporting a way to achieve effective collaboration between the professions to best meet the needs of children across school contexts (Kennedy & Stewart, 2011). Based on the findings of an extensive literature review, a standard of practice for effective collaboration between the professions needs to be established in order to maximize student outcomes in educational contexts.

The purpose of this project was to provide a toolkit for occupational therapists, developed on the basis of Ecology of Human Performance (EHP) to achieve effective collaboration with teachers in various school-based contexts to maximize child outcomes in elementary schools. This toolkit was developed to overcome barriers to collaboration by utilizing strategies that were identified in literature. Within the toolkit, various contexts that are found within the school

setting are identified and matched with objective assessment measures that occupational therapists can use in coordination with teachers, in addition to communication tips, and effective collaboration strategies.

School contexts that will be identified within this toolkit include cultural, temporal, physical, and social (Clark, Chandler, Dunn, & Rourke, 2013). Cultural context is comprised of school rules and expectations that reflect the school district's values and beliefs. Temporal contexts include school routines, duration, sequence and time of daily occupations. Physical contexts are aspects of the environment including objects found within the classroom such as chairs, tables, and computers. Social contexts incorporate the interaction and relationships between individuals, groups or organizations, and personal context is all encompassing and includes the students' ability to engage in the various contexts of the school setting (Clark et al, 2013).

Strategies to promote collaboration within the school, found in this toolkit were developed based on the five approaches identified in the EHP model; establish or restore, alter, modify, prevent, and create. Dunn, Brown, and McGuigan (1994) defined the intervention strategies. Establish or restore was designed to develop and improve skills and abilities so an individual can complete and perform tasks within their contexts. Alter refers to creating a better fit for the person, task or environment, but does not change it. Modify or adapt focuses on increasing an individual's performance range by changing the environment or task. Prevent is when a negative outcome is predicted and the therapist changes the course of events. Lastly,

create involves enriching occupational performance within a context without assuming a problem has or will occur (Turpin & Iwama, 2011). EHP is based on the idea that a person cannot be separated from his or her context, therefore the interrelationship between the person and the environment is considered the central force in human behavior and task performance (Myers, 2006). Regarding this belief, the influence of the context in which a child participates in school-based occupations greatly impacts his or her performance. A primary goal of EHP is to increase an individual's performance range, or ability to perform tasks, which according to Cole and Tufano (2011) is influenced by a person's skills or abilities and the supports or barriers within a specific context. EHP supports collaboration between disciplines, as it is not occupational therapy specific, therefore was appropriate in supporting a collaborative relationship between professionals within the school system (Dunn et al., 1994). By using EHP to guide these intervention strategies, teachers and occupational therapists can view contextual barriers for children through the same lens and share a primary focus for intervention. The toolkit also contains operational definitions, and delineation of roles so that team members can use common language and have an understanding of his or her unique role on the team, emphasizing that one profession is no more important than another in maximizing opportunities for student success.

Chapter II contains findings from an extensive literature review that was conducted to establish this toolkit. The literature review contains findings from library databases, textbooks, federal publications and other educational materials to provide information about the role of the

occupational therapist, school contexts, barriers and benefits to collaboration, studies to demonstrate the efficacy of EHP practice and strategies to promote effective collaboration. Chapter III then describes the methodology used in the development of this product. Chapter IV contains the product of this research, a toolkit, which was intended for occupational therapists to promote effective interdisciplinary collaboration within the contexts of the school. Chapter V then concludes this project with a summary of the product, limitations of the product, and implications for future research and possible implementation of this toolkit.

CHAPTER II

LITERATURE REVIEW

According to recent studies, a growing number of students with specific learning needs, behavioral issues and various disabilities are participating in the regular classroom (Hui, Snider, Couture, 2016). With this increase of students with special needs in the mainstream classroom, there was also an increased need for a team of both educational and healthcare professionals to support these students and meet their needs within the contexts of the school setting. Based on current research, it was evident that while teachers and occupational therapists desire a collaborative relationship, there was little evidence supporting a way to achieve effective communication between the professions to best meet the needs of students across contexts (Kennedy & Stewart, 2011). In addition to having inconsistent definitions of collaboration, there was limited understanding of how collaboration between teachers and occupational therapists contributed to positive student outcomes (Villeneuve & Hutchinson, 2012). Based on these identified issues, there was an evident need to promote effective collaborative relationships between teachers and occupational therapists, as each profession has a unique role in promoting student success within the school. Factors that were considered included: (a) the role of the occupational therapist according to current legislation, (b) benefits and barriers to collaboration, (c) specific strategies to promote collaboration, and (d) the development of an evidenced based guide for occupational therapists on how to best develop a collaborative relationship with teachers across school contexts.

Role of the OT

OT in School Setting

Occupational therapists play a vital role within the school setting by supporting students' abilities to participate in school-based occupations. Occupational therapists role within various contexts in the school setting includes both academic and non-academic activities such as; social skills, math, literacy, behavior management, recess, participation in sports, self-help skills, pre-vocational and vocational participation, functional activities and more (AOTA, 2016). Schools are currently utilizing occupational therapists to meet requirements for a free and appropriate public education and to meet students individualized education plan (IEP) goals however, OTs are not being utilized in all contexts of the school in which they are qualified and could help maximize performance within and outside of academics (AOTA, 2016).

Boshoff and Stewart (2013) propose that an occupational therapist can play an integral role in enabling the development of health-education teams, however when working on an educational team, the occupational therapist must move away from "occupational therapy goals" to the "team goals" that benefit the student's educational outcomes. One study found that teams formed around the needs of a child were rated by their parents as being most collaborative, indicating that a school based-team has potential to be highly successful with proper development and execution of intervention (Hillier, Civette, & Pridham, 2010). Specific roles of the occupational therapists on a collaborative team include performing screenings and evaluations, advocating for children's needs and helping them achieve optimal outcomes in

performance and participation within their school roles, identifying necessary accommodations and designing individual adaptations to meet the needs of the children, addressing environmental concerns, educating teachers and parents, and providing student resources and intervention strategies (AOTA, 2016; Egilson and Traustadottir, 2009; Reeder, Arnold, Jeffries, & McEwn, 2010; Rens & Joosten, 2014). Hui et al. (2016) described how collaborative efforts between teachers and occupational therapists empowered teachers to advocate for student needs and impact student outcomes.

There are a variety of contexts, which occupational therapists must consider for student participation within the school setting. It is important to educate teachers on the various contexts in order for them to maximize student access and participation. Contexts within the school setting that teachers and occupational therapists can collaborate to ensure positive student outcomes include; cultural, temporal, physical, and social. Clark et al. (2013), define each of these contexts. Cultural context is comprised of school rules and expectations that reflect the school district's values and beliefs. Temporal contexts include school routines, duration, sequence and time of daily occupations. Physical contexts, which include aspects of the environment, are vital to consider, as children engage in various physical contexts multiple times throughout the day. Social contexts incorporate the interaction and relationships within individuals, groups or organization (Clark et al., 2013; Dunn et al., 1994; Myers, 2006).

Legislation

Children qualify for occupational therapy services within the school based on regulations

provided by the Individuals with Disabilities Education Improvement Act (IDEA), Section 504 of the Rehabilitation Act, and the Americans with Disabilities Act (ADA) (AOTA, 2016). Legislation such as No Child Left Behind (NCLB), newly revamped as the Every Student Succeeds Act (ESSA), and IDEA mandates interprofessional collaboration for evaluating, implementing, and developing individual education programs (IEP), accessing the general curriculum, and providing the least restrictive environment for children with disabilities in the school setting. (Orentlicher, Handley-More, Ehrenberg, Frenkle, & Markowitz, 2014). Other legislation such as section 504 of the Rehabilitation Act also has guidelines for inclusion within the education system, which requires all students to have access to free appropriate public education (FAPE) (AOTA, 2011). This legislation allows school systems to fully utilize special services such as occupational therapy. These laws can also serve as an avenue for collaboration between teachers and occupational therapists to evolve and provide a more holistic learning experience for students with various needs. Due to this legislation, the role of OT has broadened within early intervening services across school contexts (Reeder et al., 2011).

Benefits to Collaboration

Collaboration Defined

Collaboration can be defined as a style between two or more parties who voluntarily engage in direct communication or interaction through problem solving or decision making in order to come up with a common goal (Kennedy & Stewart, 2011). Many teachers and health care professionals who work within the school district are unable to develop a common

definition of collaboration but agree that they engage in daily collaboration with each other (Villeneuve & Hutchinson, 2012). Collaboration in the school setting is evident in all contexts including cultural, temporal, physical, and social. As described in the occupational therapy practice framework, occupational therapists value context, as it exerts a strong influence on performance (AOTA, 2014).

Collaboration between teachers and occupational therapists within these various contexts then becomes essential, because occupational therapists see through a contextual lens that teachers are not necessarily trained on. With a greater understanding of the influence of these contexts, teachers and occupational therapists can work in collaboration to overcome student barriers and promote positive outcomes within school tasks.

According to Hillier et al. (2010), interdisciplinary collaboration was more common within the educational setting when planning children's services and policies, and required healthcare professionals to collaborate and work with non-healthcare professions. Evidenced-based research has suggested that when positive collaboration was used between teachers and occupational therapists, the results were beneficial for the students, the students' families, and individuals within the school environment (Hillier et al., 2010). Six characteristics have been recognized to promote and sustain collaborative relationships and include: (1) voluntary participation or commitment to working together, (2) equal and mutual respect for each other, (3) a common purpose, (4) joint responsibility for effectiveness, (5) shared resources to gain knowledge and expertise, and (6) collective decision making (Orentlicher et al., 2014). When

teachers and occupational therapists accomplished these six steps within each context, collaboration was more effective and meaningful. Reported benefits to collaboration between teachers and occupational therapists within the school setting included: (a) increased inclusion of students within the classroom, (b) respect toward one another's work duties, (c) increased goal attainment and satisfaction, (d) increased commitment to student outcomes, (e) increased understanding of student needs, (f) increased opportunity to carry out interventions useful to each child, and (g) overall positive outcomes across school contexts.

Inclusion

The Individuals with Disabilities Education Act (IDEA) mandated inclusion for all students which promoted occupational therapy services within the classroom, leading then to inter-professional collaboration (Orentlicher et al., 2014). Inclusion impact and provided further opportunities for collaboration with the teacher, which lead to increased participation in interventions for children who received occupational therapy services implemented into the classroom. Silverman and Millspaugh (2006) indicated that informal communication greatly enhanced the goal sharing process between teachers and the occupational therapist and was beneficial to each individual child who received special services. Inclusion also provided the occupational therapist an opportunity to understand the dynamics and demands of each classroom, adapt skills and contexts immediately, and provided the teacher an opportunity to witness implemented strategies into the classroom that were student-centered. Increased collaboration between teachers and occupational therapists within the school setting provided

more opportunity for inclusion and the option to meet the needs of each individual child, as a result of educational and developmental needs being met concurrently (Reeder et al., 2011). Due to increased inclusion, students were able to participate in a variety of contexts within the school setting, and indicated a need for effective collaboration in all environments of children throughout the school day.

Understanding Professional Roles

A commonly identified conflict between teachers and occupational therapists in literature was the lack of understanding of the roles of each profession. Hutton (2009), identified that after teachers and occupational therapists spent time together gaining trust and building relationships they were able to grasp a greater understanding and respect towards the other profession, which positively impacted the students' performance and learning experiences. When teachers and occupational therapists shared a common problem, it was easier to articulate each individual role and increase one's understanding of the other's role (Villeneuve & Hutchinson, 2012). Several studies suggested increased student performance, goal attainment and skill development due to collaboration between teachers and occupational therapists within the school contexts, which was attained when roles were delineated and understood by both professions (Kennedy & Stewart, 2011; ; Reeder et al., 2011; Silverman, Kramer & Ravitch, 2011; & Villeneuve & Hutchinson, 2012). Prior to education, teachers often did not appreciate the importance of collaboration with occupational therapists due to lack of understanding of the role. Following education however, Orentlicher et al. (2014) stated, teachers indicated that their satisfaction with the time

commitment, and care and concern that occupational therapists had toward the children increased and occupational therapists became more confident in teachers' abilities to implement interventions. Collaboration between the two professions may maximize student outcomes within the school setting and increase inclusion and interaction with peers (Barnes, Vogel, Beck, Schoenfeld & Owen, 2008; Kuhaneck & Kelleher, 2015, Orentlicher et al., 2014).

Barriers to Collaboration

While there are many benefits to effective collaboration between teachers and occupational therapists, various barriers limiting collaboration across school contexts were also identified in current literature. Referring back to IDEA, children who require special services, such as occupational therapy, should have access to inclusion in the classroom that will best fit their needs. Swinth and Hanft (2002) reported that occupational therapy services continue to be delivered in a different location than the child's classroom, which increased isolation. With the separation of services away from the classroom, teachers and occupational therapists have limited communication and opportunities for collaboration (Silverman & Millspasugh, 2006).

Role Confusion

Collaboration between occupational therapists and teachers may be limited due to the lack of understanding of each profession and the specific roles of each. Hillier et al. (2010) claimed that certain professionals expressed their role to the team only if they felt comfortable and confident in their abilities, and secure within the setting where they were working. This lack of communication and delineation of roles was detrimental to the team within each school setting

(Hillier et al., 2010). Studies have found that understanding of each team member's roles resulted in more effective collaboration and positive team outcomes (Hillier et al., 2010).

Role confusion made it difficult for collaboration to take place within teams and may result in inconsistency between the team's implementation of services (Kennedy & Stewart, 2011). Hutton (2009) suggested that if team members can achieve role delineation, clarification of team member's perspectives, common communication/language, and maintain confidentiality, the team has increased potential for success. However, studies have shown that it was often difficult for teams within school settings to be successful in all areas of communication and role clarification (Hillier et al., 2010).

Limited Time

In addition to role confusion, time was a barrier that impacted collaboration between teachers and occupational therapists. Due to district policies, each profession has limited time to add to their workload with the amount of obligation that must be met (Orentlicher et al., 2014). The number of children referred to specialized services has increased, resulting in larger caseloads for occupational therapists and further complex duties for the teacher in the classroom (Hutton, 2009). The increased caseload decreased the amount of time allowed for collaboration between the professions, but increased the need for collaboration. Along with the increased workload, occupational therapists have to maintain direct treatment units for the children, which does not include time for consultation with teachers or other team members, so that occupational therapists have had to find personal time to collaborate with teachers (Reeder et al., 2011).

Scheduling was also a barrier for communication with other team members. While teachers have their days planned with various classes, occupational therapists treated many children throughout the day who belonged to various classrooms, that made it difficult to set up formal meeting times to discuss children, plan, educate, or develop strategies for classroom interventions (Silverman & Millspaugh, 2006). This lack of formal meeting time decreased the opportunity to have a combined effort to address and meet the needs of each individual child (Villeneuve & Hutchinson, 2012).

Communication

There are wide ranges of personalities on interprofessional teams that may make it difficult to achieve positive and effective collaboration between the two professions. When unique communication styles and attitudes come together, it may lead to either a positive or negative outcome. A specific set of competencies was needed to obtain the ability to work collaboratively (Kennedy & Stewart, 2011). Orentlicher et al., (2014) found that lack of communication skills was due to occupational therapists view of themselves as the expert and did not recognize teachers as equal partners preventing united support for the children. This correlated with the importance of the need for collaboration, understanding each profession's role, and unique strengths of each professional within the team. Many teachers and occupational therapists were not taught to work together within this specific type of setting or context, and that has made it difficult for them to meet expectations of effective collaboration (Kennedy & Stewart, 2011; Orentlicher et al., 2014; Silverman & Millspaugh, 2006).

Limited Evidence

Evidence-based research indicated a need for more training and techniques for teachers and occupational therapists in order to achieve effective collaboration to best fit the needs of each student. Hillier et al. (2010) found there were no evaluations within the education-health contexts that could offer guidance for recommendations on how to interact with different professions within the school system. There was limited guidelines found that could increase the effectiveness of collaboration between occupational therapists and teachers to benefit the needs of the children (Hillier et al., 2010; Hutton, 2009). Evidence supported a need for more information on the topic of collaboration between the professions, which in turn could decrease the barriers to collaboration.

Strategies

Teacher task forces have often reported having insufficient resources and support for children with special needs due to the rising prevalence and complexity of student needs (Hui et al., 2016). Barnett and O'shaughnessy (2015) indicated that with this increase came the need for research-based, collaborative intervention strategies developed by occupational therapists in coordination with teachers to maximize learning of the students. Occupational therapists have the skill set to address the various complex needs of students and support teachers in addressing challenges across school contexts and various school tasks (Barnett and O'shaughnessy, 2015). However, occupational therapists must have an appropriate and effective way of working with teachers and overcoming the various barriers to collaboration. Specific strategies have been

identified in recent literature as effective in promoting collaborative relationships between teachers and occupational therapists (Barnett & O'shaughnessy, 2015).

Education and Communication

In a qualitative study investigating experiences of both teachers and occupational therapists working together in a school-based setting, one emerging theme was, “occupational therapists need to not see themselves as the experts but develop equal partnerships to set collaborative goals” (Rens & Joosten, 2014, p 154). Rens and Joosten (2014) also revealed the importance of educating teachers about the role of the occupational therapist in the school setting and building relationships, as many teachers reported that they had never worked with an occupational therapist in the school and did not understand the value of the profession. According to both the teachers and the occupational therapists in the study, the role of the occupational therapist was best understood through personal development sessions in which teachers would observe the occupational therapists in action (Rens & Joosten, 2014). Barnett and O'shaughnessy (2015) ratified the need for teachers and occupational therapists to understand one another's roles in developing a collaborative relationship. The authors provided specific strategies for communication to help develop an effective and professional relationship including active listening, double-checking intended meaning to avoid conflict or misunderstanding, and maintaining mutual respect for one another (Barnett & O'shaughnessy, 2015).

In another study, Kuhaneck and Kelleher (2015) discussed the impact of the environment on student learning and the importance of equipping teachers with proper education about

various sensory stimuli in the classroom. In order to address environmental concerns and promote collaboration between teachers and occupational therapists, researchers developed a tool called *The Classroom Sensory Environment Assessment (CSEA)*. The CSEA is a questionnaire that contains 161 items divided into sections by sensory type. Teachers use the assessment to rate the frequency and the intensity of the sensory experience. The measure is not scored with numbers that indicate that certain sensory experiences are good while others are bad, but rather, it is designed to make the teacher aware of the sensory experiences and promote conversation between the teacher and the occupational therapist (Kuhaneck and Kelleher, 2015). The promotion of this collaborative relationship is based on the sharing of knowledge, which allows the teachers to make an informed decision, and minimize frustration that may be associated with occupational therapists making recommendations without first consulting or educating the teachers (Kuhaneck and Kelleher, 2015). Hutton (2009) stated that one teacher assistant indicated that she felt more equipped to implement therapist recommendations following education and support by the occupational therapist and was more likely to follow through than if they had received a list of things “to do” with no justification.

Co-Planning and Co-Teaching

In addition to educating teachers about the role of occupational therapists and having open communication, a specific strategy that has suggested positive student outcomes included co-teaching. Case-Smith, Holland, and White (2014) conducted a study to determine the effectiveness of a co-taught handwriting program with first grade students using occupational

therapy interventions for underlying issues affecting handwriting to complement the skills of the teacher in writing, curriculum, and classroom. In order for the co-taught program to be effective, the teachers and occupational therapists had formal meeting times each week to plan, delineate their roles, and determine outcomes which they would both emphasize to the student for effective carry over (Case-Smith et al., 2014). Results of the study indicated that the students who participated in the co-taught handwriting program had significant improvement in legibility and fluency of their writing compared to children in the control group.

Similar results of a co-taught program were found following a study by Barnes et al. (2008) in testing self-regulation strategies for children with emotional disturbances in the classroom. The study used the Alert Program, which also focuses on sensory input and the impact on student learning. The program is used to help students learn to recognize their state of arousal within the environment and how it relates to classroom behaviors. For the study, occupational therapists used the Alert Program within the classroom, and while the students found positive outcomes using the program, the teachers in the classrooms also developed increased awareness of the sensory environment and were able to limit sensory triggers for their students.

One aspect of co-planning and co-teaching within the classroom environment includes the teacher and occupational therapist coming to an agreement on specific problems and solutions, which may be difficult when working under two different practice models. One way to objectively overcome these discrepancies would be to utilize evidence-based assessments or

measures within the classroom. Just as Kuhaneck and Kelleher (2015) utilized the CSEA, and Barnes et al. (2008) utilized the Alert Program, other authors have identified various assessments and evaluation tools that are helpful to use in an educational setting. Clark et al. (2013) identified various evaluation tools, which can be used across school contexts to assess participation, and measure outcomes including; the Canadian Occupational Performance Measure (COPM), the Children's Assessment of Participation and Enjoyment (CAPE), and the School Function Assessment. Case-Smith and O'Brien (2010) also identified an assortment of assessment tools that can be utilized as part of a transdisciplinary approach, to ensure each child can be observed across contexts by various members of the team (Case-Smith & O'Brien, 2010). Utilizing these methods may increase collaboration among team members, as everyone's expertise is accounted for within an objective process, and can then be used to identify problematic areas and develop collaborative intervention strategies.

Assessment tools have a specific purpose and can be utilized to measure person variables, in addition to context variables that may impact the way a student functions across school contexts. Asher (2007) provides descriptions and appropriate usage of multiple assessments, providing a great resource for occupational therapists to use when determining which assessment tools should be used in collaboration with teachers in the elementary school setting.

Reported positive outcomes of collaborative efforts included: teachers acquiring skills in applying interventions in the classroom, and occupational therapists developing skills in applying educational strategies to their interventions. Barnett and O'shaughnessy (2015) provided specific

suggestions to promote successful interdisciplinary relationships. First, the authors suggested having regularly scheduled meetings at a minimum of one-hour per week. These meetings should be structured and include; priorities for the students, a specific timeline for intervention, planning instructional accommodations and modifications, and assigning roles and responsibilities for addressing the student's needs (Barnett & O'shaughnessy, 2015).

Universal Design

Occupational therapy services are often delivered to only one or two students in the classroom, however much of what is addressed can be applicable to all students (Barnett & O'shaughnessy, 2015). This is known as a universal design for learning (UDL), and is defined as “a design of instructional materials, activities and assessment procedures that can meet the needs of learners with widely varying abilities and backgrounds” (Gargiuo, 2015). The idea of UDL is widely accepted by teachers as the interventions are more easily integrated into the daily classroom routine, and benefits all of the students rather than just one or two, which eliminates some teacher frustration stemming from occupational therapy recommendations (Barnett & O'shaughnessy, 2015; Rens & Joosten, 2014). In a study by Hutton (2009), occupational therapists spent time educating teachers and teacher aids on class-wide intervention for participation and engagement due to an increase in occupational therapy referrals within the school. Interventions were tailored to generalized educational goals that could benefit all students such as writing, cutting, physical activities and socialization (Hutton, 2009). Teachers participating in the study found that this approach was more effective than therapists removing

children from the classroom and that it was an efficient way to influence various school routines in a short amount of time (Hutton, 2009).

Also in consideration with UDL; part of an occupational therapist's role is to promote health and wellness, therefore implementing positive behavioral supports, environmental modifications to promote learning, and addressing curriculum with the interdisciplinary team would fall within occupational therapy's realm and is an important aspect of helping all students successfully participate in various school tasks (AOTA, 2016).

Ecology of Human Performance

Ecology of Human Performance (EHP) is a model based on the idea that a person cannot be separated from his or her context, therefore the interrelationship between the person and the environment is considered an interactive central force in human behavior and task performance (Dunn et al., 1994; Myers, 2006). This model has proven to be effective with interdisciplinary teams, due to the concept of task, rather than occupation. Within the school system the EHP framework promotes collaboration across disciplines due to the accessibility and flexibility of the concepts in the model (Myers, 2006). According to this model, a child's performance range, or ability to perform tasks are influenced by contextual facilitators and barriers, in addition to the child's current skill set (Dunn et al., 1994; Cole & Tufano, 2011; Myers, 2006). The primary focus of intervention according to EHP was context. According to Dunn et al. (1994), the interaction between a person and context affects both human behavior and task performance (Lee, 2010). Dunn, who developed EHP, identified five intervention strategies under each

context, which affects the person and the task (Dunn et al., 1994; Myers, 2006). The five intervention strategies include; establish or restore, alter, modify or adapt, prevent, create. EHP was appropriate in guiding the development of this toolkit due to current evidence of effectiveness in interdisciplinary collaboration that can be applied within the school setting (Myers, 2006; Lee 2010).

Conclusion

Due to an increase of children with special learning needs in the mainstream classroom, there was a need for educational supports both by the teacher and the occupational therapist to ensure that students' unique needs were being met across school contexts. It was important for occupational therapists to work with teachers in examining contextual barriers within the school due to their unique perspective about the influence of context on participation. There was legislation in place that mandates equal opportunity for students with disabilities, and school systems have the assets to meet these requirements (AOTA, 2011; Orentlicher et al., 2014). However, there was a lack of effective collaboration between teachers and occupational therapists to provide maximum benefits to their students. While literature specifies numerous benefits to collaboration, research also provided examples of the many barriers that prevent this desired collaborative relationship between teachers and occupational therapists (Hillier et al., 2010; Kennedy & Stewart, 2011; Orentlicher et al., 2014). These barriers may be overcome through education regarding cultural, temporal, physical, and social, contexts in addition to various intervention strategies within the EHP model that may be utilized to address issues

involved in several school related tasks. These problems have been acknowledged and addressed in literature, and specific strategies to overcome identified barriers and promote collaboration have been provided. This toolkit addressed a gap in occupational therapy practice, as there are limited resources available to occupational therapists to promote collaboration with teachers across school contexts. Based on these findings, it was evident that occupational therapists who work in a school setting would benefit greatly from a toolkit that provided specific tools and strategies to better collaborate with teachers and maximize student outcomes with various school tasks. It is anticipated that occupational therapists will utilize these strategies and increase collaboration in the school setting.

CHAPTER III

METHODOLOGY

The purpose of this toolkit was to provide strategies to occupational therapists to collaborate with teachers across elementary school contexts. There was an evident need for implementation of a framework for occupational therapists to use when interacting with teachers due to the increase of children with special needs in the mainstream classroom. Based on current research, it was evident that while teachers and occupational therapists desired a collaborative relationship, there was little evidence supporting a way to achieve effective communication between the professions to best meet the needs of students across contexts (Kennedy & Stewart, 2011). With guidance from the EHP model, intervention strategies were provided for interdisciplinary use in various contexts of the school.

In order to develop this toolkit, an extensive review of literature was conducted using the Harley E. French and Chester Fritz Library databases, including CINAHL, OT Search, PubMed, Google Scholar and the American Occupational Therapy Association (AOTA). Key terms in conducting the research included; collaboration, teachers, occupational therapist, communication, school setting, elementary, students, intervention, strategies, and Ecology of Human Performance (EHP) model. Textbooks, research articles and educational materials were utilized in the methodology of this product. Based on the findings of the literature review, the authors developed this toolkit to address identified barriers to collaboration by utilizing evidence-based strategies guided by the EHP model.

The review of literature revealed benefits to collaboration between teachers and occupational therapists within school contexts including; (a) increase in inclusion of students within the classroom, (b) respect toward one another's work duties, (c) increased goal attainment and satisfaction, (d) increased commitment to students outcomes, (e) increased understanding of student's needs, (f) increased opportunity to carry out interventions useful to each child, and (g) overall positive outcomes within the school setting (Orentlicher et al., 2014). In addition to these findings, various strategies have been identified to promote successful collaborative relationships, which have been implemented into this toolkit.

The toolkit was developed to provide occupational therapists with evidence-based strategies to promote collaboration with elementary school teachers to meet the diverse needs of students. The strategies provided within the toolkit were developed on the basis of the EHP model, and are structured according to the contexts and intervention strategies identified by Dunn. The contents of this toolkit include; operational definitions, specific strategies for interdisciplinary collaboration, educational materials for occupational therapists to provide to teachers, and five case study applications that align with the EHP model. Included in the case study applications are an evaluation of person and context variables, the selection of appropriate assessment tools, and collaborative intervention strategies.

CHAPTER IV

PRODUCT

Promoting Interdisciplinary Collaboration Across School Contexts: A Toolkit for Occupation Therapists was developed to be used by occupational therapists in elementary school settings to promote collaboration with teachers. In order to guide the collaborative relationship, this toolkit contains strategies identified within occupational therapy literature and was based on the Ecology of Human Performance Model (EHP).

There are many aspects of student engagement across elementary school contexts, and in order to best address these aspects, a collaborative relationship is required between the teacher and the occupational therapist. Based on current research, it is evident that while teachers and occupational therapists desire a collaborative relationship, there is little evidence supporting a way to achieve effective communication between the professions to best meet the needs of students across contexts (Kennedy & Stewart, 2011). The purpose of this toolkit was to fill this gap in service delivery by providing a framework for occupational therapists to work collaboratively with teachers across elementary school contexts, working with students who have common diagnoses, and those who are non-diagnosed or typically developing.

The toolkit includes: operational definitions to ensure role delineation on an educational team, specific strategies to increase collaboration between the professionals in the school, and educational materials for occupational therapists to offer to teachers. In addition, the toolkit utilizes case studies to demonstrate appropriate application of EHP to address person and context

variables, select assessment tools, and implement collaborative intervention strategies that can be used both by the occupational therapist and the teacher. The information presented in this toolkit was intended to provide school-based occupational therapists with the tools they need to promote collaboration with teachers to optimize student outcomes across elementary school contexts.



Promoting Interdisciplinary Collaboration Across School Contexts: A Toolkit for Occupational Therapists

Sidney Luers, MOTS & Shayna Shaffer, MOTS

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Operational Definitions:

- ✚ **Collaboration:** A mutual process in which two or more people work toward the same ends (Clark et al., 2013).
- ✚ **Context:** Variety of interrelated conditions within and surrounding the client that influence performance, including cultural, personal, temporal and physical context (AOTA, 2014).
- ✚ **Teacher Role:** Responsible for planning, instructing, supervising and assessing students, grading assignments, and designing the curriculum for the students within the educational program (Clark et al., 2013).
- ✚ **Occupational Therapist Role:** Responsible for intervention and evaluation in areas that affect the child's learning and participation in context of educational activities, routines and environments and address environmental, physical and psychosocial factors that interfere with performance such as activities and tasks within the school setting (AOTA, 2011; Venes & Taber, 2013).
- ✚ **Person Variables:** Refers to general knowledge about how human beings learn and process information, as well as individual knowledge of one's own learning processes including sensorimotor skills, processing skills, coping skills, interests (Livingston, 1997).
- ✚ **Context Variables:** Elements that influence performance within different environments or situations including cultural, temporal, physical and social (AOTA, 2014).

Collaborative Strategies:

A variety of strategies have been identified in recent literature that can be implemented to promote collaboration with teachers.



Education

- ✚ Observe one another performing essential job functions to increase understanding of roles within the school contexts. This will increase each person's understanding of the other's role and the unique value of both the teacher and the occupational therapist (Rens & Joosten, 2014).
- ✚ Provide educational materials, and ask for educational materials from the teacher.
- ✚ Utilize assessments to provide objective learning opportunities to teachers within school contexts such as *The Classroom Sensory Environment Assessment (CSEA)*. This assessment is not scored with numbers that indicate that certain sensory experiences are good while others are bad, but rather, it is designed to make the teacher aware of the sensory experiences and promote conversation between the teacher and the occupational therapist (Kuhaneck and Kelleher. 2015).



Communication

- ✚ Practice active listening and double check intended meaning to avoid conflict and misunderstanding. This will increase mutual respect for one another (Barnett & O'shaughnessy, 2015).
- ✚ Schedule structured weekly meetings with the teacher. These meetings should include; priorities for the student or students, determining a specific timeline for intervention, planning instructional accommodations and modifications, and assigning roles and responsibilities for addressing the student's needs (Barnett & O'shaughnessy, 2015).



Co-Planning & Co-Teaching

- ✚ Delineate roles to work together in determining developmental or functional deficits related to difficulty within the classroom.
- ✚ Utilize a program across school contexts to promote carry over of performance across settings, such as the Alert Program (Barnes, Vogel, Beck, Schoenfeld and Owen, 2008).



Universal Design

- ✚ Encourage teachers to utilize instructional materials, activities and assessment procedures that can meet the needs of learners with widely varying abilities and to target the entire class (Gargiuo, 2015). This may eliminate teacher frustration of asking him/her to cater to one or two students within the classroom.
 - Hutton (2009) implemented a study in which occupational therapists spent time educating teachers and teacher aids on class-wide interventions for participation and engagement due to an increase in occupational therapy referrals within the school. Interventions were tailored to generalized educational goals that could benefit all students such as writing, cutting, physical activities and socializing (Hutton, 2009). Teachers participating in the study found that this approach was more effective than therapists removing children from the classroom and that it was an efficient way to influence various school routines in a short amount of time (Hutton, 2009).
- ✚ Promote behavioral supports, make environmental modifications, offer choices, and encourage equal opportunity and participation.



Educational Materials:

Professional Roles

Discipline	Roles	Area of Expertise	Core Competencies
Teacher	Planning, instructing, supervising students	Cognitive Development	✚ Understand growth and development for students
	Grade and assess students performance	Social and Emotional Development	✚ Guide interaction with students ✚ Partner with families and communities
	Design a curriculum to best fit the student's learning needs	Curriculum Development	✚ Understand health, safety and nutrition ✚ Aware of learning environments and curriculum ✚ Know program planning and development ✚ Show professionalism and leadership
EEC, n.d.; Clark et al., 2013			
Special Education Teacher	Assessing student's educational skills to determine the need for adaptation	Cognitive Development	✚ Show awareness in technology to promote learning
	Adapting the classroom curriculum to meet the educational needs of students who have disabilities	Social and Emotional Development Behavioral Support	✚ Have awareness of diversity in students with disabilities ✚ Knowledge about health, safety and emergency procedures
	Development of IEPs with educational team	Curriculum Adaptation	✚ Knowledge of legal issues concerning students with disabilities ✚ Able to provide effective application of instruction to assist teacher
NASET, n.d.			

Occupational Therapist

Educating teachers, parents & administrators

Evaluating and providing interventions to students

Addressing environmental concerns that impact participation in school

Supporting academic and non-academic outcomes including social skills, handwriting/reading behavior management, etc.

Adaptive Equipment needs

Physical Development

Social and Emotional Development

Behavioral Support

Environmental modification

Supervision

- + Select appropriate assessments
- + Deliver developmentally appropriate interventions
- + Address roles of the student across school contexts
- + Collaborate with team members to develop IEP goals
- + Occupational therapists analyze the functional ability needed in certain daily living situations and environmental conditions.
- + Carry out specific activity and occupational analyses.

AOTA, 2016

Certified Occupational Therapy Assistant

Providing safe and effective services under supervision and partnership of OTR

Contributing knowledge to screen and evaluations

Selecting interventions based off of goals provided by OTR

Documentation

Intervention strategies

Behavioral Support

Environmental modification

- + Collaborate with team members
- + Deliver developmentally appropriate interventions based off of OTR and IEP goals
- + Communicate with OTR about specific strategies to use for each individual
- + Address roles of the student across school contexts

AOTA, 2009

Additional Educational Materials

ADHD: See Appendix A

- American Occupational Therapy Association. (2004). *Understanding Attention Deficit Hyperactive Disorder* [Fact Sheet].

Autism: See Appendix B

- American Occupational Therapy Association. (2011). *Occupational Therapy's Role with Autism* [Fact Sheet].
- American Occupational Therapy Association. (2009). *Help Students with Autism Achieve Greater Success in Academic Performance and Social Participation* [Fact Sheet].

CP: See Appendix C

- American Occupational Therapy Association (2015). *The Role of Occupational Therapy in Providing Assistive Technology Devices and Services* [Fact Sheet].
- Dayton Children's Hospital (2014). *Cerebral Palsy Special Needs Fact Sheet* [Fact Sheet].

OT in School Settings: See Appendix D

- American Occupational Therapy Association (2016). *Occupational Therapy in School Settings* [Fact Sheet].
- American Occupational Therapy Association (2009). *Occupational Therapy in School Mental Health* [Fact Sheet].

✚ **Sensory Processing:** See Appendix E

- American Occupational Therapy Association (2015). *Addressing Sensory Integration and Sensory Processing Disorders Across the Lifespan: The Role of Occupational Therapy* [Fact Sheet].
- North Shore Pediatric Therapy (2013). *Sensory Processing Disorder Infographic* [Fact Sheet].

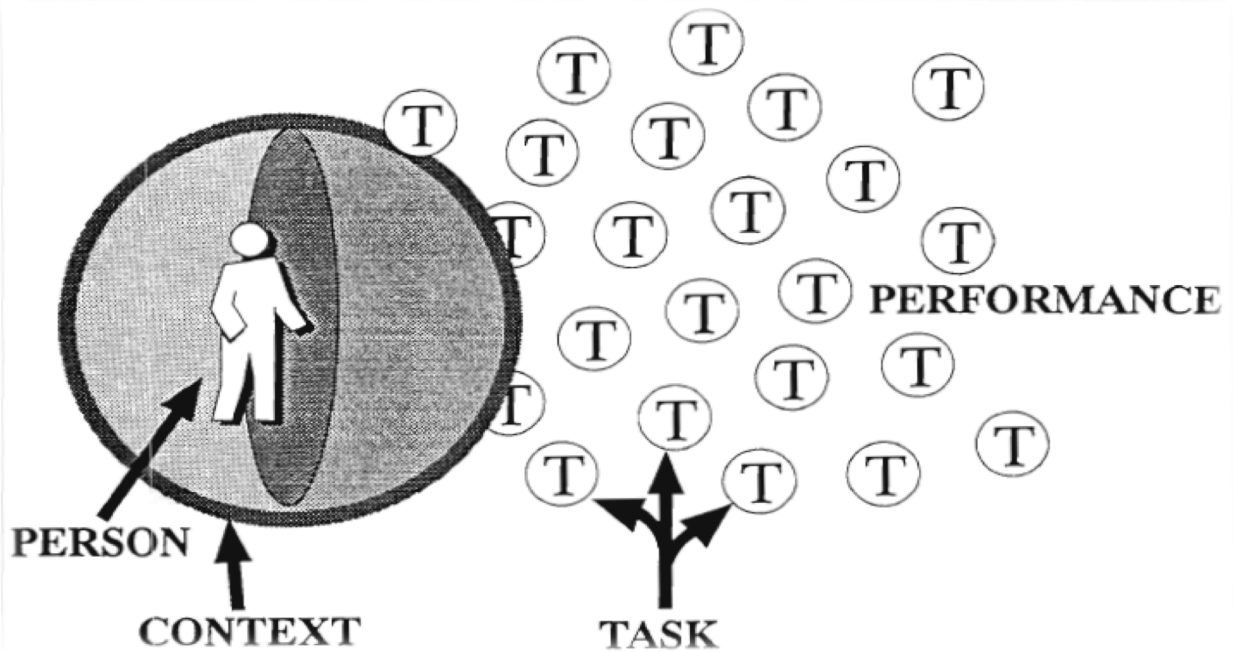
✚ **Universal Design:** See Appendix F

- American Occupational Therapy Association. (2015). *Occupational Therapy and Universal Design for Learning* [Fact Sheet].

EHP Model Application:

Intro to EHP

✚ Ecology of Human Performance (EHP) is a model based on the idea that a person cannot be separated from his or her context, therefore the interrelationship between the person and the environment is considered an interactive central force in human behavior and task performance (Myers, 2006). This model has proven to be effective with interdisciplinary teams, due to the concept of task, rather than occupation. Within the school system the EHP framework promotes collaboration across disciplines due to the accessibility and flexibility of the concepts in the model (Myers, 2006). Our goal in having EHP as a guiding theory for this toolkit is to promote collaboration between the occupational therapist and the teacher by implementing intervention strategies across contexts that students may interact, within the school setting. These intervention strategies are guided by the EHP model and will be developed and implemented by both the occupational therapist and the teacher, taking into consideration the unique skill set of each profession.

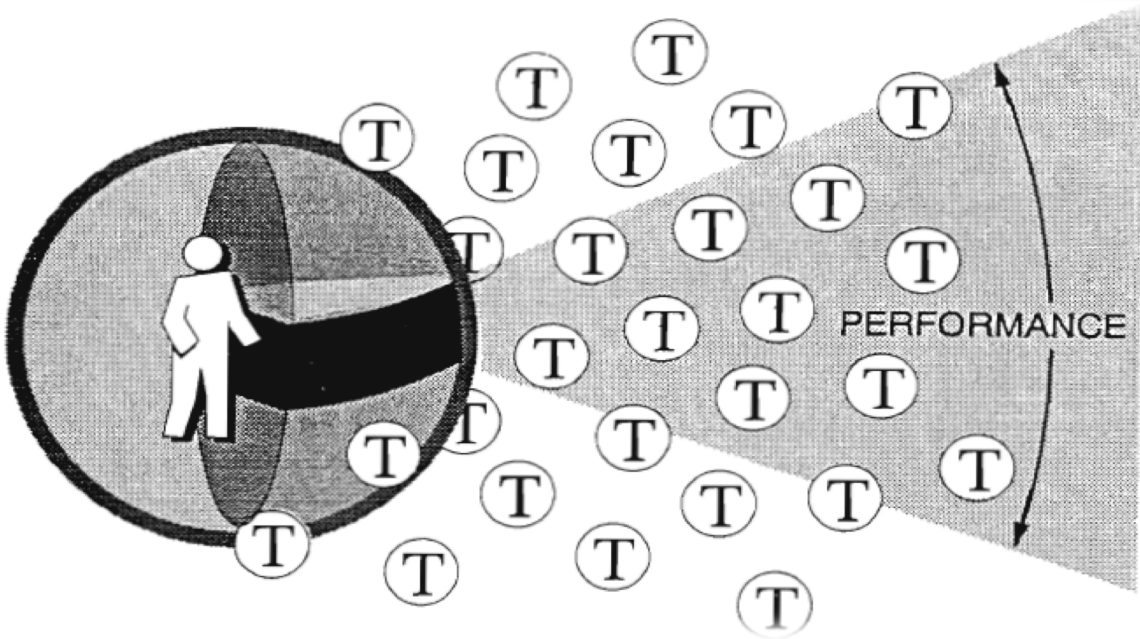


(Dunn et al., 1994)

When applying the EHP model within the school setting, the person is the student; the contexts are those identified by Dunn: cultural, temporal, physical, and social; and the tasks are all of the opportunities available to the student to engage in, in school (Dunn et al., 1994).

Increasing Performance Range

✚ The EHP model emphasizes the inter relatedness of person, context, task and performance within a specific environment (Turpin & Iwama, 2011). A primary goal of EHP is to increase an individual's performance range, which is the set of tasks available to them. "The performance range is influenced by the individual's skills and abilities and the supports and barriers within a particular context" (Turpin & Iwama, 2011, p. 110). As an occupational therapist, you have the skills and abilities to identify supports and barriers within the contexts of the school, and emphasize the student's abilities to increase their performance range and optimize their educational outcomes. This will be best accomplished by working with the classroom teacher, as he or she may have different experiences and insight to a student's interaction across contexts. This model supports interdisciplinary collaboration, therefore you and the teacher can work together in identifying person and context variables and develop interventions to increase the student's performance range to optimize occupational performance within school contexts.



(Dunn et al., 1994)

The performance range then, is based on the student's skills and abilities in addition to the supports and barriers within the various contexts.

Context and Performance

- ✚ There are four contexts identified within the EHP model (Clark et al., 2013).
 - **Cultural contexts** are comprised of school rules and expectations that reflect the school district's values and beliefs.
 - **Temporal contexts** are comprised of school routines, duration, sequence and time of daily occupations.
 - **Social contexts** incorporate the interaction and relationships between individuals, groups or organizations
 - **Physical contexts** are aspects of the environment, including objects found within the classroom such as chairs, tables and computers.

Intervention Approaches

- ✚ There are five intervention approaches identified within the EHP model (Dunn et al., 1994).
 - **Establish/Restore:** Establish refers to attainment of a new skill or ability, while restore is the reestablishment of a lost skill or ability. A person's ability to establish or restore a skill must be performed within the context.
 - **Alter:** Changing the context or task to enable a person to perform with their current skills or abilities.
 - **Adapt/Modify:** Contextual features and task demands are revised to support performance within the natural setting or context.
 - **Prevent:** Used to avert the development of a problem or occurrence in performance within a particular context. This strategy aims to prevent difficulties.
 - **Create:** Used to promote more adaptable or complex performance in context to increase performance. This strategy encompasses a universal design.

These intervention approaches are intended to be used to guide the development of specific intervention strategies. They may be established and implemented collaboratively by the occupational therapist and the teacher to increase the student's performance range across school contexts.

Assessments:

Cultural Assessments	
Adaptive Behavior Scale-School (ABS-S: 2)	<ul style="list-style-type: none">• Purpose: Used for adaptive behaviors in nine domains related to IADLs. This assessment is useful for children with intellectual disabilities, autism and behavior disorders. Maladaptive behaviors are measured in seven behavior domains using this assessment.• Administration: Clinician• Format: Standardized criterion reference• Population: Children ages 3-8 years• Time to administer:• Resources: www.proedinc.com
Children's Assessment of Participation and Enjoyment (CAPE)	<ul style="list-style-type: none">• Purpose: This measure a child's participation in, enjoyment of and preferences for formal and informal activities other than school.• Administration: Therapist• Format: Picture-based questionnaire and rating scale• Population: Children ages 6-21• Time to administer: 30-45 minutes• Resources: www.harcourtassessment.com

Temporal Assessments

Leiter International Performance Scale-Revised (Leiter-R)

- **Purpose:** This is used to gain information about general intelligence based on abstract concepts. Used to assess visualization and reasoning (VR) and attention and memory (AM).
- **Administration:** Self-report (student, parents and teachers)
- **Format:** Norm-based performance scale
- **Population:** Children and adolescents ages 2-21
- **Time to administer:** 25-40 minutes
- **Resources:** www.stoeltingco.com/tests

Social Assessments

Aggression Questionnaire:	<ul style="list-style-type: none"> • Purpose: Used to assess anger and aggression in order to identify aggressive responses to develop strategies to channel anger safely. • Administration: Self-report (student, parents and teachers) • Format: Self-report questionnaire • Population: Children or adults with at least third grade reading ability. • Time to administer: 10 minutes • Resources: www.wpspublish.com
Burkes Behavior Rating Scales (BBRS-2)	<ul style="list-style-type: none"> • Purpose: To assess behavioral adjustment to school and community activities. This assessment is used to supplement information gained through interviews with children and parents. • Administration: Parent or teachers • Format: Questionnaire for parents or teachers • Population: Children ages 4-18 • Time to administer: 15 minutes • Resources: www.wpspublish.com
Student Behavior Survey (SBS)	<ul style="list-style-type: none"> • Purpose: Assesses school specific behaviors that reflect socially disruptive behaviors and issues in emotional or behaviors adjustment. The students behaviors are compared to his or her peers and reflects academic achievement, adjustment problems, and behavioral assets needed for classroom success. • Administration: Teachers • Format: Observation-based rating scale • Population: Children ages 5-18 • Time to administer: 15- 20 minutes • Resources: www.wpspublish.com
Play History	<ul style="list-style-type: none"> • Purpose: This is used to identify a child’s play experiences and play opportunities. It is a great tool for treatment planning purposes. • Administration: Self-report (student, parents and teachers) • Format: Semi-structured interview • Population: Children and adolescents • Time to administer: Not specified • Resources: mh4ot.com/resources

Physical Assessments

School Setting Interview	<ul style="list-style-type: none"> • Purpose: To promote collaborative dialog between occupational therapists and the student to identify needed accommodations for the student in school context. • Administration: Therapist • Format: Semi-structured interview • Population: Student with disabilities • Time to administer: 40 minutes • Resources: www.moho.uic.edu/assess/weis.html
School Function Assessment (SFA)	<ul style="list-style-type: none"> • Purpose: This assessment is designed to measure functional performance on tasks related to social and academic school function. Strengths and needs of the student are identified across school contexts. • Administration: Teachers or other school personnel • Format: Criterion referenced • Population: Elementary School-aged students • Time to administer: • Resources: www.pearsonclinical.com
Classroom Sensory Environment Assessment (CSEA)	<ul style="list-style-type: none"> • Purpose: Provides a means of understanding to impacts of a classrooms sensory environment on student behavior. The intent is to promote collaboration between occupational therapists and elementary education teachers. • Administration: Teachers • Format: Observation and rating scales tool • Population: Children in elementary schools • Time to administer: Not identified • Resources: ~ new assessment

Person Variable Assessments

<p>Peabody Developmental Motor Scales (PDMS-2)</p>	<ul style="list-style-type: none"> • Purpose: Provides an in depth assessment of gross and fine motor skills. It measures a child’s motor competence relative to their peers, qualitative and quantitative aspects of skills, skill deficits and progress over time. • Administration: Clinicians • Format: Task performance based rating scale • Population: Children from birth – 6 years old • Time to administer: 45-60 minutes <p>Resources: www.proedinc.com</p>
<p>Bruininks-Oseretsky Test of Motor Proficiency (BOT-2)</p>	<ul style="list-style-type: none"> • Purpose: To provide a comprehensive index of motor proficiency as well as measures of gross and fine motor skills. Designed to be used by therapists or educators. • Administration: Therapists, educators and researchers • Format: Standardized battery of motor performance tasks • Population: Children ages 4-21 • Time to administer: Long form: 50-70 minutes, Short form (screening tool): 20-25 minutes • Resources: www.pearsonassessments.com
<p>Sensory Processing Measure (SPM):</p>	<ul style="list-style-type: none"> • Purpose: This assessment provides a complete picture of a child’s sensory processing difficulties at school, at home and in the community. The SPM assesses praxis, social participation and the five sensory systems. • Administration: Parent, teacher, other school personnel • Format: Norm referenced and standardized • Population: Elementary School-Aged children • Time to administer: 15-20 minutes • Resources: www.wpspublish.com
<p>Dynamic Occupational Therapy Cognitive Assessment for Children (DOTCA-Ch)</p>	<ul style="list-style-type: none"> • Purpose: Intended to provide a baseline measurement of cognitive abilities for children with special needs. This assessment is used to identify strengths and weaknesses, measure learning potential and examine thinking strategies. • Administration: Therapists • Format: Standardized Battery of performance tasks • Population: Children age 6-12 • Time to administer: 1.5 hours to administer, 20 minutes to score • Resources: http://service.maddak.com

Observation Template

**The following is a template that can be copied and utilized by occupational therapists and/or teachers for observation in school contexts.*

<i>Context Variables</i>		
EHP Contexts	Strengths	Challenges
Cultural		
Temporal		
Social		
Physical		

<i>Person Variables</i>		
	Strengths	Challenges
Sensorimotor Skills		
Processing Skills		
Coping Skills		
Interests		
Other		

Case Studies:

The following case studies provide examples of typical diagnoses seen in the elementary school population for children who may be in the mainstream classroom for all or some of the school day. These case studies demonstrate person and context variables displayed in an observation-based assessment that can be easily accessed and utilized by teachers. Based on the performance skill deficits, age, and diagnosis of the child, assessment tools are provided that can be used collaboratively by the teacher and the occupational therapist to determine appropriate goals and objectives for the student. Lastly, interventions that can be used within the classroom are provided according to the EHP model. These case studies provide a framework for how interventions may be developed collaboratively between the classroom teacher and the occupational therapist to promote positive outcomes for students across elementary school contexts.

Sensory Processing:

Ali is a second grader who has difficulties with sensory processing that is impacting her school performance. Ali has difficulty following directions in school and often seems unengaged while the teacher is presenting. Ali typically demonstrates good behavior in the mornings, however as the day goes on she begins to act out by throwing temper tantrums. Ali demonstrates sensory seeking behaviors throughout the school day and often gets in trouble for fidgeting, getting up out of her seat, and touching her friends too hard. During physical activities, Ali appears to be clumsy due to lack of body awareness when playing on the playground, and demonstrates poor handwriting and other fine motor skills, which often results in frustration and outbursts. Ali enjoys coloring, dressing up like a princess, and learning about animals. Her favorite subjects in school are math and science, and she enjoys the days that she gets to be the line leader so that she can see her environment and does not feel too close to her peers.

**The following is an example of an observation tool that may be used by the occupational therapist and/or the classroom teacher to gather data about the student within school contexts.*

<i>Context Variables</i>		<i>Assessments</i>
Cultural	<ul style="list-style-type: none"> • Difficulty following directions in class • Unengaged while teacher is presenting • Gets in trouble for fidgeting and getting out of her seat 	<ul style="list-style-type: none"> • SPM • CSEA
Temporal	<ul style="list-style-type: none"> • Better behavior in the mornings • Duration of time to complete quality assignment 	<ul style="list-style-type: none"> • Leiter-R
Social	<ul style="list-style-type: none"> • Sensory seeking behavior: touches friends too hard • Easily frustrated 	<ul style="list-style-type: none"> • SBA • SPM
Physical	<ul style="list-style-type: none"> • Likes to stand in the front of the line • Fidgets while she is at her desk 	<ul style="list-style-type: none"> • CSEA

<i>Person Variables</i>		<i>Assessments</i>
Sensorimotor Skills	<ul style="list-style-type: none"> • Poor fine and gross motor skills • Poor handwriting • Poor body awareness, clumsy 	<ul style="list-style-type: none"> • BOT-2
Processing Skills	<ul style="list-style-type: none"> • Poor sensory modulation due to hypo-reactive nervous system <ul style="list-style-type: none"> ◦ Demonstrates sensory seeking behaviors 	<ul style="list-style-type: none"> • SPM • CSEA
Coping Skills	<ul style="list-style-type: none"> • Easily frustrated, throws temper tantrums demonstrating limited coping skills 	<ul style="list-style-type: none"> • DOTCA-Ch
Interests	<ul style="list-style-type: none"> • Coloring • Dressing up like a princess • Learning about animals • Math, science • Rewards such as being the line leader 	<ul style="list-style-type: none"> • CSEA

Intervention Strategies to Increase Performance Range

Establish/Restore	Establish a schedule to place Ali's favorite activities in the afternoon to increase her engagement and promote more positive behaviors in the afternoon.	Suggestions for OT/teacher collaboration: The occupational therapist can make suggestions to move Ali's favorite activities to the afternoon, based on teacher's reports of Ali's poor behavior in the afternoons. The teacher will structure the schedule as she sees fit, and the occupational therapist will be available for consultation or feedback.
Alter	When Ali begins to become frustrated and lose attention during afternoon school tasks, she will have the option to go to the sensory room and complete the school task with a teacher's aide.	Suggestions for OT/teacher collaboration: The occupational therapist will educate the teacher about the importance of the sensory room and how it can be beneficial for Ali to learn same material in a different environment. The OT will leave it to the teacher's discretion on when to excuse Ali.
Adapt/Modify	Move Ali to the front of the classroom and make sure the teacher is making eye contact to see if Ali is attentive and listening to class instructions.	Suggestions for OT/teacher collaboration: The OT can provide the CSEA for the teacher to fill out regarding the sensory environment. The therapist and teacher can then set up a formal meeting to discuss the results and determine the best arrangement for the classroom to benefit Ali, and the other students.

Prevent	The teacher may provide Ali with a non-distracting class fidget to help her self-soothe during class without being disruptive to the other students.	Suggestions for OT/teacher collaboration: The occupational therapist can provide the teacher with a catalog containing sensory friendly products and allow her to select a fidget for Ali that she feels will be the least distracting for the class. The occupational therapist can offer to order the materials for the teacher.
Create	Build sensory breaks into the daily class schedule for all students.	Suggestions for OT/teacher collaboration: The occupational therapist will suggest the App “Brain Works”, which has recommended sensory break activities. The teacher can watch the OT lead the class through a sensory break and discuss with the OT about what the teacher likes or dislikes about the App and if it will be useful within the classroom. The occupational therapist can also provided optimal times for sensory breaks throughout the day.

For more information on Sensory Processing see Appendix E

Autism:

Mitchell is a fifth grade boy diagnosed with autism spectrum disorder (ASD). Mitchell experiences difficulty when transitioning from one activity to another or when his daily routine becomes disrupted. During recess, Mitchell often isolates himself from his peers. He is infatuated with dinosaurs, therefore spends his recess time playing with, or organizing his dinosaur collection. Mitchell is very good at math and history, however during class, Mitchell often blurts out, rather than waiting to be called on, which gets him into trouble and disrupts the class. In addition, Mitchell becomes very agitated when the teacher or classmates use the pencil sharpener, due to he does not like the sound, and begins to bang his head against his desk. Mitchell also does not like to go near the art room because he does not like to get his hands dirty and associates the art room with getting dirty.

<i>Context Variables</i>		<i>Assessments</i>
Cultural	<ul style="list-style-type: none"> • Blurts out during class • Bangs his head on the desk when he becomes frustrated 	<ul style="list-style-type: none"> • SPM • SBS
Temporal	<ul style="list-style-type: none"> • Difficulty transitioning • Becomes upset when his schedule changes 	
Social	<ul style="list-style-type: none"> • Isolates himself from his peers 	<ul style="list-style-type: none"> • CAPE • Play History
Physical	<ul style="list-style-type: none"> • Will not enter the art room 	<ul style="list-style-type: none"> • School Setting Interview

<i>Person Variables</i>		<i>Assessments</i>
Sensorimotor Skills	<ul style="list-style-type: none"> Does not like to get his hands dirty 	<ul style="list-style-type: none"> SPM
Processing Skills	<ul style="list-style-type: none"> Difficulty terminating tasks, difficulty adjusting to new workspaces, or using new materials, does not wait his turn to speak in class 	<ul style="list-style-type: none"> Leiter-R
Coping Skills	<ul style="list-style-type: none"> Poor- Mitchell acts out when he becomes frustrated by banging his head against the desk. 	<ul style="list-style-type: none"> Aggression Questionnaire BBRS
Interests	<ul style="list-style-type: none"> Dinosaurs, math, and history 	<ul style="list-style-type: none"> School Setting Interview

Intervention Strategies to Increase Performance Range

Establish/Restore	Help Mitchell identify internal responses that trigger his outbursts and help him to develop and utilize coping skills to use when he feels frustrated.	Suggestions for OT/teacher collaboration: The occupational therapist and teacher will work together to develop a list of positive coping skills. The teacher will have the list available for Mitchell to use in the classroom. The occupational therapist can provide the teacher with strategies to calm Mitchell down when he becomes frustrated and does not use his coping skills.
Alter	Allow Mitchell to stay in the regular classroom to complete artwork that does not involve getting his hands dirty without changing the task.	Suggestions for OT/teacher collaboration: Collaborate both with the regular classroom teacher and the art teacher to provide Mitchell with similar art tasks as the rest of the class, and provide systematic desensitization strategies to get Mitchell to enter the art room. Educate the teachers about Mitchell’s sensory issue.
Adapt/Modify	Modify the teacher’s class schedule by adding pictures so that Mitchell can visualize what activity he will engage in next to make transitions easier.	Suggestions for OT/teacher collaboration: The OT will suggest that the teacher provides multiple cues before terminating one classroom task and starting another so that Mitchell knows what to expect. The teacher and OT will review the classroom schedule together and the therapist can provide feedback and suggest transition periods.

Prevent	Encourage Mitchell to join the extracurricular math group to prevent social isolation.	Suggestions for OT/teacher collaboration: The OT can educate the teacher about the importance of social participation and provide strategies for getting Mitchell involved during class, or in extracurricular activities.
Create	Utilize a reward system for all of the students in the classroom to encourage them to raise their hand before speaking. For example, the teacher will place a star next to the child's name for raising his/her hand, once a child has 10 stars, they receive a prize.	Suggestions for OT/teacher collaboration: The OT will describe to the teacher the importance of utilizing universal design so that the reward system targets Mitchell's problem behavior without singling him out. The teacher will have the opportunity to decide what reward system to implement into his/her classroom.

For more information on Autism see Appendix B

ADHD:

Carlos is a fourth grade boy diagnosed with attention deficit hyperactive disorder (ADHD).

Carlos is unable to sit still in class for longer than 10 to 15 minutes, so he gets up without permission, which is against classroom rules. Within the fourth grade classroom, there are many pictures on the wall, and the teacher commonly catches Carlos looking around the classroom rather than attending to class. Carlos is frequently in trouble with his teacher, as he does not finish his homework assignments. Carlos often gets in fights with his peers, as he has limited coping strategies to control his feelings of frustration. Carlos loves to play soccer, baseball, or anything that keeps him moving. He expresses interest in playing with his peers, however due to his low frustration tolerance, Carlos does not have many friends. Carlos's favorite subject in school is math, which is demonstrated by his increased ability to attend during math time.

<i>Context Variables</i>		<i>Assessments</i>
Cultural	<ul style="list-style-type: none"> • Gets up in class without permission • Does not finish his homework assignment 	<ul style="list-style-type: none"> • SBS
Temporal	<ul style="list-style-type: none"> • Short attention span 	<ul style="list-style-type: none"> • Leiter-R
Social	<ul style="list-style-type: none"> • Fights with his peers • Does not have many friends 	<ul style="list-style-type: none"> • Aggression Questionnaire • BBR-2
Physical	<ul style="list-style-type: none"> • Distracted by the pictures on the walls and bright colors 	<ul style="list-style-type: none"> • CSEA

<i>Person Variables</i>		<i>Assessments</i>
Sensorimotor Skills	<ul style="list-style-type: none"> Fights with friends; has good gross motor coordination 	<ul style="list-style-type: none"> Aggression Questionnaire
Processing Skills	<ul style="list-style-type: none"> Unable to attend for longer than 10-15 minutes Attends to math related activities 	<ul style="list-style-type: none"> Leiter-R CAPE
Coping Skills	<ul style="list-style-type: none"> Poor frustration tolerance 	<ul style="list-style-type: none"> SFA SBS
Interests	<ul style="list-style-type: none"> Math, soccer, baseball 	<ul style="list-style-type: none"> CAPE

Intervention Strategies to Increase Performance Range

Establish/Restore	The therapist will have Carlos identify what makes him frustrated when playing with his peers then identify coping strategies he thinks he would use to help him not become as frustrated. Using these coping skills will help Carlos to establish friendships.	Suggestions for OT/teacher collaboration: The therapist will use co-teaching strategies to work with the teacher in discussing important coping strategies for frustration in the class. This will enable the children in the classroom to monitor themselves and remind their peers of good coping skills when they can see that a friend is becoming frustrated.
Alter	If Carlos is feeling agitated during recess, he may have the option to go to the gym and run around or play a game by himself until he calms down and feels able to play appropriately with friends.	Suggestions for OT/teacher collaboration: The OT will educate the teacher and the playground aides about the importance of Carlos getting rid of his frustration through physical activities away from friends.
Adapt/Modify	Provide Carlos with height adjusting desk to allow him to stand up during classroom activities and discussion and decrease distractibility.	Suggestions for OT/teacher collaboration: The occupational therapist will provide the teacher will recommendations of adjustable desks to use to allow Carlos to adjust his own desk when he feels the need to move. The occupational therapist may advise the teacher to move Carlos desk to an area of the room that is not distracting to the rest of the students.

Prevent	The teacher will remove some of the distracting colors and pictures in the classroom to prevent Carlos's distractibility during class.	Suggestions for OT/teacher collaboration: The occupational therapist may suggest that the teacher places artwork on a bulletin board that is outside of Carlos's line of vision during class.
Create	Groups to work on homework assignments the last 15 minutes of class to increase social participation and chance for students to get a head start on homework	Suggestions for OT/teacher collaboration: The OT will offer this idea to the teacher and the teacher can determine where it fits within the classroom schedule.

For more information on ADHD see Appendix A

CP:

Kaitlyn is a kindergartener who is diagnosed with cerebral palsy (CP). Kaitlyn uses a walker for ambulation and experiences difficulty moving around her classroom, as she is always bumping into things. Kaitlyn requires extra time to process verbal directions given in class, and needs additional time to complete her class work. Kaitlyn also has a classroom aide to assist her throughout the day. The classroom teacher notices that Kaitlyn's peers often stare at her and pick fun at her, resulting in Kaitlyn frequently being isolated from her peers during activities. In addition, Kaitlyn does not get to spend lunch with her peers, as she requires assistance during lunchtime and her aide takes her to a separate room to eat. Leading to Kaitlyn not being able to go to recess after lunch, due to time constraints. Kaitlyn loves to play on her iPad, and her favorite part of school is circle time.

<i>Context Variables</i>		<i>Assessments</i>
Cultural	<ul style="list-style-type: none"> Requires a classroom aide 	<ul style="list-style-type: none"> School Setting Interview
Temporal	<ul style="list-style-type: none"> Requires extra time to process and complete her classwork 	<ul style="list-style-type: none"> SPM DOTCA-Ch
Social	<ul style="list-style-type: none"> Does not have many friends, and is often isolated from her peers Gets picked on by her peers 	<ul style="list-style-type: none"> School Setting Interview SFA
Physical	<ul style="list-style-type: none"> Not enough room in the classroom to maneuver with her walker 	<ul style="list-style-type: none"> BOT-2 PDMS-2 CSEA

<i>Person Variables</i>		<i>Assessments</i>
Sensorimotor Skills	<ul style="list-style-type: none"> Requires walker for ambulation 	<ul style="list-style-type: none"> BOT-2 PDMS-2
Processing Skills	<ul style="list-style-type: none"> Slow cognitive processing 	<ul style="list-style-type: none"> DOTCA-Ch
Coping Skills	<ul style="list-style-type: none"> Find ways to interact with her peers 	<ul style="list-style-type: none"> School Setting Interview
Interests	<ul style="list-style-type: none"> Playing on her iPad, circle time 	<ul style="list-style-type: none"> CAPE

Intervention Strategies to Increase Performance Range

Establish/Restore	Establish social relationships with peers by being able to pick 2-3 friends at the end of the day to play a game on her iPad that requires taking turns.	Suggestions for OT/teacher collaboration: The OT will provide the resource “otswithapps.com” to help the teacher select appropriate apps for Kaitlyn and her peers.
Alter	Kaitlyn’s aide will begin to take her into the lunchroom 30 minutes early to begin to eat instead of in a separate room so Kaitlyn can eat lunch with her peers. She will also have time to go to recess by starting earlier.	Suggestions for OT/teacher collaboration: The occupational therapist will educate the teacher and the aide about the importance of social interaction and recess. The OT may work with the teacher to rearrange the classroom schedule so Kaitlyn does not miss out on any core classroom assignments, as well as arrange a spot for Kaitlyn to eat in the lunchroom.
Adapt/Modify	Arrange the desks and classroom equipment in a way that allows Kaitlyn room to ambulate anywhere with her walker without bumping into things.	Suggestions for OT/teacher collaboration: The OT and teacher can work together to design a classroom layout that will fit everyone’s needs.

Prevent	The OT can come into the classroom and educate the students about CP, as well as have Kaitlyn show and tell her walker to prevent her peers from staring and wondering why she has this walker.	Suggestions for OT/teacher collaboration: The OT can set up a time to come in, that fits the teacher's schedule. The OT can also educate the teacher about strategies to use when students ask about why Kaitlyn is different from the rest of the students.
Create	Create peer groups to engage in centers so all students are able to interact with one another.	Suggestions for OT/teacher collaboration: This is a universal design strategy that the OT may provide to the teacher to encourage inclusion during class activities, and the teacher may implement the strategy throughout the day where she sees fit.

For more information on CP see Appendix C

No diagnosis:

Karson is a third grade boy. Karson is frequently sent to the principal's office due to picking fights with his peers during recess and being disruptive in class. Karson is a smart boy and does not feel challenged by his classwork, resulting in finishing assignments before his peers and becoming a distraction because he taps his desk as he becomes bored. The teacher and principal have reached out to Karson's parents, however they are reluctant to address the issues due to Karson does not display these behaviors at home. Karson has a younger sister at home who has a disability and requires a lot of assistance, so Karson often feels that he is competing for attention. Karson is interested in cars and motorcycles and loves to play video games.

<i>Context Variables</i>		<i>Assessments</i>
Cultural	<ul style="list-style-type: none"> • Disruptive in class • Different behaviors in school and at home 	<ul style="list-style-type: none"> • SBS • BBRIS-2
Temporal	<ul style="list-style-type: none"> • Finishes classwork before peers 	<ul style="list-style-type: none"> • SFA
Social	<ul style="list-style-type: none"> • Feels his sister gets all the attention at home • Picks fights with his peers 	<ul style="list-style-type: none"> • Aggression Questionnaire
Physical	<ul style="list-style-type: none"> • Taps his desk 	<ul style="list-style-type: none"> • SPM

<i>Person Variables</i>		<i>Assessments</i>
Sensorimotor Skills	<ul style="list-style-type: none"> • Fidgets with boredom 	<ul style="list-style-type: none"> • SPM
Processing Skills	<ul style="list-style-type: none"> • Difficulty making good choices with his free time • Good cognitive processing 	<ul style="list-style-type: none"> • SFA
Coping Skills	<ul style="list-style-type: none"> • Difficulty coping with the attention his little sister requires due to her disability 	<ul style="list-style-type: none"> • SBS
Interests	<ul style="list-style-type: none"> • Cars, motorcycles and video games 	<ul style="list-style-type: none"> • CAPE

Intervention Strategies to Increase Performance Range

Establish/Restore	Develop a reward system with Karson that allows him to play video games with his peers on Fridays if he shows good behavior throughout the week.	Suggestions for OT/teacher collaboration: The OT will offer to take Karson and some of his peers to play video games so it does not disrupt the rest of the class. The OT and teacher could also create a system together to determine what behaviors will help him gain or lose points.
Alter	Provide Karson with the option to grab a book and move to the reading corner when he finishes his work so he is not distracting to the other students.	Suggestions for OT/teacher collaboration: The OT can provide various strategies to the teacher to help Karson self-modulate when he finishes his assignments and have her select which intervention she feels would be most appropriate for her classroom.
Adapt/Modify	Provide Karson with assignments that are more challenging to help decrease boredom within the classroom.	Suggestions for OT/teacher collaboration: The OT will provide the teacher with strategies to challenge Karson within the classroom. The OT can help identify underlying issues that are causing Karson's disruptive behaviors and the teacher can make changes to the curriculum with OT assistance and support.

Prevent	Give Karson a classroom job to provide him with a sense of responsibility that will keep him busy and allow him to be recognized for good behavior frequently throughout the day. This will prevent him from being disruptive in class, or feeling angry and starting fight with peers.	Suggestions for OT/teacher collaboration: The OT and teacher can strategize to determine what classroom jobs would keep Karson busy and provide him with a sense of responsibility. They may decide to utilize classroom jobs as part of their reward system.
Create	Implement parents day so each student's parents can be involved within the classroom for a day and help the teacher with classroom assignments and activities.	Suggestions for OT/teacher collaboration: The OT and teacher can work together with the school administration to plan parent's day, which will allow parents to see their kids within their school environments.

For more information on Mental Health within the school setting see Appendix D

CHAPTER V

SUMMARY

The purpose of this scholarly project, *Promoting Interdisciplinary Collaboration Across School Contexts: A Toolkit For Occupational Therapists*, was to create a toolkit that provided strategies and resources for occupational therapists to use while collaborating with elementary teachers and other school personnel. The literature review in Chapter II indicated the need for strategies to promote collaboration between teachers and occupational therapists due to the increased number of children with special needs in the mainstream classroom in recent years. There has been legislation in place that mandates equal opportunity for students with disabilities, that requires effort by both the teacher and the occupational therapist to uphold these standards. While the literature specifies numerous benefits to collaboration, there was a lack of evidence about how to achieve an effective collaborative relationship (AOTA, 2016; Kennedy & Stewart, 2011). Based on the findings of the literature, it was evident that occupational therapists that work in the school setting would benefit from these strategies to maximize collaboration with teachers and improve student outcomes across school contexts.

The authors' intent for this toolkit was to provide effective, easy to use strategies for occupational therapists to follow in developing a working relationship with teachers within the school. The authors focused on identification of specific barriers found in the literature, and provided strategies to overcome these barriers and optimize student outcomes through effective collaboration. The contents of the toolkit were organized and outlined in a way that was easy to

follow and can be applied to any student, or group within the school.

A limitation to this toolkit is that occupational therapists have not had the opportunity to utilize the strategies within their practice; therefore the effectiveness of the toolkit is unknown. In order to maximize effectiveness of this toolkit, feedback from occupational therapists and teachers who utilize the strategies provided would be considered and applied. In addition, the provision of more inclusive and descriptive case studies would increase the applicability to practice and offer more intervention ideas for occupational therapists to use in collaboration with teachers.

Implementation of this toolkit may be done by providing occupational therapists who work in a school setting with the toolkit and advocating for the need of increased interdisciplinary collaboration within the school. Providing formal and informal in-services within the school district will increase awareness of effective collaboration between the professions, and provide an opportunity for occupational therapists to become familiar with the resources available to them.

It is anticipated that this toolkit will assist occupational therapists to improve collaboration with teachers through structured strategies and interventions guided by the EHP model. The intent of this collaboration between teachers and occupational therapists was for students to increase their performance range across school contexts. Overall, the authors expect positive outcomes in the form of collaborative interdisciplinary relationships and student outcomes.

To measure the effectiveness of this toolkit, outcome measures in the form of a survey will be provided to occupational therapists that have chosen to implement the strategies provided within the toolkit. The survey will measure effectiveness, ease of use, and satisfaction. In addition, the survey will ask for recommendations or comments from the users. The results will be used to make changes to the toolkit to better meet the needs of elementary school-based occupational therapists.

It is anticipated that this toolkit will increase collaboration between the teacher and occupational therapist as well as increase performance range for the students within the cultural, temporal, physical and social contexts of the school. School-based occupational therapists will implement the strategies provided in the toolkit to their practice to overcome barriers of interdisciplinary collaboration. Occupational therapists will be able to identify the usefulness of the toolkit to teachers within the school setting. Implications for future research includes expanding this toolkit by providing more inclusive application of EHP across school contexts, and/or developing an assessment tool to assist the occupational therapist, teacher, or other school personnel in identifying person and context variables that should be addressed in optimizing student outcomes.

APPENDICES

APPENDIX A EDUCATIONAL MATERIALS: ADHD

Tips for Living

Understanding Attention Deficit Hyperactivity Disorder (ADHD)



About 3% of all school-aged children are estimated to have attention deficit hyperactivity disorder (ADHD), a disorder in which children are unable to pay attention, control their activity, and restrain impulsive behavior. These problems may interfere with a child's ability to hear or read instructions, complete school assignments, participate in games, and perform tasks at home. A diagnosis of ADHD is determined by a health professional based on observation of the child's behavior by parents, educators, and health professionals. Children with ADHD may have difficulty learning and participating successfully at school.

With the help of occupational therapy, a child can learn to master day-to-day skills and be engaged at school and at home. In the school system, occupational therapy is a related service under the Individuals With Disabilities Education Act (IDEA), and is designed to help a student with a disability benefit from special education. A child must be eligible for special education under IDEA before being considered for occupational therapy in the schools.

What can an occupational therapist do?

- **Evaluate** a child at home and at school to determine how ADHD is affecting the child's ability to perform assignments and participate at home.
- **Recommend** a program that addresses the physical, behavioral, and emotional effects of ADHD and identifies goals to help the child succeed.
- **Use** the intervention of sensory integration to modify the environment to decrease noise and distractions caused by visual, auditory, and tactile stimulation.

What can parents of children with ADHD do?

- **Learn** about ADHD and how it affects a child's ability to manage daily life.
- **Seek** professional help in providing the resources a child needs to learn to manage his or her own behavior.
- **Join** a support group for families with children with ADHD.

Need more information?

ADHD is a serious problem that should not go untreated. If you would like to consult an occupational therapist about your child's condition, practitioners are available through most hospitals, community clinics, and medical centers.

Occupational therapists and occupational therapy assistants are trained in helping both adults and children

- **Use** charts and checklists as a guide for children to complete daily tasks.
- **Break** school assignments and home chores into a two-step process: listening to and understanding instructions, and accomplishing the task.
- **Offer** minimal, low-key feedback for success and failure to reduce anxiety, frustration, and perfectionism.
- **Be consistent.** Establish rules for the child and maintain them throughout his or her schooling.
- **Provide** the child with activities outside the school environment. Consider noncompetitive physical activity, such as martial arts, swimming, and horseback riding.
- **Focus** on the child's strengths and abilities. Do not overpraise or overcriticize.

with a broad range of physical, developmental, and psychological conditions. Practitioners also help clients and their caregivers with strategies that can prevent injury and secondary complications, and support health and well-being. Contact your local health organizations for more information.

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 The Fund To
Promote Awareness of
Occupational Therapy

APPENDIX B EDUCATIONAL MATERIALS: AUTISM

Occupational Therapy's Role with Autism

Autism is a developmental disorder—typically diagnosed around age 3 years—that affects brain functions, specifically those areas that control social behaviors and communication skills. The National Institute of Child Health & Human Development uses the term *autism spectrum disorders (ASDs)* to refer to a group of disorders that includes autistic disorder (also known as “classic autism”), Asperger syndrome, and pervasive developmental disorders not otherwise specified (also called “atypical autism”).¹ However, the term *autism* is frequently used in the literature to describe all of the disorders in the ASD spectrum.

What Is the Focus of Occupational Therapy With Individuals With Autism?

Occupational therapy services focus on enhancing participation in the performance of activities of daily living (e.g., feeding, dressing), instrumental activities of daily living (e.g., community mobility, safety procedures), education, work, leisure, play, and social participation. For an individual with an ASD, occupational therapy services are defined according to the person's needs and desired goals and priorities for participation.

Occupational therapy services for individuals with an ASD include evaluation, intervention, and measurement of outcomes. Throughout the process, collaboration with the child or adult with autism, family, caregivers, teachers, and other supporters is essential to understanding the daily life experiences of the individual and those with whom he or she interacts. Occupational therapy services can focus on personal development, quality of life, and the needs of the family.

The occupational therapy evaluation process is designed to gain an understanding of the individual's skills—his or her strengths and challenges while engaging in daily activities (occupations). The occupational therapy intervention process is based on the results of the evaluation and is individualized to include a variety of strategies and techniques that help clients maximize their ability to participate in daily activities at home, school (if relevant), work, and in the community environment. Progress or a successful outcome is noted through improved performance (or adaptation), enhanced participation in necessary or meaningful daily activities, personal satisfaction, improved health and wellness, and successful transitions to new situations and roles.² These measures can help the individual, family, and team appreciate success and refocus and change priorities of the intervention plan as needed.

Occupational therapy practitioners help people with autism adjust tasks and conditions to match their needs and abilities. Such help may include adapting the environment to minimize external distractions, finding specially designed computer software that facilitates communication, or identifying skills they need to accomplish tasks.

Where Do Occupational Therapists and Occupational Therapy Assistants Work With Individuals With Autism?

Occupational therapy practitioners provide interventions to clients in the settings where they typically engage in daily activities, such as a child care center or preschool, school, home, worksite, adult day care, residential setting, and so forth. The role of the occupational therapy practitioner may be as a provider of direct services; as a job coach; or as a consultant to family members, educators, employers, or team members.



What Can Occupational Therapy Practitioners Do for People with Autism?

- Evaluate an individual to determine whether he or she has accomplished developmentally appropriate skills needed in such areas as grooming and play and leisure skills.
- Provide interventions to help an individual respond to information coming through the senses. Intervention may include developmental activities, sensory integration or sensory processing, and play activities.
- Facilitate play activities that instruct as well as aid a child in interacting and communicating with others.
- Devise strategies to help the individual transition from one setting to another, from one person to another, and from one life phase to another.
- Collaborate with the individual and family to identify safe methods of community mobility.
- Identify, develop, or adapt work and other daily activities that are meaningful to enhance the individual's quality of life.

Where Are Occupational Therapy Services Offered?

Pediatricians can help parents identify early intervention programs available through a state's Department of Social Services or Department of Health. These programs can refer young children and their families to occupational therapy and other needed services. Preschool and school-age children and youth (to age 21) may be eligible for occupational therapy services under the Individuals with Disabilities Education Act or Section 504 of the Rehabilitation Act. Services may also be available through local health centers, hospitals, private clinics, and home health agencies. Adults with an ASD who need occupational therapy services may find referrals through developmental disability programs, social services agencies, or state occupational therapy associations. Adults with an ASD may receive occupational therapy services at work, home, in community-based programs, and through medical care facilities.

Who Pays for Occupational Therapy Services?

Occupational therapy is a skilled health, rehabilitation, and educational service covered by private insurance, Medicare, Medicaid, workers' compensation, vocational programs, behavioral health programs, early intervention, and school programs. Services also may be covered through Social Security, state mental health agencies or those serving individuals with intellectual impairment, health and human services agencies, private foundations, and grants. Many providers accept private payments.

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OCCUPATIONAL THERAPY

Occupational therapy enables people of all ages to live to its fullest by helping them to promote health, make lifestyle or environmental changes, and prevent—or the better with—injury, illness, or disability. By looking at the whole picture—a client's psychological, physical, emotional, and social make-up—occupational therapy assists people to achieve their goals, function at the highest possible level, maximize or rebuild their independence, and participate in the everyday activities of life.



Tips for Educators



Help Students with Autism Achieve Greater Success in Academic Performance and Social Participation

Autism is a developmental disability that affects how the brain functions, and often impairs social skills development and communication. Occupational therapy practitioners work collaboratively with the school team to help students with autism to access, progress, and participate in the curriculum. They help students to achieve success in academic performance and social participation throughout the school day.

What Can an Educator Do?

☉ Ease Transitions

- **Provide** visual cues throughout the school day to prepare a student for changes in routine. For example, social stories can be introduced to rehearse and familiarize the student with concepts, schedules, and activities. Preliminary studies have shown that social stories are effective in defining appropriate behaviors (Reynhout & Carter, 2006). Picture boards also provide visual prompts to support students with communication difficulties.
- **Incorporate** activities and/or objects to help redirect the student's focus and bridge the transition from one event to another. Asking the student to lead the class down the hallway, turn off the classroom lights, or hold the hallway pass provides the student with a leadership opportunity. It also provides the student with a meaningful, cooperative task that benefits the whole class.
- **Utilize** written daily schedules, logs or checklists to increase the predictability of events for the student, which may reduce stress. Implications from preliminary studies are that increasing the predictability of activities and presenting information in smaller increments enables the student to better engage in tasks. (Ashburner, Ziviana & Rodger, 2008; Ganz, 2007).

☉ Monitor Sensory Needs

- **Observe** the child to see if he seeks sensory experiences in the classroom or if he avoids these opportunities. For example, some children may appear overwhelmed by bright lights, strong smells from the cafeteria, or working with sticky substances like glue. Share your observations with the occupational therapy practitioner and then collaborate to choose activities and equipment that will help the student manage sensory experiences. Findings from a systematic review indicate sensory interventions may result in positive behavioral effects in students (Banaiah, 2002).
- **Design** a space, within the classroom, which enables the student to reduce sensory input such as loud sounds from school bells or loudspeaker announcements. A quiet corner that includes an indoor tent, blanket, earphones for classical music, or beanbag chair may calm or soothe a student who may be experiencing too much stimulation. Findings from a systematic review support modifying the classroom environment proactively to calm students before they could become over-stimulated (Case-Smith & Arbesman, 2008).

☉ Address Mental Health Needs

- **Provide** opportunities throughout the school day to manage feelings in appropriate ways. For example, a picture of a traffic light can cue students to self-monitor and then strategize appropriate behavior through social stories and role-playing (Reynhout & Carter, 2006).
 - **Implement** a rewards system that reinforces positive behaviors. Establish a consistent method through a logbook or chart in collaboration with the family (Wilkinson, 2008). This positive feedback will enhance the student's self-esteem.
-

🌀 Develop Peer Relationships

- **Build** friendships through tasks that involve sharing or pairing up with a buddy. Preliminary studies have shown that utilizing typically developing peers as models of behavior may increase positive interaction (Smith, Lovaas, & Lovaas, 2002). Create whole classroom activities such as a letter writing campaign, bake sale or develop a class journal or magazine that engages all students to participate. Engage the child in tasks that facilitate interaction such as distributing books or papers during class time or playground equipment during recess.
- **Incorporate** music and art into activities to build communication skills and in accordance with the student's interests and ability. Collaborate with a variety of specialized instructional support personnel to choose appropriate activities such as participating in a chorus or painting a mural as a class project. Findings from a systematic review indicate that art activities can be an effective way to facilitate social interaction among students (Jackson & Arbesman, 2005).

Need more information?

Occupational therapy enables people to live life to its fullest by helping them prevent—or live better—after injury, illness, or disability. Occupational therapy practitioners provide service in school systems, hospitals, medical centers, and clinics. They are trained in helping people with a broad range of physical, developmental, and behavioral conditions. In addition to treating illness and disability, occupational therapy encourages wellness through a balance of healthy and meaningful life activities.

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Appendix C Educational Materials: Cerebral Palsy

The Role of Occupational Therapy in Providing Assistive Technology Devices and Services

Assistive Technology Defined

Technology is a common element in our everyday lives. The goal of occupational therapy is to enhance or enable meaningful participation in the occupations (activities) important to the clients served. Therefore, technology is a component of providing occupational therapy services across practice arenas. However, just because an item is technological does not mean that it is assistive technology. Conversely, not all items used as assistive technology fall within the common definition of technology itself. The Technology Related Assistance for Individuals with Disabilities Act of 1988 put forth the definition of assistive technology that is used in most regulatory language.

In the bill, assistive technology is defined as both a device and a service. An *assistive technology device* is any item, piece of equipment, or product system, whether acquired commercially, modified, or customized, that is used to increase, maintain, or improve the functional capabilities of individuals with disabilities. *Assistive technology services* include the evaluation of need, the process of acquiring the device, fitting or customizing the device, coordinating the intervention plan, and providing training and technical support to the user and related support personnel. Occupational therapy practitioners provide both assistive technology devices and services.



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Technology, Assistive Technology, and the Occupational Therapy Process

Practitioners use activity analysis in the occupational therapy process to meet the demands of each client's desired occupation in context. They consider the tools used to meet the demands of the occupation (activity) and consider the match between the skills and abilities of the client with the use of the tools. When these tools increase, maintain, or improve someone's functional capabilities, they meet the definition of assistive technology. If the tools typically used to perform an occupation do not align with a client's skills and abilities, the occupational therapy practitioner adapts or modifies them, or the way the individual uses them, to facilitate occupational performance. Therefore, providing assistive technology devices and services to support individuals with disabilities (and those who need assistance for a short-term illness or injury) and minimize barriers to function is a natural part of the occupational therapy process.

Based on their educational curriculum and clinical experience, occupational therapy practitioners have the knowledge and foundational skills to assess clients and provide assistive technology devices and services (American Occupational Therapy Association [AOTA], 2010). An important part of the occupational therapy practitioner role, based on observation and evaluation of the client's performance, is to make specific recommendations for the most appropriate assistive technology to facilitate improved functional ability. Matching the client's abilities, preferences, environmental contexts, and barriers to the technology device features is a distinct role that occupational therapy practitioners can fulfill, and which leads to productive outcomes for their clients.

However, this is often a collaborative multidisciplinary team process including consultation with other health care professionals on the team as well as educators, assistive technology device vendors, manufacturers, and of course, the client and family or caregivers. The rapid rate of change in available technology means that occupational therapy practitioners not only have to stay current for applications in their area of practice (AOTA, 2010), but they also must work closely with other professionals and particularly with relevant vendors as an advocate for

the client, when necessary, to support the assistive technology decision-making process. The occupational therapist can then provide specific documentation about the purpose of the technology, how it will be used, and a rationale for its necessity to inform and support a physician order and payment. In addition, occupational therapy practitioners must exercise care and ethical judgment when recommending or using emerging technology, as supportive evidence and recognized standards may be limited or non-existent.

Case Examples of Occupational Therapy in Assistive Technology Intervention

- A fourth grade student with cerebral palsy has difficulty participating in classroom reading and writing tasks because of limited motor control in his arms. The occupational therapist introduces many high- and low-tech options, including a word processor with word prediction to increase his writing efficiency and legibility; a cut out desk with supports for his forearms so he can access a keyboard; highlighters to mark selections on multiple choice tests; and premade labels to use in group tasks without having to write. He reads using a tablet computer with access to a federally funded repository for digital books, and he uses the text-to-speech feature when he is getting fatigued. These supports allow him to function and learn in his classroom.
- An 81-year-old widow with vision loss lives at home. An occupational therapist helps identify and implement a variety of supports to increase her function in the kitchen, including a tablet with a camera to photograph and enlarge labels and recipes; voice output on the tablet to help her search for recipes online; high-contrast dials for the oven and stove; and large-print cookbooks and measuring tools. These interventions allowed her to remain independent and safe in her home without additional assistance.
- A college student with cerebral palsy who uses a power wheelchair for mobility has classes at lab tables that are difficult to reach. He is unable to reach some cabinets and work surfaces in his dorm when seated. He also struggles with constipation and loss of bone density. After observing his daily routine around campus, his occupational therapist helps him select the components of an appropriate seating and mobility solution, including a standing feature so he can access the lab tables and storage in his room, facilitating independence in self-care. The occupational therapist recommends and documents the rationale for a new chair, including the medical benefits related to digestion, elimination, and musculoskeletal integrity, for the physician and payer.

Conclusion

Occupational therapy practitioners' understanding of occupational needs and performance, coupled with their skills in activity analysis and focus on achieving client goals, strongly support the use of diverse types of assistive technology within models of best practice. That perspective helps identify and integrate desired features of assistive technology solutions, as well as address potential barriers to integrating assistive technology into the client's daily routines.

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Living Life To Its Fullest
OCCUPATIONAL THERAPY

Occupational therapy enables people of all ages to live to its fullest by helping them to promote health, make lifestyle or environmental changes, and prevent—or the least with—injury, illness, or disability. By looking at the whole picture—a client's psychological, physical, emotional, and social make-up—occupational therapy enables people to achieve their goals, function at the highest possible level, maintain or regain their independence, and participate in the everyday activities of life.





Cerebral Palsy Special Needs Factsheet



What Teachers Should Know

Cerebral palsy (CP) affects muscle tone, movement, and motor skills (the ability to move in a coordinated and purposeful way). CP is usually caused by brain damage that occurs before or during a child's birth, or during the first few years of life.

How CP affects each person depends on which part or parts of the brain are involved. Some people have only mild impairment, while others are severely affected. For example, brain damage can be limited, affecting only the part of the brain that controls walking, or it can be more extensive, affecting muscle control of the entire body. Although CP doesn't get progressively worse, how it affects a person's body can change as children grow and develop.

About 500,000 people in the United States have CP, making it one of the most common congenital childhood disorders.

Because bullies often target students who seem "different," certain health conditions, including CP, can put kids and teens at higher risk of being bullied.

Kids and teens with CP may:

- have learning disabilities, visual impairments, hearing problems, speech problems, drooling issues, and behavior problems
- need braces, crutches, or a wheelchair to get around
- need help moving around in class or reaching things
- need assistive devices for writing and speaking
- have difficulty sitting still and have uncontrolled movements
- have difficulty with bladder and bowel control and may need to use a bathroom frequently
- have seizures
- need occupational therapy (OT), physical therapy (PT), and speech therapy during the school day

What Teachers Can Do

Many students with CP can do the same kinds of things that other kids and teens like to do, such as extracurricular activities, phys-ed, playing or listening to music, hanging out with friends, etc. Students with CP, however, may need a little more time to travel between classes and complete activities and tasks.

Make sure your classroom is easy to get around and free of obstacles.

Students with CP may need to miss class time for doctor visits or to see the school nurse to take medication. Make sure to give special consideration regarding missed instruction, assignments, and testing. In some cases, arranging for verbal responses in assignments and testing can be a good way to measure learning.


Educators, parents, doctors, therapists, and the students with CP should work together to develop and maintain the best treatment and education plans.

Be prepared for possible medical emergencies by planning ahead with parents in case your students with CP need advanced assistance.

Reviewed by: Mary L. Gavin, MD

Date reviewed: August 2013


Related Resources


 American Speech-Language-Hearing Association This group provides services for professionals in audiology, speech-language pathology, and speech and hearing science, and advocates for people with communication disabilities.


 Family Voices This website brings together families who have children with special health needs.

 United Cerebral Palsy This organization provides information about cerebral palsy (CP) as well as new research and therapies.


 Parent Teacher Association (PTA) The PTA encourages parental involvement in public schools.

 American Physical Therapy Association This organization provides information on physical therapy, from therapists in each state to current research.

 American Occupational Therapy Association (AOTA) The AOTA website provides national and regional news and information about occupational therapy and related issues.

 Office of Special Education and Rehabilitative Services, U.S. Department of Education This Web site provides information and lists programs dedicated to educating children with special needs.

 U.S. Department of Education This government site offers advice, links, homework help, and information for parents, teachers, and students.

 KidsHealth in the Classroom Free PreK-12 lesson plans, aligned to National Health Education Standards and based on expert-approved, age-appropriate articles.

Related Articles

Cerebral Palsy Checklist: Teens & Young Adults If your teen has cerebral palsy, there's a lot to know. This checklist makes it easy to determine what programs and services might be needed as your teen nears adulthood.

Cerebral Palsy Checklist: Big Kids If your child has cerebral palsy, there's a lot to know. This checklist makes it easy to determine what programs and services school-age kids with special needs might need.

Caring for Siblings of Kids With Special Needs Kids love their siblings. Often, those who have a brother or sister with special needs want to help. Here's how to help them feel loved and secure about their place in the family.

Dietary Needs for Kids With Cerebral Palsy Kids with cerebral palsy often have trouble eating. But with the right diet and feeding techniques, they can get the nutrients needed to thrive.

Physical Therapy Doctors often recommend physical therapy for kids who have been injured or have movement problems from an illness, disease, or disability. Learn more about PT.

Individualized Education Programs (IEPs) Some kids may be eligible for individualized education programs in public schools, free of charge. Understanding how to access these services can help you be an effective advocate for your child.

Cerebral Palsy Cerebral palsy (CP) is one of the most common congenital disorders of childhood. This article explains causes, diagnosis, prevention, treatment, and more.

504 Education Plans If your child has special needs in the classroom, he or she may be eligible for a government-supported learning plan.

Camps for Kids With Special Needs There are many camp choices for kids with special needs. From highly specialized camps to regular camps that accommodate kids with special needs, options abound.

Sending Your Child With Special Needs to Camp You've decided to send your child with special needs to camp this summer. Now what can you both do to get ready?

Disciplining Your Child With Special Needs Here's how to set boundaries and communicate your expectations in a nurturing, loving way.

Cerebral Palsy Checklist: Babies & Preschoolers If your child has cerebral palsy, there's a lot to know. This checklist makes it easy to determine what programs and services very young children with special needs might need.

Financial Planning for Kids With Special Needs These 10 steps can help take the anxiety and worry out of your child's financial future and make sure that your child will be taken care of even after you're gone.



Note: All information is for educational purposes only. For specific medical advice, diagnoses, and treatment, consult your doctor.

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APPENDIX D EDUCATIONAL MATERIALS: OCCUPATIONAL THERAPY IN SCHOOL SETTINGS

Occupational Therapy in School Settings

School occupational therapists and occupational therapy assistants are key contributors within the education team. They support a student's ability to participate in desired daily school activities or "occupations." They help children to fulfill their role as students by supporting their academic achievement and promoting positive behaviors necessary for learning. School occupational therapists (and occupational therapy assistants, under the supervision of the occupational therapist) support academic and non-academic outcomes, including social skills, math, reading and writing (i.e., literacy), behavior management, recess, participation in sports, self-help skills, prevocational/vocational participation, transportation, and more. Because of their expertise in activity and environmental analysis, practitioners are particularly skilled in facilitating student access to curricular and extracurricular activities. They focus on the students' strengths, and can design and implement programming to improve inclusion and accessibility, such as Universal Design for Learning. Additionally, they play a critical role in educating parents, educators, administrators and other staff members. They offer services along a continuum of prevention, promotion, and interventions and serve individual students, groups of students, whole classrooms, and whole school initiatives. They collaborate within the education team to support student success. In this way, occupational therapy practitioners can contribute within both general and special education.



Occupational therapy practitioners have specific knowledge and expertise to increase participation in school routines throughout the day. Interventions include:

- Conducting activity and environmental analysis and making recommendations to improve the fit for greater access, progress, and participation
- Reducing barriers that limit student participation within the school environment
- Providing assistive technology to support student success
- Supporting the needs of students with significant challenges, such as by helping to determine methods for alternate educational assessment and learning
- Helping to identify long-term goals for appropriate post-school outcomes
- Helping to plan relevant instructional activities for ongoing implementation in the classroom
- Preparing students for successfully transitioning into appropriate post-high school employment, independent living, and/or further education

Occupational therapy practitioners are key contributors within the educational team. They help to address both mental and physical health. They collaborate with a variety of partners, such as:

- Students, to help them to develop self-advocacy and self-determination skills in order to plan for their future and transition to college, career/employment, and community living; improve their performance in learning environments throughout the school (e.g., playgrounds, classrooms, lunchrooms, bathrooms); and optimize their performance through specific adaptations and accommodations

- Parents, to support their engagement with school activities such as attendance in individualized education program (IEP) meetings with cultural sensitivity, or to assist in homework management issues by monitoring stress levels and volume of work
- Educators and other school support staff, to offer curricular modifications to support diverse learning abilities and to meet state learning standards
- Paraeducators, to support child success and promote safety within the school environment such as reducing autism wandering on playgrounds (e.g., physical and behavioral assistance needs)
- Administrators, to provide training for students, staff, and parents, such as offering recess promotion strategies or contributing to anti-bullying initiatives, as well as to recommend equipment for schools and ways to modify existing buildings and curriculum to allow access for all

Occupational therapy services for students with special needs are determined through the IEP process. School-based occupational therapy is available for students who are eligible for special education. Occupational therapists complete evaluations and assessments, and work with other members of the school-based team to help determine what is needed for a student to receive a free, appropriate public education in the least restrictive environment. They collaborate with the team to identify a student's annual goals and determine the services, supports, modifications, and accommodations that are required for the student to achieve them, including addressing transition needs no later than 16 years of age. When the IEP team determines that occupational therapy is needed in order for a student to meet his or her annual goals, then occupational therapy should be included in the student's IEP. In some instances, students whose disability affects their participation in school but who do not qualify under the Individuals with Disabilities Education Act (IDEA), may be eligible to receive occupational therapy under other federal laws such as Section 504 of the Rehabilitation Act and the Americans with Disabilities Act.

Occupational therapy practitioners help to promote healthy school climates that are conducive to learning. They offer other valuable services to meet broader student behavioral and learning needs, along with systemic needs, by addressing students' mental health and participating in other school-wide initiatives such as positive behavior supports, response to intervention (RtI), and Early Intervening activities. In addition, occupational therapy practitioners are active participants in developing curriculums and programs; addressing school health and safety; identifying assessment accommodations and modifications; and developing violence prevention, anti-bullying, and other types of programs. In this capacity, occupational therapy practitioners support the needs of all students, including those without disabilities. For example, many schools use the occupational therapist's knowledge and expertise to assist in curriculum development for handwriting and social skills, or to recommend modifications to or design of classroom environments or assignments that help all students access and participate in school (i.e., implementing universal design for learning).

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OCCUPATIONAL THERAPY

Occupational therapy enables people of all ages the ability to follow by helping them to promote health, make lifestyle or environmental changes, and prevent—or the better with—injury, illness, or disability. By looking at the whole picture—a client's psychological, physical, emotional, and social make-up—occupational therapy assists people to achieve their goals, function at the highest possible level, maintain or rebuild their independence, and participate in their everyday activities of life.



Occupational Therapy and School Mental Health



What Is School Mental Health, and How Does It Impact Student Success?

Mental health can be defined as "...a state of successful performance of mental function, resulting in productive activities, fulfilling relationships with other people, and the ability to adapt to change and to cope with adversity" (U.S. Department of Health and Human Services, 1999). School mental health can be defined as any mental health service or support provided in a school setting (Kutash, Duchnowski, & Lynn, 2006).

Children need to develop positive interaction skills and appropriate classroom behavior so they can successfully participate in school. School is the place where children learn academics and develop social-emotional skills by making and keeping friends, coping with feelings and stress, learning to self-advocate, and interacting in groups.

Some children may have difficulty interacting with peers or maintaining self-control, leading to problems in making and keeping friends and paying attention in the classroom. Sometimes these problems are due to a mental illness and sometimes the cause of the troublesome behaviors is not clear. In order for a child to demonstrate appropriate classroom behavior, he or she may benefit from helpful routines for planning and organizing personal materials, tasks, and activities in order to pay attention and participate in activities with educators and classmates.

What Is Occupational Therapy, and How Do Services Address Students' Mental Health Needs?

In schools, occupational therapy practitioners support students to succeed in their daily routines including classroom, playground, lunchroom, and extracurricular activities.

An occupational therapy practitioner has a strong foundation in human development and activity participation. Occupational therapy practitioners have specialized knowledge and skills in

- social and emotional learning and regulation;
- task analysis, including sensory, motor, cognitive, and social components;
- assistive technology; and
- activity and environmental modifications.

Occupational therapy practitioners support a student's transition between activities, and from grade to grade and school

to school by helping build the capacity for school success through the development of study skills, self-care independence, problem-solving abilities, social skills, and vocational interests. Occupational therapy practitioners address the sensory needs of students as well as the aspects within the school environment that impact learning.

Occupational therapy services are used to help children develop productive habits and routines that support their physical, intellectual, and emotional health and growth. When children's abilities are well matched with the demands of an activity and the environment where they live, learn, and play, they can better cope with challenges and succeed in a variety of school activities.

Occupational therapy practitioners offer direct services to individuals and small groups, as well as interventions for whole classrooms. They also offer consultation to and collaboration with the entire school team (e.g., social workers, nurses, guidance counselors, speech-language pathologists) to support a student's learning, daily living skills, play and leisure activities, and beginning work skills. In addition, occupational therapy practitioners are often key members of child and adolescent mental health teams.

How Do Occupational Therapy Practitioners Collaborate With the School Team?

Occupational therapy practitioners support and collaborate with all members of the school team, including parents. They can help team members identify and implement modifications to activities and environments. These modifications may increase the potential for successful student participation in the classroom or in extracurricular activities.



Occupational therapy practitioners are frequently asked to introduce calming or organizing classroom strategies, such as breathing exercises for relaxation before test taking, to reduce stress and promote learning. These strategies are often developed to foster effective classroom routines. Practitioners may support carefully designed activities to provide graded opportunities to practice and build skills, abilities, and self-confidence.

When an occupational therapist evaluates a child in the school setting, the student's strengths, abilities, and needs are identified. The occupational therapist may collect information through formal and/or informal assessments, parent interviews, and/or a review of work samples. After the occupational therapist evaluates a child's motor, sensory, cognitive, and emotional needs and strengths, including observing the child's performance during school routines, he or she might work with other team members to introduce methods to help that child build skills needed for successful participation. Then the occupational therapy practitioner meets with the school team, including parents, to provide information about the student's level of function along with recommendations that support learning, socialization, improved functioning, and independence.

How Does the Occupational Therapy Practitioner Promote Mental Health in Students?

School-based occupational therapy is available for a broad range of students—those who are eligible for special education under the Individuals with Disabilities Education Improvement Act of 2004 (IDEA) as well as those who do not qualify for special education but require additional behavioral and/or academic supports in the general educational environment for school success. Through this prevention model, occupational therapy practitioners may offer whole-classroom strategies, support small groups of students, or work with individual students identified as "at risk" for functional and/or cognitive decline.

Table 1 provides examples of occupational therapy services within a public health model, including promotion, prevention, and intervention.

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Table 1. Occupational Therapy Under a Prevention Model

Whole School (all students supported)

- **Conduct** a workshop for educators and/or families on addressing sensory needs of all students, with or without identified disabilities.
- **Work** with teachers to create group projects that can bridge academics and student needs for socio-emotional growth, as well as accommodate different learning styles.
- **Design** a "quiet area" within a classroom that may include alternative seating to calm and organize the student who is easily distracted or prone to emotional outbursts.
- **Help** teachers develop individualized goals for each student based on individual needs (strengths; challenges; outside interests; sensory, cognitive, and social skills) and create strategies to creatively address these goals during class time.

Targeted Groups (at-risk* students supported)

- **Organize** a lunchroom or playground buddy group to promote social skill development and build peer relationships.
- **Consult** with educators and recommend strategies to support a student who is struggling to complete classroom assignments.
- **Facilitate** the development of social skills and meaningful activities for at-risk students via therapeutic games, group work, exploration of hobbies, etc.

* "At-risk" refers to individual issues that could interfere with learning.

Individual Interventions (high-risk students supported)

- **Recommend** schedule modifications to reduce stress or anxiety (e.g., additional opportunities for creative expression or physical activity).
- **Conduct** screenings or assessments to help develop a behavioral intervention plan.
- **Develop** a meaningful functional activity for greater self-efficacy and social participation.
- **Modify** classroom environments and activities as needed to promote and support student learning.

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For more information, contact the American Occupational Therapy Association, the professional society of occupational therapy, representing nearly 36,000 occupational therapists, occupational therapy assistants, and students working in practice, science, education, and research.

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APPENDIX E

EDUCATIONAL MATERIALS: SENSORY PROCESSING

Addressing Sensory Integration and Sensory Processing Disorders Across the Lifespan: The Role of Occupational Therapy

Sensory integration involves perceiving, modulating, organizing, and interpreting these sensations to optimize occupational performance and participation. Well-regulated and appropriately functioning sensory systems contribute to important outcomes in social-emotional, physical and motor, communication, self-care, cognitive, and adaptive skills development and maintenance. Deficits in sensory integration can pose challenges in performing activities of daily living (ADLs), in addition to development, learning, playing, working, socializing, and exhibiting appropriate behavior (Schaff & Smith Roley, 2006). Sensory integration and modulation disorders often lead people to have extreme over reactions to what others consider mild stimuli, or to completely shut down and disengage. Differences in interpretation of stimuli can impact motor skills and coordination, further limiting engagement and participation. The sensory integration theory and intervention methods researched and developed by A. Jean Ayres, PhD, OTR/L, provide a neuroscience-based approach to addressing sensory integration concerns. Additional approaches emerging from Ayres' theory are also used to support sensory functions.



Without intervention, issues in sensory integration continue into adulthood and have been reported to impact work performance, relationships, and general functional abilities (Kinnealey, Koenig, & Smith, 2011). Entry-level therapists are able to address the immediate impact of sensory processing dysfunction on daily activities and behavior while therapists with advanced training in sensory integration are able to provide intervention that targets the underlying neurobiological processes involved in sensory processing and integration to affect long-term outcomes.

Overview of Occupational Therapy Interventions

- Collaborate with families, physicians, nurses, speech-language pathologists, physical therapists, psychologists, teachers, employers, and other professionals to determine the need for specialized evaluation and intervention.
- Identify and modify sensory and environmental barriers that limit performance and participation in everyday activities, as well as individual strengths and supports.
- Teach and model activities to support sensory, motor, and behavioral needs.
- Identify and provide adaptive sensory and motor strategies and interventions using a variety of sensory approaches to facilitate full participation in daily routines and social interactions.
- Help raise an individual's self-awareness of the impact of sensory and motor factors on everyday activities and real life situations, and provide ways to counter sensory processing challenges.

Working With Specific Populations

Occupational therapy practitioners address sensory integration and sensory modulation disorders across the lifespan and in all environments where clients function through a strengths-based approach to enhance existing skills, while facilitating the carryover of new skills and behaviors into additional situations. Occupational therapy intervention can benefit clients with the following types of issues:

- *Infants and toddlers* at risk for developmental problems or who have disabilities. Occupational therapists identify sensory and motor difficulties and provide interventions to facilitate effective self-regulation (wake-sleep cycles, alertness level, self-soothing), motor development, and adaptive behavior. These interventions allow children to focus on successful occupational performance in areas essential for development, such as play, sleep, ADLs, mealtime routines, and socialization (Ayres, 2005; Schaff & Smith Roley, 2006).
- *School aged children* with sensory integration problems. A variety of sensory-based approaches can address life skills, participation, and behaviors needed at home, in the community, and in the classroom. In addition to direct intervention, modifications to the home and classroom environments may be recommended to assist children with participating in daily routines, being independent with self-care skills, progressing at school, playing, making friends, and focusing in order to learn (Ayres, 2005, Schaff & Smith Roley, 2006).
- *Adolescents and young adults* with a fear of movement, sensitivity to touch, poor motor planning, or decreased awareness of body position in space. Sensory integration problems may interfere with age-appropriate life activities such as learning to drive, making vocational choices, engaging in leisure activities, and developing independence and romantic relationships. Practitioners may provide direct occupational therapy interventions to address sensory integration and modulation issues and/or may provide accommodations and education to facilitate and improve an adolescent's functioning. As these young people transition into lifelong work and leisure experiences, occupational therapy practitioners can play an important role in identifying and supporting successful performance in these areas (Kinnealey et al., 2011).
- *Adults of all ages* with sensory processing disorders. Many adults have never been diagnosed, so they haven't had the opportunity to develop coping skills and adaptive performance mechanisms. Many of these adults have trouble with interpersonal relationships, vocational skills, leisure activities, and general quality of life. Occupational therapy practitioners can provide direct services, or they can offer accommodations and supports. For example, an adult who is easily distracted at work may benefit from an occupational therapist who works with the client and employer to recommend modifications such as headphones if feasible, or environmental adaptations such as moving the client's desk to minimize external sensory input. Adults without healthy leisure activities could also benefit from an occupational therapist who can analyze their sensory needs, identify their strengths, then offer options and supports that promote engagement (Kinnealey et al., 2011).

Conclusion

Occupational therapy services for sensory integration and processing problems are available in schools, occupational therapy clinics and facilities, and through referral from a physician. After an initial evaluation, occupational therapists work closely with the individual and family members to create a focused intervention plan to promote occupational performance and help individuals maximize participation in daily living activities.

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Living Life To Its Fullest[®]

OCCUPATIONAL THERAPY

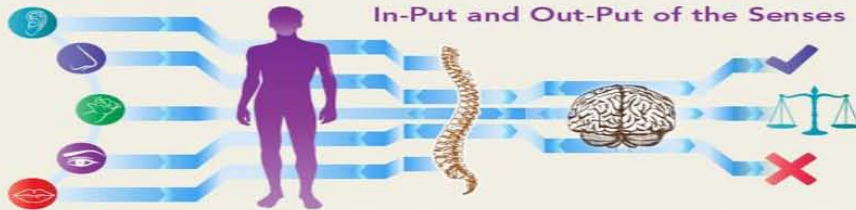
Occupational therapy enables people of all ages live lives to fullest by helping them to process health, make change or environmental changes, and prevent—or live better with—injury, illness, or disability. By looking at the whole picture—a client's psychological, physical, emotional, and social make-up—occupational therapy enables people to achieve their goals, function at the highest possible level, maintain or rebuild their independence, and participate in the everyday activities of life.





What Is SPD

Sensory Integration or Sensory Processing Disorder (SPD) is when there is a dysfunction in the way the nervous system receives messages from the senses and turns them into responses. Whether you are eating chicken nuggets, sitting in class listening to the teacher or coloring with a crayon, your successful completion of the activity requires processing sensation or sensory feedback.



1. Outside world (environment) enters inside world (body, CNS) through the sensory receptors
2. The peripheral nerves take the info to the spinal cord
3. The info goes then to the brain via nerve tracts
4. Over-arousal: superfluous sensory info passes through the brain "filter" causing excitement, confusion, and distractibility
5. Under-arousal: insufficient sensory info gets processed in the brain, causing absence of mind, delay, and accidents



Hypo-reactive nervous system is one where the child has decreased arousal and it takes longer for the child to "feel" the sensation.

Hypo-reactive nervous system

- Under-reactive to touch and may prefer heavy touch to light touch
- Under-reactive to sounds such as a mom or teacher calling his name
- Under-arousal resulting in looking lazy, open mouthed posture, may look mushy (low tone) like a teddy bear, may often appear tired
- Speaks loudly due to modulation issues with lack of proper sensory feedback system
- May appear clumsy or disorganized as body awareness may be lower



Hyper-reactive nervous system is one where the child has increased arousal and it is difficult for the child to tune out sensory input and provide proper output.

Hyper-reactive nervous system

- Overly sensitive to touch
- Gets too close to people
- Hyper-reactive to smells
- Notices sounds that others tune out (seems easily distracted)
- Able to tolerate vestibular input like spinning and running around for long periods of time
- Hyper-sensitive to other people's touch and clothes which may feel very uncomfortable



Signs of SPD

- Difficulty staying in line
- Laying on the floor during circle time
- Hugging too tightly
- Sensitive to touch
- Aversion to foods with certain textures
- Won't wear certain clothes that feel hard or too long or too tight
- Down't like tags on clothing
- Clumsy
- Has a meltdown at parties or lunchroom
- Scared of slides (heights) at the playground
- Walks on toes
- Distractible
- Not reacting to someone calling him because he may have not have processed it
- Talking loudly

Solutions For SPD



Home

- ✓ Set routines
- ✓ Break tasks down
- ✓ Speak to your child when you know you have his attention and he can process it
- ✓ Use visuals such as calendars and lists for bedtime routines
- ✓ Use a timer for commands he must meet
- ✓ Be consistent
- ✓ Apply appropriate consequences



School

- ✓ Supply a fidget bin to keep the child busy if he needs to be moving or aroused
- ✓ Use visual schedules
- ✓ Make sure the child is listening and processing before you expect a response
- ✓ Have the child move before requiring the completion of a task
- ✓ Allow child to preview work the night before at home



Pediatric Therapy

- ✓ Join social groups
- ✓ Set goals
- ✓ Learn to function
- ✓ Use sensory strategies to help arouse or calm the nervous system
- ✓ Increase strength so that tone is efficient in order for child to have better body awareness and thus increased attention
- ✓ Support and advocate for parents at home and school



For more on SPD including videos, checklists, webinars and answers to your questions visit:

www.SPDIInfographic.com

Provided by North Shore Pediatric Therapy www.NSP4kids.com (877) 486-4140

APPENDIX F EDUCATIONAL MATERIALS: UNIVERSAL DESIGN

Occupational Therapy and Universal Design for Learning

Universal design for learning (UDL) addresses access to learning and the curriculum for all students, not just those identified as having disabilities. Just like universal design in architecture, UDL applies the principles of equal access, flexibility, simplicity, perceptibility, and efficiency to both the educational environment and to the process of teaching and learning. The educational curriculum and training of occupational therapy practitioners includes knowledge and skills related to task and activity analysis, environmental adaptations and modifications, and assistive technology, which makes them uniquely qualified to guide others in the application of UDL within educational settings.



What is Universal Design for Learning?

Federal education law defines UDL as:

...A research-based framework for designing curriculum—including goals, methods, materials, and assessments—that enables all individuals to gain knowledge, skills, and enthusiasm for learning. Universal design for learning provides curricular flexibility (in activities, in the ways information is presented, in the ways students respond or demonstrate knowledge, and in the ways students are engaged) to reduce barriers, provide appropriate supports and challenges, and maintain high achievement standards for all students, including those with disabilities. (Higher Education Opportunity Act, 2008)

Rose and Meyer (2002) developed the principles of UDL based on brain research that describes the process of learning as the interaction of three neuronal networks: the recognition, strategic, and affective networks. The **recognition network** helps identify patterns of sensory information, or the “**what**” of learning. The **strategic network** helps plan, execute, and monitor how we think and move, governing “**how**” we learn. Finally, the **affective network** determines the importance and meaning of what we’re learning and thus engages us, determining “**why**” we learn, or why not. Classroom learning generally consists of presenting information to students (the what), expressing and demonstrating that information by students (the how), and engaging with the learning process (the why). UDL emphasizes the use of multiple and flexible ways of representing, expressing, and engaging with information so that all students can participate and find success in learning—drawing on their own unique combination of strengths, weaknesses, and preferences. Recent updates in the guidelines for UDL focus less on disability and more on the diversity and variability of learners across the lifespan (Hall, Meyer, & Rose, 2012).

What Does UDL Look Like, and Why is it Important?

UDL promotes the use of both mainstream and specialized technology to provide students and educators with flexible options for accessing information. For example, students who have difficulty reading printed text because of a visual impairment or reading disability might benefit from using the digital version of a novel or textbook on a computer or text reader that can read aloud. Those students just learning English or who have language processing disorders might find help in comprehending text by using embedded word definitions, concept explanations, foreign language translations, or animated coaching features. In addition, students who have difficulty turning pages may use adapted switches to navigate through a digital text.

Likewise, students who have difficulty demonstrating their learning through writing or speaking can use a variety of computer tools, like spell- and grammar-checking, word prediction, or speech-to-text software, and concept-mapping tools to respond to assignments. Both low- and high-tech strategies for goal setting, planning, and implementing

strategies for school work can help students who have difficulty staying on course to complete educational tasks. Evidence-based strategies for enlisting students' maximal engagement and participation in learning include scaffolding, which is explicitly tying new information to what a student already knows; providing options for individual choice and autonomy; and giving students tools for managing frustration. Occupational therapy practitioners look at the student's skills and barriers to performance, the environment and context, and the learning task itself, then make appropriate modifications or provide supports to facilitate learning.

The Occupational Therapy Role in UDL

Occupational therapy practitioners work in a variety of educational settings to support the participation of children and youth in a wide range of academic and non-academic activities. The support that occupational therapy practitioners provide includes direct service to students, as well as training and consultation with parents, educators, administrators, and other school staff. Of the many tools that practitioners can use in this role, one of the most powerful and far reaching is knowledge of the principles and strategies of UDL.

An important role for school-based occupational therapy practitioners includes consultation to educators and administrators in addition to direct services to students with disabilities. In addition, school-based occupational therapy practitioners support the general population of all children, with and without disabilities, by identifying and recommending flexible options for teaching and learning activities. This includes the ability to observe and assess students' performance skills and patterns, evaluate the influence of context and environment on performance, and analyze activity demands.

Knowledgeable and experienced occupational therapy practitioners can provide training to educators, parents, other related services personnel, and students in the use of mainstream and assistive technologies. They can demonstrate how to use the flexible features of computer operating systems and applications to change the appearance of computer displays, the speed of response, features of keyboard and mouse inputs, and mode of visual or auditory output. They can recommend specialized hardware and software for reading and writing, and help students access the range of academic and social networking opportunities. Occupational therapy practitioners can also identify features of the environment that support or interfere with students' ability to benefit from classroom activities and recommend strategies to enhance participation.

Conclusion

Occupational therapy practitioners can play an important role in supporting implementation of UDL principles in the educational setting. They utilize their knowledge base, activity analysis, and adaptation skills to recommend, train in, and apply technology and other methods to facilitate learning and performance in the context of the classroom.

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Living Life To Its Fullest[®]

OCCUPATIONAL THERAPY

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