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Investigating Use of the Transdisciplinary Approach in the Public School System: Assessment of the Interaction Between the Physical Therapist and the Regular Education Teacher

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**INVESTIGATING USE OF THE TRANSDISCIPLINARY APPROACH IN THE
PUBLIC SCHOOL SYSTEM: ASSESSMENT OF THE INTERACTION
BETWEEN THE PHYSICAL THERAPIST AND THE
REGULAR EDUCATION TEACHER.**

BY

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THESIS

Submitted to the Department of Physical Therapy at Grand Valley State University
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1995

Investigating Use of the Transdisciplinary Approach in the Public School System: Assessment of the Interaction Between the Physical Therapist and the Regular Education Teacher. Bunker, J. C. & Wolfis, J. M. (Grand Valley State University, Allendale, MI), unpublished master's thesis, 1995.

The purpose of our research was to determine the extent that physical therapists utilize components of the transdisciplinary approach in their interaction with regular education teachers when working with children kindergarten through sixth grade who participate in regular education classes.

325 surveys were distributed to physical therapists in the Midwest region of the United States who were Pediatric Section members of the American Physical Therapy Association and who also worked in a school environment. 46% of the surveys were returned and met our inclusion criteria. Frequency and Pearson chi-square tests ($p < 0.05$) were used for data analysis.

We had hypothesized that components of the transdisciplinary approach were not being utilized by physical therapists in their interaction with the regular education teacher. Our results showed that 28.7% of the respondents indicated use of the transdisciplinary approach. In regards to specific components of this approach, 41% of the respondents reported presence of a written philosophy. 9% of the therapists reported meeting on a weekly basis as suggested by the transdisciplinary approach. 20% of the respondents use a transdisciplinary goal setting strategy. 39% stated that both the therapist and the teacher are present at 75-100% of team meetings. 72% of the therapists document every treatment session as suggested by proponents of the transdisciplinary model. 11% of respondents stated that therapy notes are reviewed by the regular education teacher and 28.5% of the therapists reported that teams keep notes in a central location that can be easily accessed by all team members.

We concluded that therapists are beginning to utilize components of the transdisciplinary approach in the school setting. We also found that many of the therapists have a desire to increase the interaction between themselves and the regular education teacher but find that time and availability constraints cause the ideal interaction to be unrealistic.

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Chapter One

Introduction

History of Public Education for Students with Disabilities

The public education of children in the United States has a well developed history. In the past, the school system was focused on the education of normally developing children. In 1975 the opportunity for children with special needs to have access to public education was altered by the passage of Public Law 94-142 (PL 94-142), or the Education for All Handicapped Children Act (EHCA). Before implementation, much of the education available to disabled students was in self-contained medical and educational facilities which specialized in working with children with disability (Pelovello & Sullivan, 1981) In 1991, this Act was amended and renamed the Individuals with Disabilities Education Act (IDEA). This revision can be found in Public Law 101-476 (Efftgen & Klepper, 1994; Mayhew, 1994; Pelovello & Sullivan, 1981).

The legislation surrounding the enactment of PL 94-142 was the result of lobbying by parents, educators, and other advocates for the rights of disabled children. One landmark case argued before the Supreme Court during this time that helped to lead the way toward mandating equal educational opportunities for all children with disabilities. In this case, Mills v. Board of Education of the District of Columbia (1972), education was defined as "more than reading, writing, and arithmetic...that indeed, education could be learning to dress oneself, or even becoming toilet trained" (p. 36).

In response to this concern for change, PL 94-142 was enacted by Congress in 1975. This law was constructed in order to "insure that all handicapped children have available to them a free appropriate public education which includes special education and related services to meet their unique needs" (United States Congress, 1975).

Under Public Law 94-142 (United States Congress, 1975), related services are defined as "transportation, and such developmental, corrective, and other supportive

services (including speech pathology and audiology, psychological service, physical and occupational therapy, recreation, and medical and counseling services) as may be required to assist a disabled student to benefit from special education" (p. 34). The provision of these related services expands traditional definitions of special education to include a number of services that had previously not been a part of the educational process (Tada, Harris, & Bohmert, 1993).

Today, with increased legislation being passed to assist those with disabilities such as the Americans with Disabilities Act passed in 1992, those with physical disabilities are now recognized as more independent and capable of productive living than ever before. In order to encourage a positive view of these individuals in the school setting, one of the major provisions of PL 94-142 (United States Congress, 1975) states that special education and related services are to be provided to the student in the least restrictive environment (LRE). This means that the student should be placed in an educational setting that allows the maximal amount of direct interaction with those students who are non-disabled while maintaining appropriate and quality service intervention. Under this provision, states have been required to provide a range of placement alternatives for students with disabilities. The regular education classroom is the least restrictive setting and therefore the most optimal.

In order to encourage a least restrictive type of placement, PL 94-142 states that students can not be removed from the regular classroom without good reason. According to the more recent provisions of IDEA (United States Congress, 1991), good reason is defined as the following:

...to the maximum extent appropriate, children with disabilities...are educated with children who are not disabled, and that special classes, separate schooling, or other removal of children with disability from the regular educational environment occurs only when the nature or severity of the disability is such that education in

regular classes with the use of supplementary aids and services cannot be attained satisfactorily. (p. 32)

The LRE provision that was established under PL 94-142, resulted in a large increase in the number of students being served in the regular classroom setting. However, in recent years the effectiveness of this system in serving all children with disabilities fairly has been challenged. The most influential challenge came from the former Assistant Secretary for the Office of Special Education and Rehabilitative Services, Madeline Will. Her concern was over the efficiency and the dual special education and regular education framework which had been implemented since the passage of PL 94-142. In a 1985 speech, Will called for an educational partnership in which special education and regular education teachers "cooperatively assess the educational needs of students with learning problems and ...cooperatively develop effective educational strategies for meeting those needs." Her suggestion was one in which there would be a unified system that would accept all students with mild disabilities, including both mental and physical, into the regular educational setting. This increased concern over the partnership between the two types of educators became known as the Regular Education Initiative. Will believed that such a system would improve the education of students by joining the efforts of the special and regular education personnel (Fishbaugh & Hecimovic, 1994; Mayhew, 1994).

Another term that arose from the mandates of PL 94-142 was mainstreaming. As defined, mainstreaming is participation by the disabled student in any or all activities offered in a regular education classroom. Mainstreaming is not synonymous with LRE. Mainstreaming refers directly to the regular educational setting whereas LRE may vary depending on the specific needs and constraints of the child.

Mainstreaming can be implemented at numerous levels and is dependent upon each child's particular needs and constraints. For example, for one child, mainstreaming may include only art class or lunch room activities while for another it may mean total

integration into the regular education classroom activities. PL 94-142 does not mandate that all children be mainstreamed. However, this is preferred because the regular educational classroom is considered the most optimal environment for the child assuming all of their needs can be satisfactorily met (Pelovello & Sullivan, 1981).

Although the concept of mainstreaming continues to be used in literature, a new term has surfaced to describe the changes resulting from the new provisions mandated by the Regular Education Initiative and IDEA. The term used is inclusion. The definition of inclusion varies greatly in the literature but is generally used to describe a means of addressing the needs of the special education student while allowing opportunities for success in the regular educational setting through collaborative efforts of the special education teacher, regular education teacher, and related service personnel.

In a 1994 article, Ryan attempts to clarify the differences between the terms mainstreaming and inclusion. According to Ryan, inclusion is more than mainstreaming. Under inclusion, the special education teacher is required to provide support services to regular education teachers within the regular classroom setting. Mainstreaming requires the child to meet the essential academic elements of his or her particular grade level in order to be allowed into the regular classroom setting. Under inclusion, a child is required to meet only the IEP goals, which may or may not include the essential elements of his or her grade level. Ryan (1994) states that the "ideal inclusion student is one who is progressing according to his or her IEP, is not adversely affected by being in the regular classroom, and does not hinder other students as they learn together" (p. 262).

Inclusion is considered an extension of the concept of mainstreaming which was initiated with PL 94-142. Because the concepts of inclusion are relatively new and continue to be modified, the term mainstreaming will continue to be used throughout the remainder of this research paper to describe the placement of a child within the regular education setting.

Evaluating the Need for Special Education Services

If a child is thought to be in need of evaluation for special education services, a referral for a formal evaluation of the student can be requested by the local school district. A parent may also request an evaluation of their child. The school is then required to provide a comprehensive formal evaluation of the student in order to determine whether special education services are needed and what type of service would be most beneficial.

The evaluation is made by a team who assess a variety of areas related to the child's function. These include social, emotional, intellectual, educational, and physical findings. The results of all tests are used to formulate a decision regarding the child's placement into special education and related services (Pelovello & Sullivan, 1981).

Once the need for special services has been demonstrated, an Individualized Educational Program Committee (IEPC) is developed to determine what type of services would best suit the needs of the child. According to the Rules and Regulations published by the Federal Register for PL 94-142, the committee is required to include the child's parents, the child (if appropriate), the child's teacher, a representative besides the teacher who is responsible for overseeing the special education process such as a principal or superintendent, an evaluator in the case in which the testing has been performed by someone outside the public agency, and "any other persons considered appropriate by the professional representatives or parents" (Turnbull, Goldstein, & Strickland, 1978). Examples of other persons may include professionals such as a physician, psychologist, speech or language clinician, occupational therapist or physical therapist. However, inclusion of various professionals will vary with each case and depend solely on the individual needs of the child.

It is the responsibility of the committee to develop an Individualized Educational Program (IEP) for each child who is eligible for special education services (Pelovello & Sullivan, 1981). The team then formulates goals and objectives for each child. There are several requirements of the IEP. They include a statement about the child's present

function, annual goals including short-term instructional objectives, a statement of the specific educational services to be provided to the child and an estimation of the duration of these services, and objective criteria and procedures for evaluation to ensure that objectives are being achieved. The extent to which each child will be able to participate in the regular education classroom will also be determined by the team. All special education and related services to the disabled child must be in accordance with the IEP (O'Neil & Harris, 1982).

The job of the IEPC is not complete once placement decisions have been reached. The committee continues to monitor the child's progress through annual review of the IEP. At this time decisions are made regarding potential reassignment of the student to general education, movement to different programs, and addition or deletion of services. In addition, once every three years, the child's eligibility to continue with special education and related services is evaluated by the IEPC (Pelovello & Sullivan, 1981).

Effects of PL 94-142 on Professionals Within the School Setting

Because of the emphasis on mainstreaming brought about by the law, specific roles and relationships were expected to be established between related service personnel and regular education teachers which had never before been defined. For the purpose of our research we have chosen to focus specifically on two members of the team; the physical therapist and the regular education teacher. In accordance with the law, both professions are expected to share the responsibility of the child's educational needs.

One vital aspect of working in the educational setting under the mandates of PL 94-142 is the ability to function within a team. According to Giangreco (1985), "a team is a group of people who are striving to attain the same priority goals, with each team member using his or her unique skills to assist in the realization of those common goals". Three approaches have commonly been described in the literature which attempt to enhance the coordination of various disciplines within the school system. The three

models most frequently described are the multidisciplinary, interdisciplinary, and transdisciplinary models. Each of these models is defined differently and therefore the level of interaction among disciplines will vary depending on which approach is utilized. Literature published on use of specific team approaches continues to surface today, two decades after the law was passed. However, this literature continues to demonstrate a lack of continuity as to which type of service delivery approach is presently most utilized within the school system.

Aims Of Research Study

PL 94-142 recognizes the complex and varied needs of students with disabilities within the school environment. It also recognizes that one discipline cannot adequately provide all of the necessary services for these students. To meet the needs of each student, a collaborative effort is required from a variety of disciplines (Tada, Harris, & Bohmert, 1993). Many researchers support the use of the transdisciplinary approach as an optimal service delivery model to promote interaction between team members. However, actual use of this approach has not been demonstrated because most of the literature describing the transdisciplinary approach has been based on theory rather than empirical data.

We have specifically chosen to investigate the interaction between the physical therapist and the regular education teacher regarding their use of components of the transdisciplinary approach in their work with disabled students in the public school setting. Based on a review of the literature as well as personal observation in the school setting, we believe that interaction between these two team members could be improved in order to enhance the child's educational experience.

Purpose of Study

The purpose of this research study is not to determine which team approach is most appropriately utilized in the school system. Rather, our survey was developed to determine whether components of the transdisciplinary approach, which are widely promoted widely promoted theoretically in the literature, are actually utilized by physical therapists working with regular education teachers in the school system.

Chapter Two

Review of the Literature

The Role of the Physical Therapist in the School System

After the passage of PL 94-142, physical therapists began to be utilized in the school setting more frequently. This brought a number of new challenges to this specialized segment of the profession. The increased utilization of therapists was validated in a 1980 survey by the Section on Pediatrics of the American Physical Therapy Association (APTA). This study found that 11% of the therapists listed in the APTA membership profile were practicing in school settings. This represented an increase of 150% over the number of therapists reported to work in this environment in 1978 (Garrett, 1981).

Under PL 94-142 physical therapy is considered a related service and requires that all services are to be provided "as may be required to assist a handicapped child to benefit from special education" (United States Congress, 1975). In the school setting, physical therapists were placed into a new context in which services were now to be based on the educational rather than the medical well being of the child.

The term *transition* is often used in the literature when describing the physical therapist's entrance into the school environment. There are several reasons for the use of the term transition; the foremost being that employment of physical therapists in the schools involved a change in service focus from clinical based therapy to educationally based therapy. Clinically based therapy utilized the medical service model while educationally based therapy focused only on functional goals which enhanced the student's educational experience.

Part of the difficulty with this transition may stem from the basic educational curricula of physical therapy students. For the most part, students in physical therapy curriculums are taught generalized techniques that will be required to practice in the

clinical setting (Campbell, 1987). Often a formal class on pediatrics is an option in the curriculum, and even when required, school based philosophy may not be the primary focus. Therefore, much of the knowledge gained by physical therapists employed in the school setting is from personal experience and self-study (McLaurin, 1984). There is also limited classroom time in physical therapy curriculums devoted to team approaches to therapy which is a vital component of working in the school system (Campbell, 1987). It was proposed by McEwen that it is probably more difficult for school therapists to learn their specialty than it is for other therapists because school therapists are further removed from the traditional role than any other physical therapy specialty (McEwen, 1987).

In an attempt to clarify the newly emerging role of the physical therapist in the school setting, a study was conducted by Levangie in 1978 which was a survey based on therapists' ranking of fifteen performance abilities or skills. From the 328 questionnaires that were returned, data was analyzed to determine (a) role definition for public school therapists, and (b) educational needs of therapists preparing for public school service. The results showed so little consistency that the ranking of skill priority approached randomness between therapists. This study concluded that there was confusion among therapists about services being offered and difficulty defining new roles. As well, it was suggested that therapists had a tendency to perceive themselves as part of the traditional medical model rather than a part of the educational process.

A 1988 survey by Martin indicated that therapists continued to have concerns about role definition. The therapists also had concerns regarding criteria used to determine methods of service delivery, release of therapy techniques to other personnel, and questions regarding educationally related therapy versus medical treatment .

Two surveys in 1980 and 1986 by the Section on Pediatrics of the APTA indicated there were concerns about role definition for physical therapists in schools, size of caseloads, criteria used to determine the method of service delivery, release of therapy

techniques to other personnel, and supervision of therapists by non-therapy administrators (Garrett, 1981).

More recently, the Physical and Occupational Therapy Departments of the University of Illinois at Chicago conducted a survey of teachers, special education administrators, and physical and occupational therapists working in school systems. The purpose was to develop a conceptual model of practice for school system therapists. The results of the study were similar to previous surveys in that there was no clear agreement among the team members in regard to the role of therapists in school systems, criteria used to determine type and amount of therapy and the interaction of team members (Bundy & Carter, 1991).

Clearly, in the two decades since the passage of the federal law, the physical therapy profession continues to struggle with implementation of its role in the school system. Because the physical therapist is not the primary caregiver in the school setting, he or she must adjust to acting in a supportive capacity to the teacher and other professionals working with the child. He or she must also learn to be much more flexible by working around a schedule of school and classroom activities rather than having a specific time block for therapy services as is found in the clinic setting.

Expectations placed on therapists by parents, teachers, and physicians may also add to the difficulty in role transition because these individuals continue to perceive physical therapy within a traditional medical model. For example, parents often feel that individualized treatment is the best care for their child, teachers often expect therapists to take the student out of the classroom for treatment, and physicians referrals are often medically oriented (McEwen, 1987). Therefore, the therapist is not only challenged with defining his or her own new role, but is also challenged with changing the perceptions and expectations of parents and professionals involved with the student's care and development. It is not difficult to understand how the transition to an educationally based

model of service has been a struggle for the therapist. Today, roles continue to be refined to better incorporate the utilization of physical therapy services into the school setting.

To assist in defining the role of physical therapy in the school setting, the American Physical Therapy Association (1993) has written a statement entitled *Position on Practice in Educational Environments*. A segment of this statement follows:

Physical therapists have the skills to evaluate students having a variety of sensory and motor disabilities. Physical therapists plan and implement programs that will help these students attain their optimal educational potential and benefit from special education. Physical therapists should assume a role in the development of a student's Individual Educational Program (IEP) or Individual Family Service Plan (IFSP) and make recommendations for increasing a student's ability to participate in educational activities. In addition, physical therapists contribute unique administrative, consultative, management, and teaching skills that help modify the educational environment so that students may benefit from their educational placement. (p. 34)

Although this statement provides support for the use of physical therapists as related service personnel in the school setting, it provides only general descriptions of skills that should be provided. It also lacks any type of description of how services should be delivered and a method for implementation of a team approach. A lack of national guidelines led many states and school districts to develop their own standards and definitions of how related services are to be delivered. As the role of the physical therapist in the school setting continues to develop, models for specific levels of service offered by therapists have emerged in the literature. The types of service delivery are determined by the intervention needs of the student as well as the availability of professionals. The following is a description of a typical service model continuum that is utilized when determining the level of involvement a therapist should maintain with a child (Campbell, 1987):

Direct Service

This type of service delivery model uses pre-determined activities as stated in the IEP to achieve specific goals. Activities are carried out on a one-on-one basis between the student and the therapist. This could also include co-treatment with several professionals interacting with a child. The level of interaction with the student is at least on a weekly basis, most often two or three times per week. Activities may take place in any location that is determined relevant by the therapist working with the child such as the classroom, hallway, bathroom, lunchroom, playground, gym, or therapy room. The general criteria for use of this model is for children who are making rapid or moderate changes (improving or declining) and for very complex conditions in which the direct services of the physical therapist are necessary (Michigan Alliance of School Physical and Occupational Therapists, 1983).

Consultative Service

As a consultant the physical therapist gives advice, assistance and recommendations concerning the child to other professionals in order to assist in implementing goals for the student. It involves a hands-on evaluation and classroom observation followed by staff training. In this role the physical therapist provides guidance for how to implement change without personally intervening or giving direct service to the child. Consultation most often occurs one or more times a month depending on the individual child and may include a mid-year re-evaluation. General criteria for use of this model is that the child has reached a plateau and teachers and aides can be taught to implement therapy goals. The child may also be receiving therapy from other sources (Michigan Alliance of School Physical and Occupational Therapists, 1983).

Monitoring Service

As a monitor the physical therapist performs an initial evaluation, establishes goals, and then trains and supervises other individuals involved with the child to carry out the activities. Monitoring may occur from as few as three times per year to as frequently as

once a month. The general criteria for use of this model is that all of the needs of the child are being met by the school program. The child is usually showing little or no progress and few recommendations are necessary by the therapist to staff or parents (Michigan Alliance of School Physical and Occupational Therapists, 1983).

It should be noted that utilization of a specific type of service model should be based on the individual needs of the child while considering the prognosis relative to the disability. The IEP goals should be written in a way that describe the type of delivery system that will best meet the child's needs. However, on the specific IEP form used by therapists there is no specification listed for the type of delivery system that is to be implemented (Pelovello & Sullivan, 1981). It is up to each therapist to specify and account for the type of service being provided.

There are several criteria used when determining which type of service model should be implemented will vary with each individual. These criteria are as follows: (a) Severity of impairment; (b) developmental and chronological age of child; (c) prognosis for change; (d) family and staff follow-through and child's response to services; (e) resources available: Time, skill and attitude of staff, money, staff/student ratios; and (f) expectations of staff, parents and other professionals involved with child (Michigan Alliance of School Physical and Occupational Therapists, 1983).

Regular communication among all professionals working with the child will assist in making the determination for specific needs based on the criteria above. However, the type of service delivery by physical therapists will vary by setting and will depend on the philosophy and approach taken by each individual school system.

A 1994 survey of pediatric physical therapists throughout the United States who work in school systems concluded that therapists spent an average of 45% of their time in direct treatment. The rest of their time was spent providing group treatment (7%), monitoring other staff members about students currently or previously receiving treatment (12%), and performing other duties including administration, supervision, travel, and

fabrication or maintenance of equipment (24%). The respondents reported that their average weekly caseload consisted of sixteen children receiving direct treatment, five receiving indirect/group treatment, five whose programs were being monitored, and seven receiving consultation. Forty-seven percent of the respondents believe that students should be evaluated outside of the classroom (Effgen & Klepper, 1994). This does not support the literature which emphasizes team assessments in natural environments (Campbell, 1987; Giangreco, 1986a; Sternat, Messina, Nietupski, Lyon, & Brown, 1977).

The Role of the Regular Education Teacher in the School System

In the school environment the classroom teacher has the greatest amount of interaction with a child on a daily basis. Throughout history, the responsibilities of the classroom teacher have been diverse and demanding, and with the passage of PL 94-142 even more challenges were added. In accordance with the law, regular education teachers were now required to accommodate children with disabilities in their classrooms.

Teachers were now forced to modify their traditional role of being the person solely responsible for a child's education and learn to share the responsibility with other professionals. Teachers must now accommodate for related services as part of the educational environment and learn the function of each of these professionals in order to effectively interact with them concerning each child's needs. Although the law was enacted nearly two decades ago, many of the concerns initially voiced by educators continue to surface today.

Much literature has been published concerning teachers attitudes toward mainstreaming (Adams, 1987b; Hannah & Pilner, 1983; Hoover & Cessna, 1984; Larivee, 1982; Stephens & Braun, 1980; Yanito & Trenly, 1987). Most of the literature involved direct observation and questionnaires (Yanito & Trenly, 1987). Through their literature review, Yanito and Trenly found teachers' and principals' attitudes toward mainstreaming to be pessimistic. Although Yanito claims part of the concern in this study may have been

influenced by the fact that the law was new, continued review of more recent literature has shown that attitudes toward mainstreaming could continue to be modified (Yanito & Trenly, 1987).

In a 1980 study by Frith and Edwards, regular education teachers who had no experience working with disabled children were surveyed to determine their concerns and misconceptions regarding physically disabled students in the classroom. Common concerns cited were (a) toileting responsibilities, (b) spending a disproportionate amount of time with the physically handicapped student, (c) lack of appropriate materials, (d) responsibility for administering medication, (e) becoming overloaded with paperwork, (f) fear of injuring the student, and (g) having to spend extra time in meetings. This study also included surveys of teachers who did have experience working with physically disabled students in their classroom. When results were compared between the two sets of teachers, it was found that many of the concerns voiced by the non-experienced teachers were voiced much less frequently by those with experience. This study concluded that interaction with students with physical disabilities altered common misconceptions and negative perceptions by teachers. In another study by Stephens and Braun (1980) concerning teacher attitudes, it was found that those teachers who had taken classes focused on special education were more likely to be willing to have disabled students in their classrooms. Both of these studies demonstrate the power that education can have on views and attitudes toward working with the disabled student.

Unfortunately, as with physical therapy educational programs, regular education teachers are often not receiving the necessary curricula in order to prepare for work with the physically challenged student in the school environment (Adams, 1987). McLaurin (1984) stated that many teachers, both in regular and special education, have had little training in their educational background which focused on working with children with orthopedic or neurologic disabilities. Due to the diverse array of disabling conditions and the assumption of a low incidence of contact with them, many regular education programs

offer only broad overviews of competency requirements for working with these students (Goodman & Yasumura, 1992). These observations are supported in a study by Ganchow, Weber, and Davis (1984) that indicated that less than half of State Education Agencies had revised certification requirements to prepare the regular education teacher for meeting the requirements of PL 94-142. It was also found that 29 states had either no course requirements at all or only non-mandated guidelines. To substantiate the belief that teachers continue to feel inadequately trained, a 1991 article published by Izen & Brown identified what educators perceived to be important variables in delivering quality educational programs and identified what educators believed to be the strengths and weaknesses of their educational curriculum. The results indicated that respondents did not feel adequately trained by their educational curriculum to work with students with profoundly handicapping conditions.

The literature demonstrates that many teachers continue to feel ill-equipped for working with the physically disabled student. Numerous variables have been cited in the literature which may contribute to this attitude. The following list compiled by Yanito and Trenly (1987) indicates several of the factors that can lead to the unwillingness of some teachers to accept disabled children into their classroom: (a) lack of knowledge by teachers concerning the laws protecting those with disabilities; (b) lack of knowledge about medically diagnosed conditions surrounding the disabled student; (c) lack of understanding of the process of mainstreaming; (d) lack of training to teach the mainstreamed child; (e) lack of incentive by school districts for teachers to accept children with disabilities; (f) characteristics of the children themselves that may affect attitudes; and (g) the amount of support services and technical assistance available for the mainstreaming teacher. As stated by Yanito and Trenly (1987), "a teacher whose preparation addresses all of these areas has an increased likelihood of success in teaching the mainstreamed child" (p. 17). What needs to now be addressed is how teachers can become better

equipped with the necessary knowledge needed to successfully incorporate children with disabilities into their classroom.

The Physical Therapist and the Regular Education Teacher

The physical therapist is not equipped to take on all of the educational concerns that teachers have about their students. However, as a professional who is specially trained in the management of physical disabilities and movement disorders, the physical therapist can play a role in assisting the teacher in working with physically disabled children in the classroom environment. In order to best utilize the skills of the physical therapist, the teacher must understand the definition and role that the physical therapist can play. There are numerous ways in which the classroom teacher can assist the physical therapist regarding educationally based goals and functional activities in the classroom.

A 1993 unpublished study by Gregory and Whittenbach surveyed regular education teachers who worked with disabled children in their classroom. The purpose of the study was to determine if these teachers felt they received adequate training and information on the management and diagnoses of students with physical disabilities. The study also attempted to discover if teachers felt that they were in need of this type of training. Results indicated that teachers did have an interest in being trained in the physical management of students with disabilities. The authors also suggest that at the undergraduate level the physical therapy and education departments could collaborate to develop a course that would increase the students' knowledge of each profession and how the two professions could assist each other in the care and development of the child.

In a pilot study by Giangreco published in 1986 the interaction between the teacher and the physical therapist was specifically investigated in regards to treatment outcomes for a child with cerebral palsy. Initially, the subject was given the task of activating a switch to turn on music which was demonstrated by the classroom teacher in ten consecutive teaching trials. During this time physical therapy services were implemented

in a direct and isolated manner for a total of five, 30 minute sessions per week. The therapy consisted of passive range of motion, tone reduction, and movement facilitation techniques but were not specifically related to educational goals. In the next section of the study, the therapeutic input was now approached in an integrated and indirect manner in which the therapist spoke with the teacher concerning the educational objectives and "serving in a training, consulting, and monitoring role therapists taught the classroom teacher how to provide appropriate therapeutic input within the context of the teaching program" (p. 16). Results of the trials demonstrated that the subject displayed significantly improved performance during the phases involving indirect/integrated techniques. This study brought up several interesting points in terms concerning learning style and approach of intervention. The most important point being that the interaction and efforts of communication by both the therapist and teacher resulted in a more positive outcome for the child. This study demonstrated that in order to make the interaction work positively in the child's best interest both the teacher and physical therapist must be willing to break down professional barriers and learn from one another. From a commentary on mainstreaming, Joseph Azbell, R.P.T., states "if, somehow, we could overlook ourselves and focus our concern solely on the children's welfare, we would all ultimately benefit" (DeBacy, 1979, p. 14).

Team Approaches to the Education of Students with Disabilities

Team approaches to the education of children with disabilities have been advocated widely in the literature. Several different models for providing students with related services through a team approach have been suggested since the implementation of PL 94-142 (Albano, Cox, York, & York, 1981; Beck, 1977; Campbell, 1987; Giangreco, 1986a). The three most commonly cited models are the multidisciplinary, interdisciplinary, or transdisciplinary team approach. A definition of each follows.

A *multidisciplinary* team approach refers to the structure by which each discipline performs separate assessments, forms individual goals, and follows with an isolated treatment program. Services are provided strictly within a medical treatment model in which communication across disciplines is virtually nonexistent (Sirvis, 1978).

Interdisciplinary team members individually assess each student, share their results with other disciplines to plan a comprehensive program and then deliver treatment in isolation (Beck, 1977). The interdisciplinary model resembles the multidisciplinary model in many aspects. The basic difference between the two approaches is that the interdisciplinary model establishes formal communication channels and assigns a case manager to each student. The case manager, however, does not provide or monitor treatment, but simply directs information flow. Theoretically, there is a strong commitment to group decision making and a unified treatment plan but in actual practice this philosophy is not evident (McCormick & Goldman, 1979).

The *transdisciplinary approach* refers to the coordination of parents, educators, and related service personnel in order to collaboratively determine student goals, provide direct and consultative therapy services, integrate intervention methods, and monitor student progress (Beninghof & Singer, 1992; Campbell, 1987; Gallivan-Fenlon, 1994; Giangreco, 1986a).

Effgen and Klepper (1994) performed a study that assessed the delivery of therapy services in school systems. Respondents of the survey were asked their opinions concerning actual practices related to the delivery of therapy services to students in their schools and what they believe to be ideal practices in the following categories: evaluation, development of the IEP, service delivery, team dynamics, and administrative support. In regard to team dynamics, the majority of respondents report the actual frequency of many team related practices is significantly less than what they considered ideal. Discrepancies between therapists' reports of actual practices versus their opinions of ideal practices were found in the areas of cross-disciplinary training (78% v. 98%), co-treatment of children

(18% v. 46%), collaboration among disciplines to design and implement programs (60% v. 98%), regular communication among team members (81% v. 97%), regular team meetings (39% v. 91%), and sharing of knowledge and teaching strategies among team members (64% v. 98%). Thirty-three percent of the respondents reported teams rarely or never meet and therapists rarely or never co-treatment.

Several variations in application of the transdisciplinary model have been outlined in the literature. In 1977, Sailor described one version of the transdisciplinary approach:

We favor a self-contained, integrated model, rather than an isolated model. We would have the people from other disciplines doing what they do in the classroom, training the teachers or at least including the teacher as part of the educational process, and becoming a consultant more than a hands-on therapist for the handicapped. We do foster the idea of a team, but it's a team of consultants to the teacher. The teacher is the hub and focus of the activity, whatever the therapy. The teacher has the responsibility for the educational processes, and other people are advising, recommending programs, and teaching the teacher to be able to do the things that they do. There are, of course, some activities that only a physical therapist can do with a child, but these are done within the context of the classroom. (p. 18)

Sailor describes teachers as being the only team members who act as direct service providers while all other team members serve primarily as consultants. This differs from the multidisciplinary and interdisciplinary approaches in that the child is not removed from the classroom for isolated therapy. If the student requires specialized therapy then it is provided within the classroom setting (Sailor, 1977).

Giangreco supports a version of the transdisciplinary approach in which the teacher serves as the *primary programmer*. This role involves establishing each student's functional goals in school while related service personnel assess the student and design therapeutic interventions in order to facilitate attainment of those educational goals

(Giangreco, 1986). Therefore, the primary programmer should be able to determine how to interpret therapeutic goals, how to incorporate the goals into the IEP and to implement them daily, how to cope with physical limitations that involve daily functioning, and how to plan for the future based on the student's prognosis (Kinnealey & Morse, 1979).

Giangreco supports using indirect consultative therapy but also notes that direct *hands-on* therapy may be necessary with particular students (Giangreco, 1986).

A slightly different version of these models is one in which up to two team members hold full responsibility for the student's progress. The other team members are available for direct assistance and consultation (McCormick & Goldman, 1979). For example, with a child who is severely physically disabled, responsibility may be jointly assigned to the regular education teacher and to the physical therapist with consultation from the occupational therapist and speech therapist.

Under the transdisciplinary model, communication flows in all directions between team members. Therapists provide both direct and indirect therapy so that the teacher and other team members can be taught to integrate therapeutic treatments into the student's school activities. Educators teach therapists various instructional techniques so that when the therapist is treating the student educational topics will remain consistent. This approach results in similar inputs being supplied to the learner on an ongoing basis throughout the school day and continuing at home. This is important because it has been clearly indicated in the literature that learners with severe disabilities have significant difficulty generalizing and synthesizing acquired skills (Giangreco, 1986a). Training generic skills in various settings provides greater opportunities for acquisition and generalization (Campbell, McInerney, & Cooper, 1984).

Components of the Transdisciplinary Approach

Essential elements of the transdisciplinary approach include the need for a program philosophy, an emphasis on functional educational goals, coordination of team

interactions, professional role release, and a flexible and individualized program (Campbell, 1987; Lyon & Lyon, 1980). The following section will describe each of these components.

A written program philosophy is necessary to unify professional expectations and perspectives. If a program philosophy is poorly defined then team members may approach student programming from completely different philosophical perspectives. This may result in personnel forming independent and poorly integrated goals and objectives. It is the role of the special education administrator to establish the program philosophy, define team member roles, and facilitate team activities (Campbell, 1987).

There has been a trend in all health care settings to focus on functional activities rather than basic movement components. This also holds true in the school setting. Transdisciplinary or integrated therapy has been defined as the delivery of related services in situations in which skills are functional and meaningful for an individual student (Sternat, Messina, Nietupski, Lyon, & Brown, 1977). Team members under this approach teach skills within the context of many typical school activities and routines that occur throughout the day. This allows students repeated opportunities to practice and learn skills in natural environments where the skills will be needed. The physical therapist can accomplish this by treating students in the classroom. This essential component of relating therapy to functional tasks is in accordance with PL 94-142 (United States Congress, 1975) which states that treatment must assist a child to benefit from his or her educational program.

Another essential element of the transdisciplinary approach is ongoing team interactions. In order to have constant communication between the team, some authors suggest having one or two team meetings per week (Gallivan-Fenlon, 1994). However, this is often not feasible considering the busy schedules of all team members. To prevent team members from spending excessive amounts of time in meetings, some supporters of the transdisciplinary approach promote a more efficient method of collecting and

summarizing student performance data on a regular basis. This strategy requires all team members to document each day they see the student. This includes the teacher, related service personnel, and the parent. Student data is filed in a central location such as the classroom where it can be easily reviewed regularly by team members. Since it is necessary for all team members to read documentation by other professionals, terminology of the progress notes must be easily understood by all team members. Written communications allow all team members to constantly assess goal attainment and make necessary program adjustments. Team meetings are then scheduled by a designated case manager or primary programmer in order to review the programs of students who are either not reaching their goals or have achieved their goals and need additional planning. The transdisciplinary model also promotes assigning related service personnel to classrooms rather than individual students in order to reduce the number of IEP teams to which each individual is a member (Campbell, 1987).

The transdisciplinary model also assumes a *role release* approach as described by Lyon & Lyon (1980). Role release refers to the ability of professionals with different backgrounds of education, knowledge, and expertise to abandon strict job descriptions in order to share responsibilities they may not normally have in order to benefit the child and increase interaction and communication within professions. The reasoning behind this concept according to Lyon and Lyon is that in order for a group of professionals to function as a team at least some of the responsibilities will need to be shared and accepted by more than one member of the team. The goal of a role release is to accentuate each profession's primary strengths in order to benefit the team and the student for whom which the team members are responsible.

Flexibility of all team members is a crucial element to the success of the transdisciplinary approach. Flexibility is necessary to coordinate therapy schedules and to allow for variations between direct and indirect therapy services. The structure of the

transdisciplinary program must also be flexible because each school is unique and the program must be adapted to meet the school's individual needs.

Benefits of the Transdisciplinary Approach According to the Literature

The transdisciplinary approach can benefit the team members and the students. The students' benefits include increased therapy services provided by all team members throughout the day, maximized instructional time as students are not pulled out of class for therapy, continuity and consistency in instruction, and a comprehensive and holistic educational program (Beninghof & Singer, 1992; Giangreco, 1986a; Campbell, 1987). The coordinated effort of this model assists the team and family in viewing the disabled child as a unique, total personality rather than a collection of multiple, unrelated problems (Sears, 1981).

Benefits to the team members include a more balanced use of the unique competencies of each discipline, professional growth through expanded skills and knowledge, increased communication with other disciplines, the potential to see larger numbers of students, and assistance in generating creative ideas (Beninghof & Singer, 1992; Campbell, 1987; Giangreco, 1986a; McCormick & Goldman, 1979; Sears, 1981). Also, because they are not restricted by the traditional parameters of their discipline's formal role definitions, professionals have the opportunity to become both generalists and specialists. Denhoff and Hyman (1976) discuss this theory by stating, "All become child development specialists with an area of particular expertise rather than only being restricted to the confines of their own disciplines with the consequent fractionalization of the child."

Resistance to Change

Literature suggests that teachers, related service personnel and parents are resistant to move to a transdisciplinary, educationally oriented approach (Campbell, 1987;

Cutone, 1994; Giangreco, 1986a; Lyon & Lyon, 1980; McCormick & Goldman, 1979; Sears, 1981). It is widely supported in the literature that the transdisciplinary approach is the optimal service delivery model for use with students with disabilities in the school systems (Beninghof & Singer, 1992; Gallivan-Fenlon, 1994; Giangreco, 1986b; Lyon & Lyon, 1980; McCormick & Goldman, 1979; Sears, 1981). Yet, it has been noted that the transdisciplinary model is thought to be the exception rather than the rule (Giangreco, 1986a; Haynes, 1976).

The success of the transdisciplinary approach depends on the willingness of team members to alter traditional beliefs and practices. In the past, emphasis has been placed on the differences between disciplines rather than the manner in which they complement each other (McCormick & Goldman, 1979). This makes the transition from an isolated, medically oriented approach to an integrated educationally oriented model even more difficult. It is a challenge to persuade professionals, especially those who have been using traditional approaches, to share their expertise with colleagues in other disciplines without feeling that their professional security is being threatened (McCormick & Goldman, 1979). Resistance to change can be extremely destructive to the successful development of a transdisciplinary team and can sabotage even the best planned program (Sears, 1981).

Role ambiguity, role conflict, and lack of role release, are factors that may contribute to resistance to change. Role ambiguity is evident when team members are not sure of what they should be doing and what other team members should be doing. They may also not be sure of what other team members think they should be doing (Sears, 1981).

Role conflict can also encourage resistance to change. Role conflict means that one team member has job expectations that conflict with the job expectations of another team member, or that several team members have different expectations. This can result in inconsistent demands being made on each member of the team (Sears, 1981).

Lack of role release, another factor causing unacceptance of the transdisciplinary model, may be perceived as giving away aspects of a unique disciplinary role. This may be considered as threatening, illegal, or diminishing in nature (United Cerebral Palsy Association, 1976).

A 1994 study by Effgen and Klepper suggested that there is an increasing trend in the number of therapists who are self-employed or work for outside agencies contracting with schools to provide physical therapy services. The authors of the study suggested that possible reasons for this may be to obtain higher incomes, to have greater control over their schedules, and to avoid some specific duties required of regular school employees. Respondents of the survey commented that in some school systems, contracted therapists are paid only for direct student contact time and not reimbursed for meetings, paperwork, and consultation with staff or parents. They stated that this may result in poor team interaction.

In addition, questions have arisen with the transdisciplinary approach regarding liability and insufficient validity data. Administrators, parents, and professionals have recently been concerned with the issue of liability when using the transdisciplinary approach (Campbell, 1987; Geiger, Bradley, Rock, & Croce, 1986; Giangreco, 1986a; Giangreco, 1986c). Some professionals feel that when a model based heavily on indirect services is used, negligent behavior may arise by not assuring sufficient supervision by the appropriate professional. They also feel that the scope of liability may be expanded from individual therapists to other team members (Geiger, Bradley, Rock, & Croce, 1986). Giangreco expressed his hope that professionals do not become so concerned about liability issues that they lose sight of their mission as service providers. He stated that many techniques can be safely carried out by non-therapists given proper training, information, and ongoing monitoring by qualified therapists (Giangreco, 1986c).

There has been little empirical documentation regarding the cost or effectiveness of the transdisciplinary approach as compared with the traditional approaches of

multidisciplinary and interdisciplinary care. Preliminary studies have supported the efficacy of indirect/integrated approaches for the provision of related services in educational settings (Giangreco, 1986b). Research also indicates that applying a combination of systematic instruction and therapy methods in functional contexts is effective when teaching useful skills to students with disabilities (Campbell, McInerney, & Cooper, 1984; Giangreco, 1986b). Further demonstrations of the effectiveness of integrated therapy need to be conducted before professionals can be confident that this model can be widely implemented in the school system.

Research Question

To what extent do physical therapists utilize components of the transdisciplinary approach in their interaction with regular education teachers when working with students K-6 in school systems throughout the Midwest region of the United States?

Research Hypothesis

Components of the transdisciplinary approach are not being utilized by physical therapists in their interaction with teachers in the school systems.

Chapter Three

Methodology

Study Design

This was a descriptive study designed to explore the present use of the transdisciplinary approach with emphasis on assessing the interaction between the physical therapist and the regular education teacher working in school systems in the Midwest region of the United States. Literature supports the use of this approach to enhance interactions between related services personnel and regular education teachers. Data to study the research question was obtained from a survey which was sent to all members of the pediatric section of the American Physical Therapy Association (APTA) who are employed in school systems throughout the Midwest region of the United States.

Procedure

The research proposal and survey were designed and sent to the Grand Valley State University Human Subjects Review Board for review on July 29, 1994. The study was passed by the board on August 16, 1994.

The APTA was contacted and a list of physical therapists who were members of the pediatric section and were employed by a school system in the Midwest region of the United States was obtained. Included in the Midwest Region are Illinois, Indiana, Iowa, Kansas, Michigan, Minnesota, Montana, Nebraska, North Dakota, Ohio, South Dakota, and Wisconsin. Please see Appendix D for a visual description of the Midwest region of the United States.

Surveys were sent in October of 1994. A cover letter was sent with the survey in order to introduce our thesis and to provide a description of the purpose of our study. It was requested that the therapists respond within two weeks of the date that the questionnaire was sent.

A consent form was not used for this study since consent of the participants was implied by their act of answering and returning the questionnaire. This explanation regarding consent was addressed in the cover letter.

The participants confidentiality was maintained by disposing of the mailing labels in accordance with the regulations of the APTA. As well, the names of the respondent and their affiliated school district were not requested on the questionnaire.

Instrument

The instrument used in this study was a questionnaire designed to obtain the following information: Demographics, number of years employed in the school system, educational level, and the interaction between the physical therapist and the regular education teacher.

The survey consisted of 17 objective questions in a yes or no and multiple choice format and six Likert style questions. The objective questions were used to simplify data analysis and to decrease the therapists' time to complete the survey. Three subjective questions were included at the end of the survey to gain further insight from physical therapists about their interaction with regular education teacher. These subjective questions were not included in the data analysis but were used to complement our discussion.

Population and Sample

The sample population consisted of all members of the pediatric section of the American Physical Therapy Association who were employed by the school systems in the Midwest region of the United States. Because PL 94-142 is a federal law, we did not need to limit our study to only one state. According to the APTA's computer tabulation, there were 325 physical therapists who were pediatric APTA section members who worked in a school system.

Inclusion and Exclusion Criteria

Inclusion criteria for this sample population included the following: (a) pediatric section member of the APTA who indicated employment in a school system on his or her APTA application; and (b) currently active in treatment of disabled students in grades ranging from kindergarten through sixth grade who participate in regular education classes.

Any therapist who did not meet the inclusion criteria was asked to answer no to the first question of the survey and then discontinue with the rest of the survey. We then asked those therapists to return the incomplete survey to us so we could establish an accurate estimate of our actual response rate.

Data Analysis

Data was collected from the returned self-administered questionnaires. Once the questionnaires were returned, the data was analyzed through utilization of the Statistical Package for the Social Sciences (SPSS). Frequency tests were performed on each question in order to determine the percentage of each response. Tables and bar graphs were designed to further clarify certain responses. Pearson chi-square analysis was used to determine relationships between components of the transdisciplinary approach. Once the analysis was completed, the results were interpreted to determine the use of the transdisciplinary approach by physical therapists and regular education teachers. Subjective comments were reviewed and included in the discussion section of the thesis.

Chapter Four

Results and Data Analysis

Three hundred and twenty five surveys were mailed with 207 returned. This made the actual rate of return 64%. One-hundred and fifty of the 207 returned surveys met our inclusion criteria and were therefore included in our data analysis. The percent of analyzed surveys was 72% of the 207 returned surveys and 46% of the total 325 which were sent.

Characteristics of the Sample

The survey requested that respondents state the year of graduation from physical therapy school. This question was analyzed and the results were compounded into decades of graduation for clarification. As illustrated in table 1, our results indicated that over half (56%) of the respondents graduated between 1970-1979. The next two categories were fairly evenly distributed with 19.3 % of the respondents graduating between the years 1960-1969 and 24.7% graduating between 1980-1992. Only 2.7% of respondents had graduated within the past five years.

Table 1

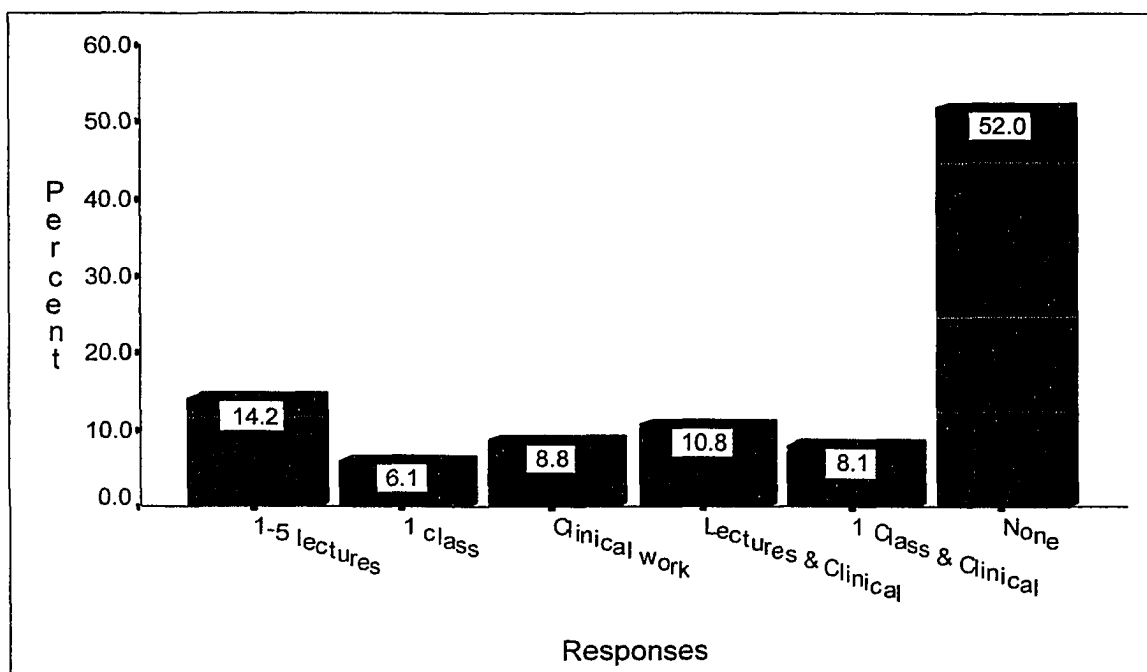
Decade of Graduation

<u>Decade</u>	<u>Number of Graduates</u>
1954-1963	6
1964-1973	51
1974-1983	60
1984-1993	24

We also wanted to determine the amount of time that the respondents studied school based therapy either in their educational curriculum or through clinical affiliations. Results indicated that greater than half (51.7%) of the therapists had not received any school therapy training within their physical therapy curriculum. Figure 1 illustrates the distribution of answers regarding the type of training therapists had received in their individual curricula.

Figure 1

Type of Education Received within Educational Curriculum Regarding School Therapy



We were also interested in the number of years the therapist had been employed in a school setting. We chose to divide the data into five year increments in order to clarify the question. It was found that respondents were quite evenly distributed as 26.7% of therapists had 0-5 years of experience in the school setting, 37.3% had 6-10 years, 16.7% had 11-15 years, 17.3% had 16-20 years, and 2.0% had 21-24 years of experience. Table

2 further demonstrates this distribution by illustrating the years employed within the school system and the number of therapists who responded to each category.

Table 2

Number of Years employed within a School Setting

<u>Years Employed</u>	<u>Number of Therapists</u>
0-5	40
6-10	56
11-15	25
16-20	26
21-24	3

Question 19 requested that therapists indicate the type of agency in which they were employed. Results indicated 55% of respondents stated they were employed directly by the school system, 20.8% were hired by an outside agency, and 20.1% were self-employed and contracted with the school system.

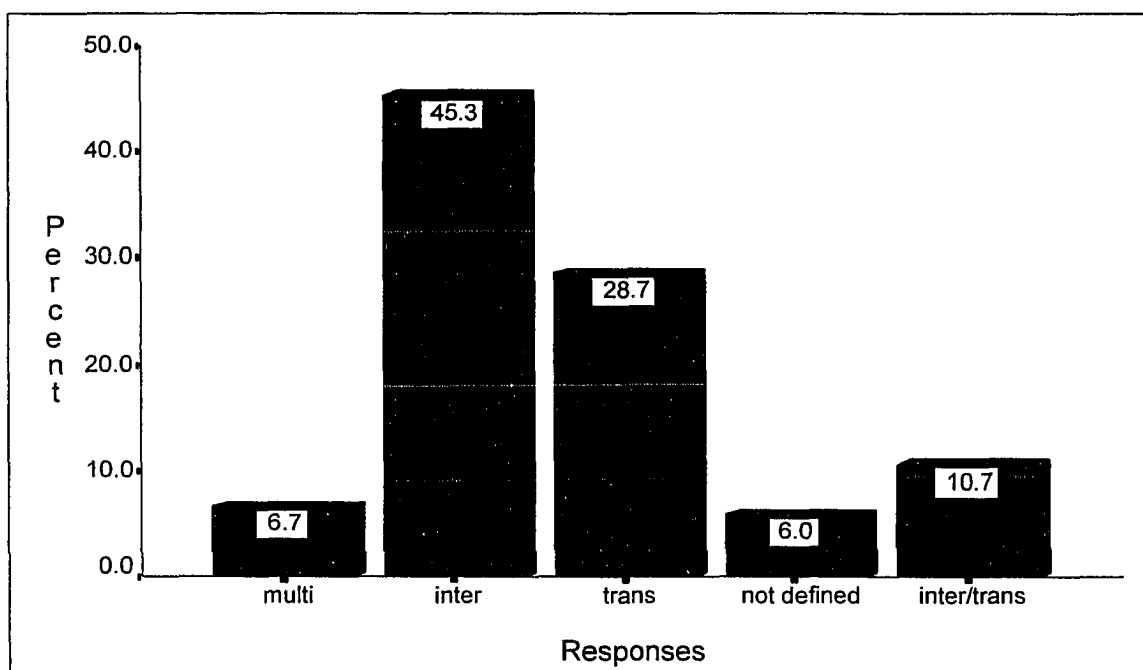
Definition and Written Philosophy of a Team Approach

Question 26, the final question in the survey, was written to determine therapists' perceptions of the type of team approach they used in the school system. This question was asked in order to gain insight into answering our research question regarding the type of team approach used between the therapist and the teacher. As well, we hoped to determine if the answer to this question correlated with responses to other questions throughout the survey which were indicative of a specific team approach.

Figure 2 illustrates the distribution of answers to this question. The data illustrates that the two most commonly utilized approaches are the interdisciplinary approach and the transdisciplinary approach. Because 16 respondents indicated use of both approaches (interdisciplinary and transdisciplinary) on their answer form, this answer was included on the bar graph as well.

Figure 2

Description of Team Approach in Work Setting?



We were interested in determining whether the school system in which the respondent was employed had a written program philosophy regarding a specific team approach used by all professionals to clarify team relationships and roles. This question was the first objective question asked in the survey after the inclusion/exclusion criteria was established. Results indicated respondents were fairly equally distributed regarding this answer with 59.0% indicating there was no written philosophy and 41% stating that

their school did have a written policy regarding a specific team approach. According to literature describing the transdisciplinary team approach, a written program philosophy should be found within each school system in order to provide a foundation for establishing goals and coordinating team interactions (Campbell, 1987; Lyon & Lyon, 1980). A Pearson chi-square test showed a significant relationship, $\chi^2(4, N = 128) = 52.73, p < 0.001$, between questions 2 and 26. Teams using a transdisciplinary approach were significantly more likely to have a written program philosophy than were those teams using multidisciplinary or interdisciplinary approaches.

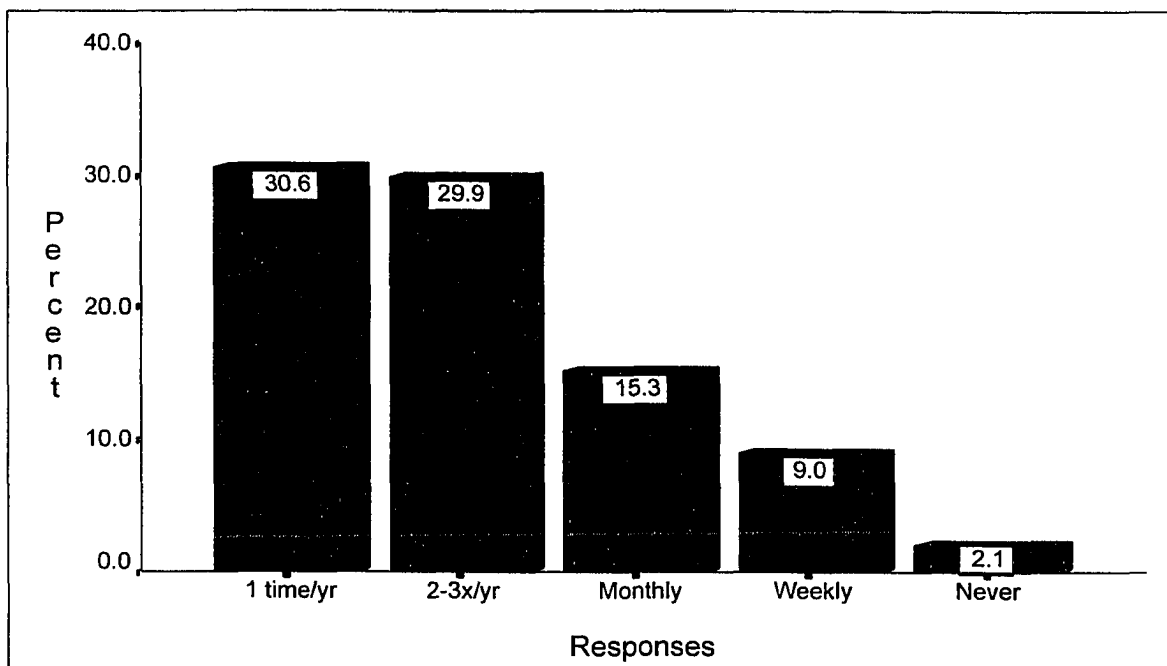
Team Meetings

We were interested in gaining more information regarding the number of formal team meetings held within the school year to discuss each student. Legally, only one meeting is required for each child annually to determine the child's IEP. According to the literature describing the transdisciplinary team approach, it is expected that meetings should be held on a more regular basis. Gallivan-Fenlon (1994) suggested that having one or more team meeting per week is necessary to establish and maintain communication between all professionals involved in the child's education.

Question 4 of the survey asked respondents to indicate how often team meetings were held for students receiving special services. As shown in figure 3, it was found that 30.6% of respondents stated they met the legal requirement of meeting only one time per year; 29.9% of the therapists responded that they met two or three times per year and 15.3% stated they met monthly. Nine percent of the respondents stated they met on a weekly basis and 2.1% stated they never met.

Figure 3

How Often are Team Meetings Held in Your School System for Students Receiving Special Services?



Question 6 addressed team meetings. This question was asked in order to determine the specific type of goal setting strategy utilized during the legally mandated annual IEP meeting. The majority of the respondents (53.4%) indicated that they formulate and implement their individual goals for the child and then read these goals aloud with input from other disciplines encouraged. This type of strategy reflects utilization of the interdisciplinary approach. Results indicated that 19.9% of respondents indicated that a holistic set of goals is formulated by all team members while at the IEP meeting, and each discipline works toward attaining these goals; this reflects use of the transdisciplinary approach while 17.8% of respondents stated each team member formulates and implements their individual goals for the child with minimal to no discussion among team members reflecting a multidisciplinary approach.

Pearson chi-square analysis showed a very significant relationship, $\chi^2 (8, N = 128) = 52.73, p < 0.001$, between question 6 and 26. The goal setting strategy is one of the primary components of the transdisciplinary approach. Chi-square results show that the goal setting strategy is highly indicative of the overall team approach utilized. Refer to table 3 for a comparison of the goal setting strategy with the team approach utilized.

Table 3

Comparison of Goal Setting Strategy with Team Approach Utilized

		<u>Team Approach Utilized (Number of respondents)</u>			
		Multi.	Inter.	Trans.	Inter./Trans.
<u>Goal Setting Strategy</u> (# PTs)	Multi.	5	15	2	1
	Inter.	5	44	14	8
	Trans.	0	3	23	2

The final question asked regarding team meetings was whether or not there was a case manager assigned to each student mainstreamed into the regular education classroom. The majority of the respondents (72.3%) indicated that a case manager was assigned to each student mainstreamed into the regular education classroom and 25.7% denied use of a case managers. According to the literature, assignment of a case manager enhances communication between all those interacting with the child. A case manager assignment is also a required component of the transdisciplinary approach. A Pearson chi-square test indicated a highly significant relationship, $\chi^2 (4, N = 140) = 24.32, p < 0.001$, between questions 7 and 26. Of the 41 therapists indicating use of the

transdisciplinary approach, 39 reported utilization of case managers. Only 2 of the 9 therapists using the multidisciplinary approach indicated use of case managers.

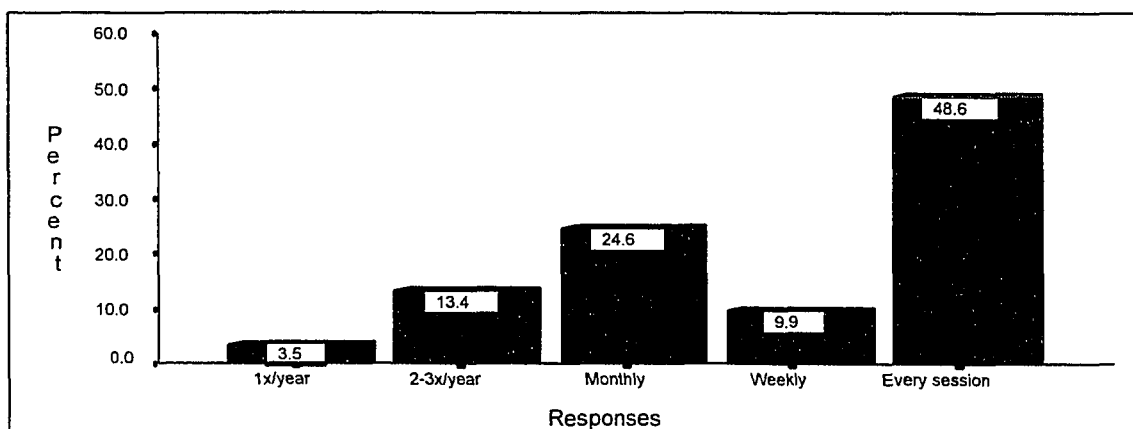
Documentation and Review of Notes

We were interested in determining how often therapists were documenting the treatment or progress of each child. To meet the requirements mandated by PL 94-142, therapists are only required to document annual IEP goals. We believe, however, that documentation should be done on a more regular basis in order to provide adequate records of progress and allow for a flow of information between all professionals interacting with the child. According to the transdisciplinary approach, documentation should be done each time the child is seen in therapy.

Question 10 asked the respondents to indicate how often they document the treatment or progress of each child. Figure 3 illustrates that 33.2% of the respondents reported documenting every treatment session. Although this response had the highest percentile, it also reflects that less than 50% of the respondents reported that they document in accordance with the transdisciplinary model.

Figure 4

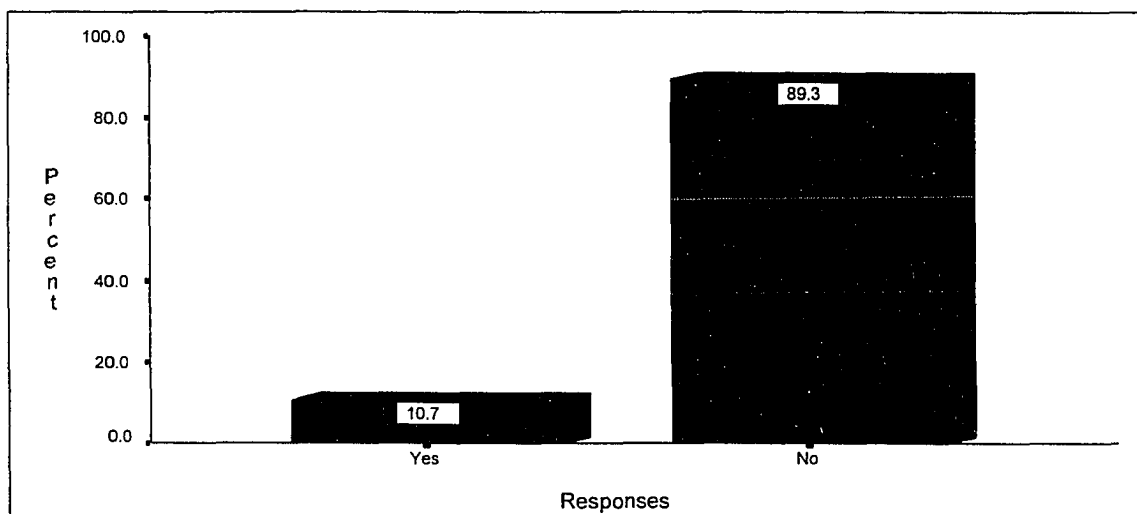
How Often Do You Document the Treatment or Progress of Each Child?



Question 11 was a yes or no question asking if the physical therapy notes of individual students were routinely reviewed by the regular education teacher. Figure 5 illustrates that the review of therapy notes by the regular education teacher is not a common practice according to the therapists surveyed. Pearson chi-square analysis revealed a significant relationship, $\chi^2(4, N = 145) = 12.22, p < 0.05$, between questions 11 and 26. Although most therapists indicated that physical therapy notes were not reviewed by the teacher, the majority of respondents whose therapy notes were reviewed by the teacher also utilized the transdisciplinary approach.

Figure 5

How Often are Physical Therapy Notes Reviewed by the Regular Education Teacher?

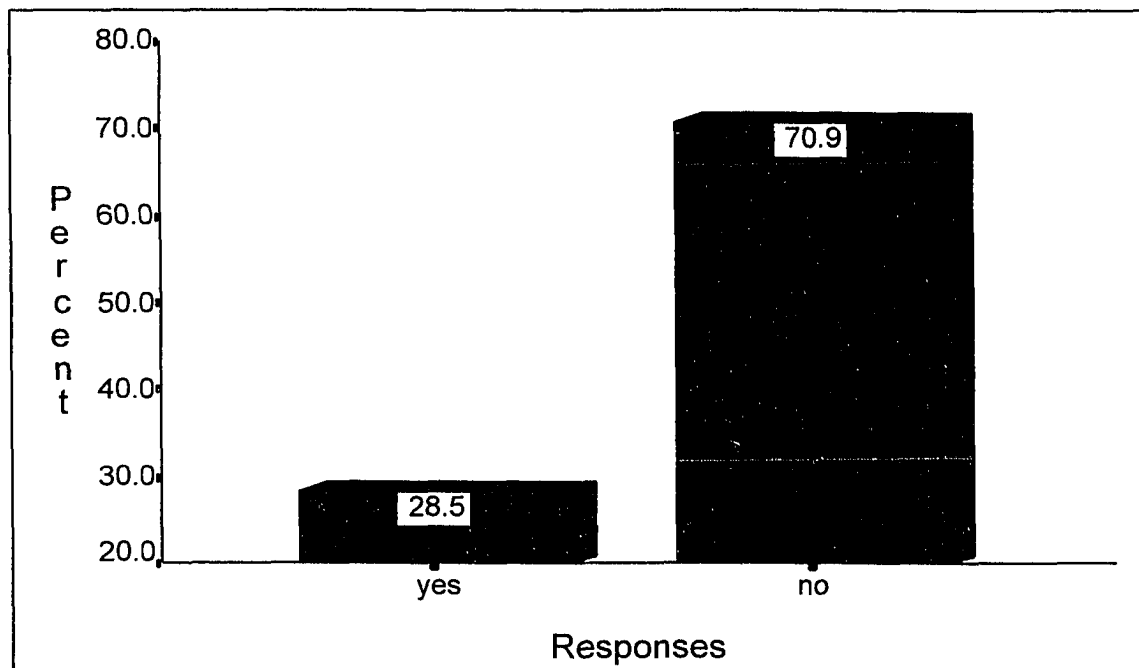


Question 12, which asked whether the regular education teacher documented students' educational objectives and activities in the classroom, was omitted from data analysis. This decision was based on the fact that the majority of respondents indicated confusion in answering this question and 14 therapists did not attempt to answer the question.

The final question in this category was question 13. This question asked if treatment and progress notes from all team members were kept in a central location that was easily accessible. Figure 6 illustrates the responses to this question. The transdisciplinary approach encourages keeping all notes in a location that is easily accessible to all team members in order to promote sharing of information and communication among all professionals working with the child. According to figure 6, a minority of schools are utilizing this component of the transdisciplinary approach. A Pearson chi-square test showed no significant relationship, $\chi^2(4, N = 145) = 4.01, p > 0.05$, between questions 13 and 26.

Figure 6

Are Treatment and Progress Notes Kept in a Central Location Which is Easily Accessible to all Team Members?



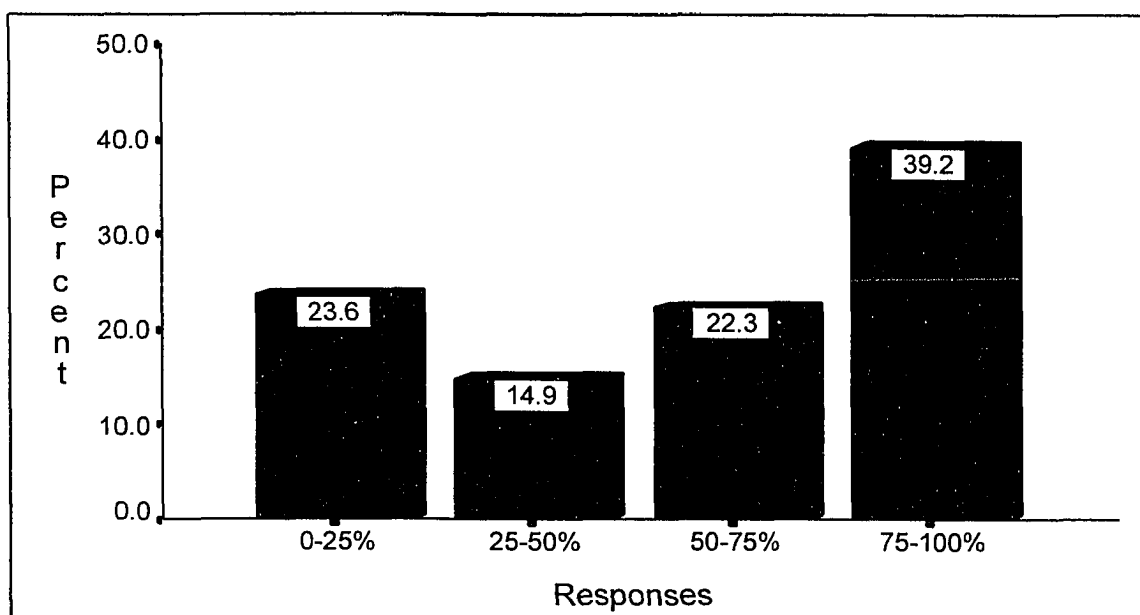
Interaction Between the Physical Therapist and the Regular Education Teacher

The transdisciplinary team approach promotes regular communication and sharing of knowledge between all who are involved in the child's educational experience. We chose to ask several questions in the survey regarding the amount of interaction between the therapist and the regular education teacher.

Question 5 asked the therapist to indicate the percentage of time that both the therapist and the regular education teacher were present at team meetings. As figure 7 shows, the answers were fairly evenly distributed. Results indicated that 38.5% of the therapists indicated that both the therapist and the teacher were present at 50% or fewer of scheduled team meetings while 61.5% of therapists stated that both the therapist and the teacher were present at 50-100% of all team meetings. No significant relationship, $\chi^2(12, N = 143) = 12.55, p > 0.05$, was found between question 5 and 26 using Pearson chi-square analysis.

Figure 7

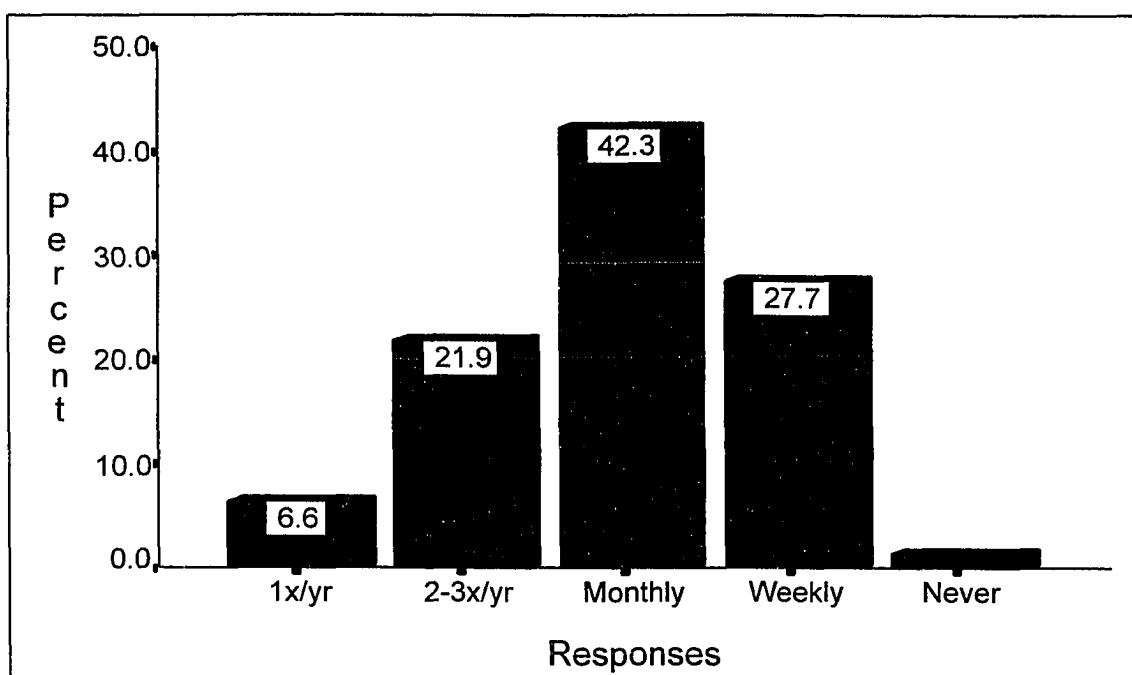
Percentage of Team Meetings Attended by Both Therapist and Teacher



Question 8 asked the therapist to indicate how often he or she interacted with the regular education teacher on an individual basis regarding a specific student. Figure 8 illustrates the responses to question 8. The largest percentage of respondents indicated that they interact on a monthly basis with the teacher. Pearson chi-square analysis of questions 8 and 26 revealed no significant relationship, $\chi^2(16, N = 133) = 18.31, p > 0.05$, between the two questions.

Figure 8

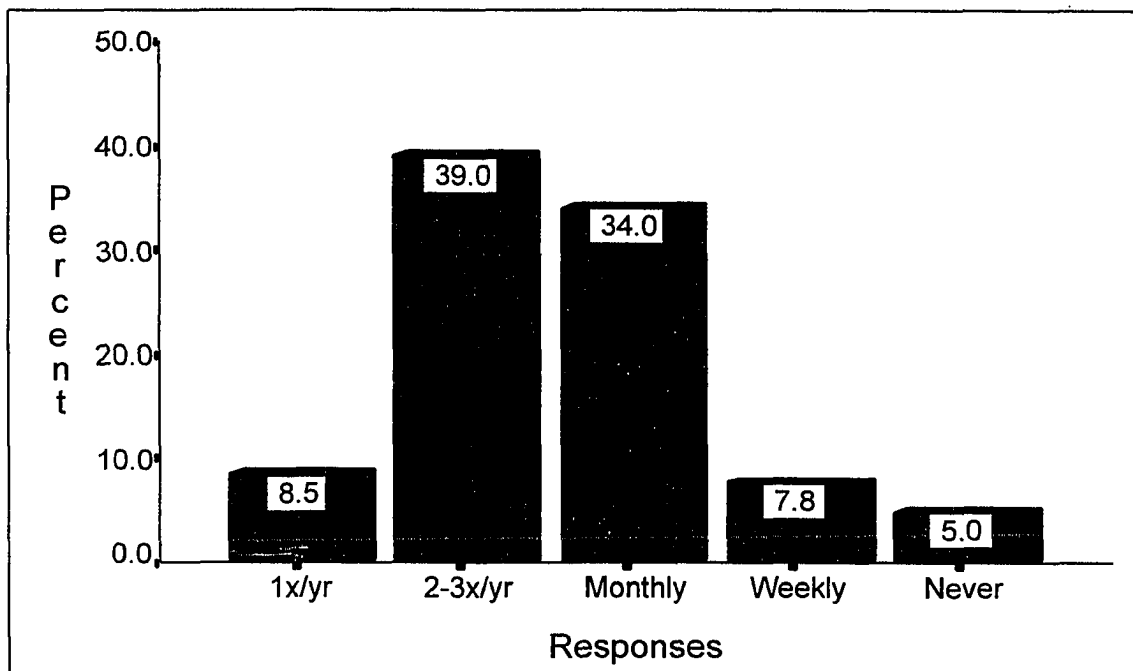
Amount of Interaction on an Individual Basis Between the Therapist and Regular Education Teacher Regarding a Specific Child



The final question in this category was written to determine how often the therapist educated the regular education teacher in techniques to attain the functional goals of the student. Figure 9 illustrates that the largest percentage of respondents provided education to the teacher two to three times per year or monthly.

Figure 9

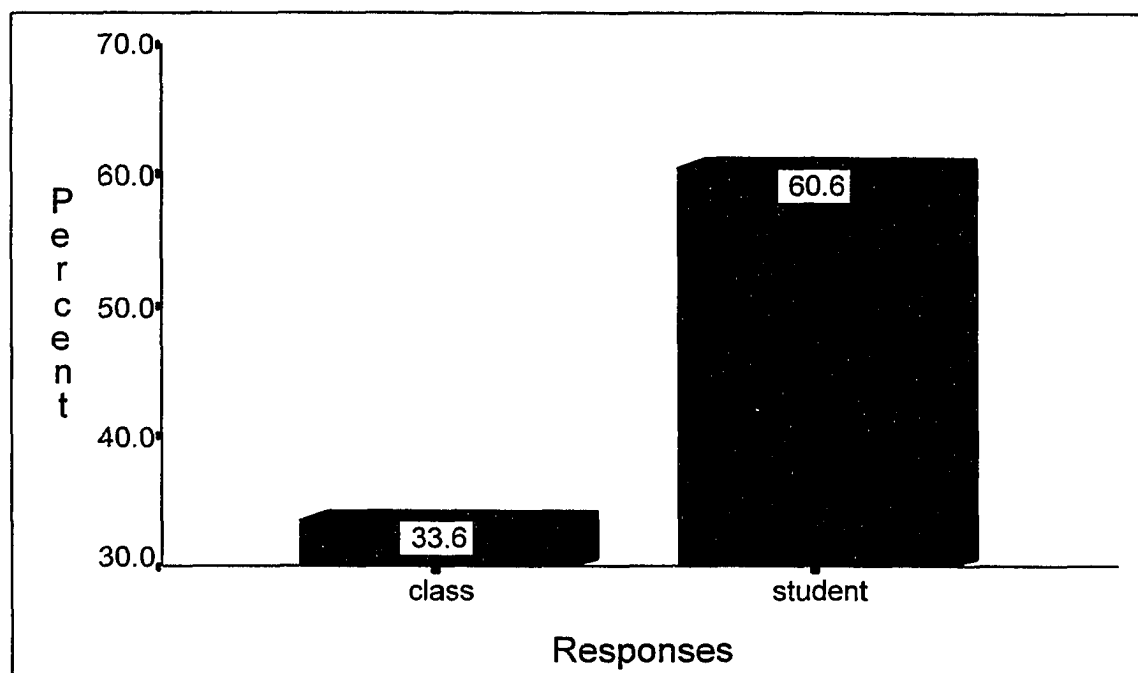
Frequency of Education of Regular Education Teacher In Techniques to Attain the Functional Goals of the Student



Interaction Between Therapist and Student

Question 14 asked therapists to choose the option that best described the structure in their school system of assigning physical therapists to students. According to literature regarding the transdisciplinary approach, team dynamics are thought to be enhanced by a model involving assignment of therapists to specific classrooms rather than specific students. As Figure 10 demonstrates, the majority of therapists do not follow the model of service delivery recommended by proponents of the transdisciplinary approach.

Figure 10

Structure in School System of Assigning Physical Therapists to Students

We were interested in the amount of time therapists were spending in the classroom doing therapy in comparison to therapy involving removal of the child from the classroom environment. Question 15 requested that therapists indicate the percentage of time in which hands-on therapy sessions were carried out in the classroom. The majority of respondents (50.7%) indicated that therapy was carried out in the classroom 25% of the time, 25.4% of therapists held therapy in the classroom 50% of the time, 12.7% carried out classroom therapy 75% of the time, 9.2% never held therapy in the classroom, and 0.7% always treated in the classroom.

The therapists were then asked to indicate the percentage of time in which hands-on therapy sessions were carried out in locations outside of the classroom such as the physical therapy room, hallway, gym, or lunchroom. The majority of respondents (51.0%) indicated that therapy was held outside of the classroom 75% of the time, 24.2%

stated that therapy was not in the classroom 50% of the time, 12.8% indicated therapy was elsewhere 100% of the time, and 10.7% indicated that 25% of the time therapy was held outside of the classroom.

Question 3 was written to determine the type of role the therapist in the school setting is assuming regarding interaction with the student. Table 4 illustrates the amount of time physical therapists spend acting as monitors, consultants, and direct therapists.

Table 4

Role of Therapist

Percentage of Time	Monitor	Consultant	Direct
0-25%	51.3%	74.3%	14.6%
25-50%	30.0%	20.3%	21.9%
50-75%	11.3%	3.4%	35.8%
75-100%	7.3%	1.4%	26.5%

Likert Style Questions

Questions 20-25 were designed to gain insight into therapists' opinions regarding communication, education of the teacher, integration of functional student objectives into treatment plans, and professional role release. Each question is listed below in figures 11-15 and is followed by a bar graph illustrating the percentage of responses based on the Likert scale of strongly agree, agree, undecided, disagree, or strongly disagree.

Figure 11

I Believe There is Sufficient Communication Between the Physical Therapist and the Regular Education Teacher to Adequately Meet the Students' Needs.

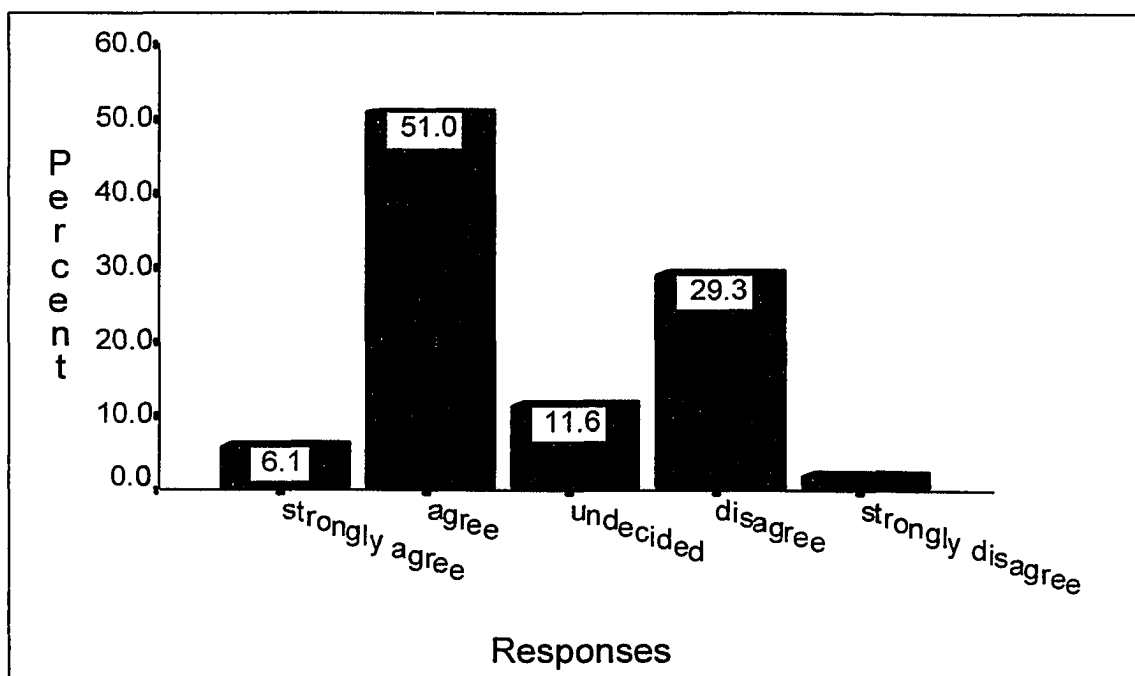


Figure 12

I Believe it is Appropriate to Instruct the Students' Teacher in Physical Therapy
Techniques to Facilitate Functional Educational Goals.

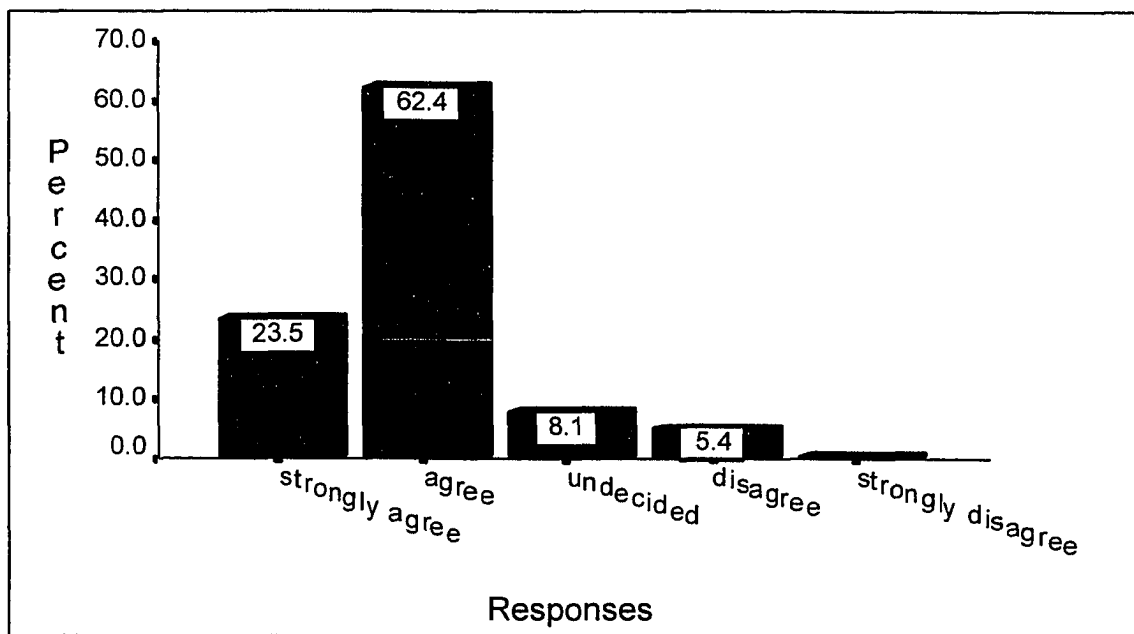


Figure 13

I am Comfortable Integrating Classroom Objectives Into My Physical Therapy Treatment Session (ie. Math Skills, Colors, etc.).

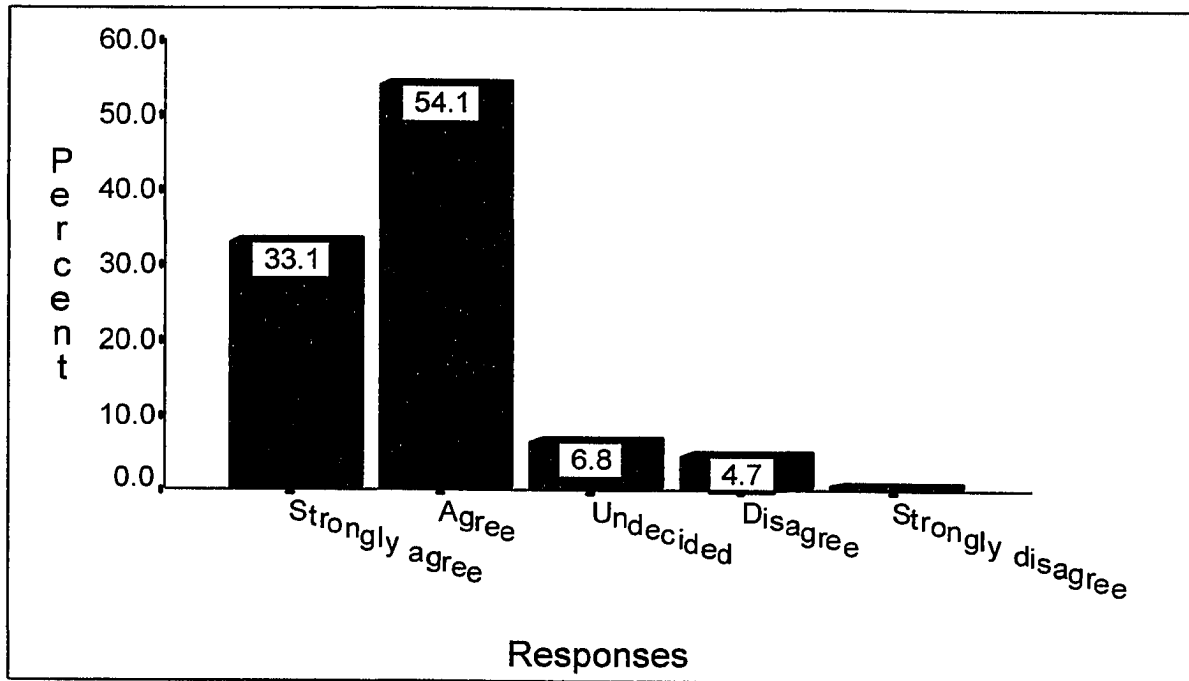


Figure 14

I Believe There is Adequate Sharing of Knowledge and Teaching Strategies Between
Myself and the Regular Education Teacher.

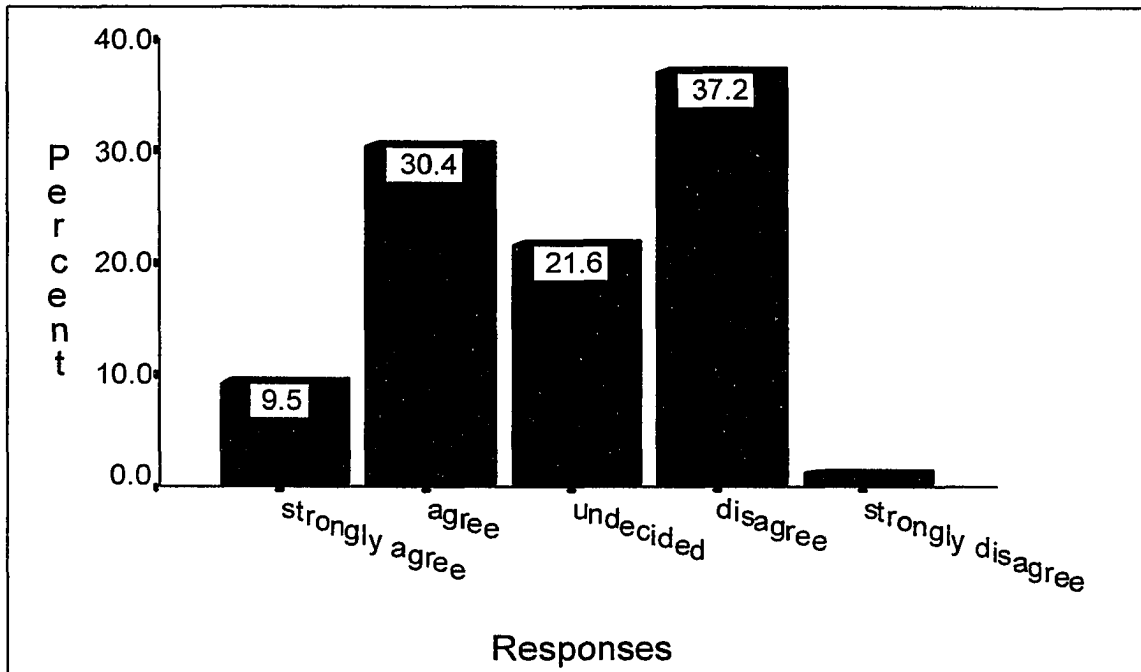


Figure 15

I Believe That All Regular Education Teachers are Adequately Educated Regarding the Knowledge of Diagnoses and Handling Techniques of Disabled Students.

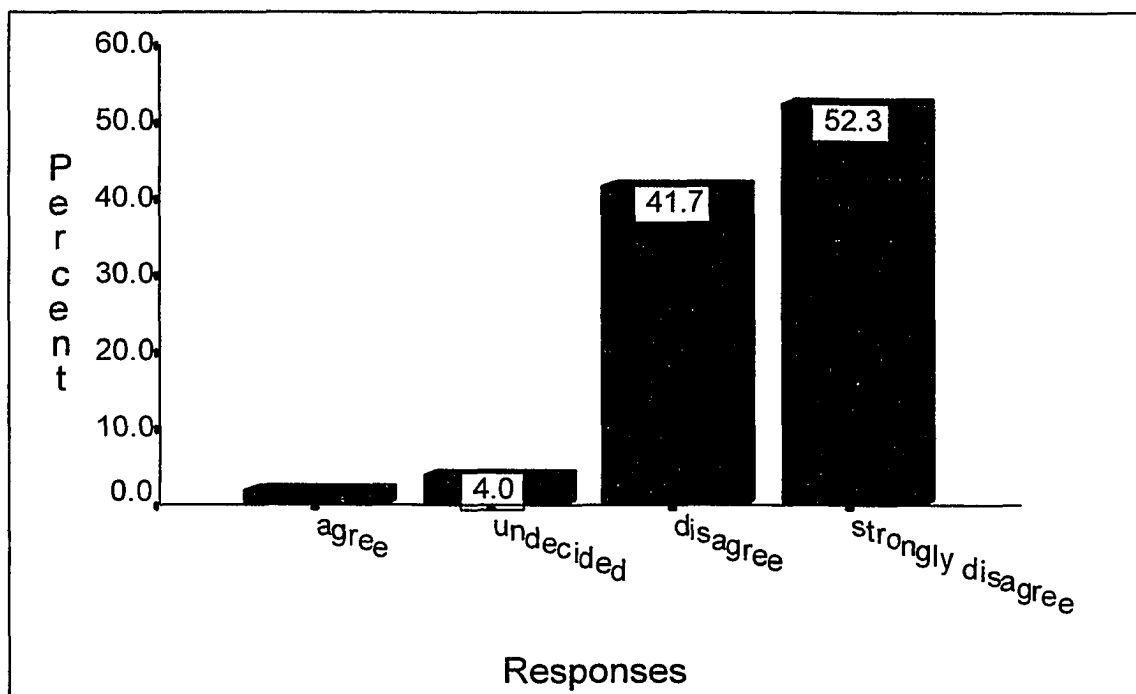
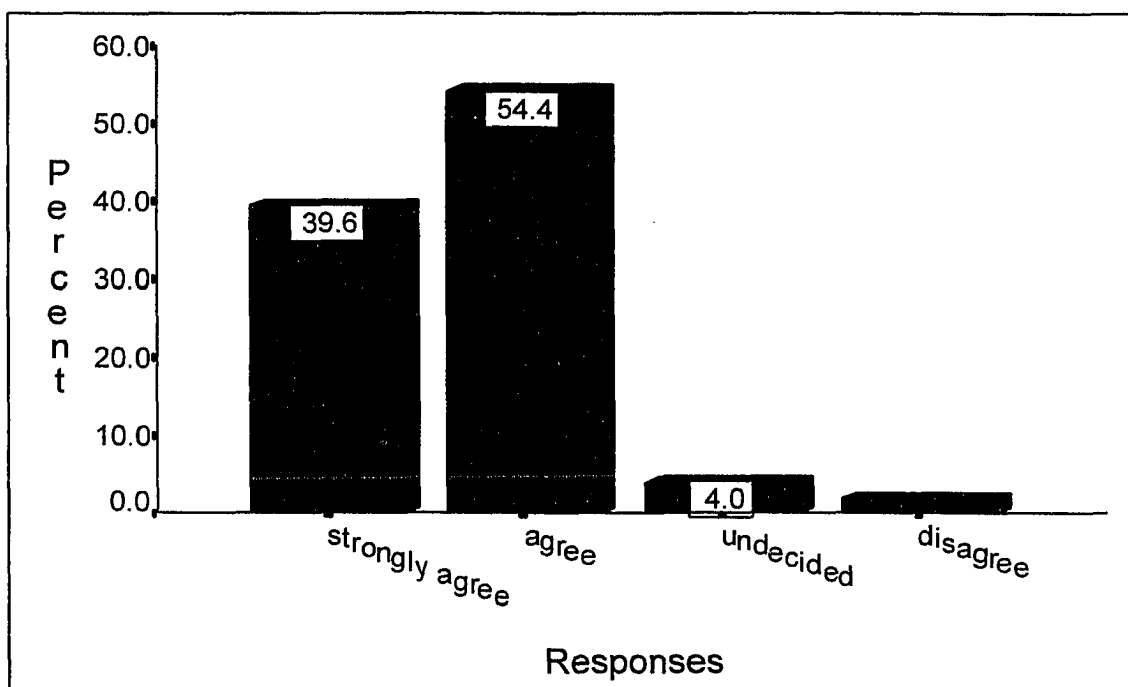


Figure 16

I Believe That Part of My Job is to Provide Inservices for Regular Education Teachers Regarding Diagnoses, Transfers, Positioning Techniques, Basic Treatment Techniques, etc...



Subjective Questions

Three subjective questions were asked at the end of our survey. Comments from this section have been reviewed and will be used throughout the following chapter in discussion of the results of our data.

Chapter Five

Discussion and Implications

The purpose of this study was to determine whether components of the transdisciplinary approach, which is widely promoted theoretically in the literature, are actually utilized by physical therapists who are working in the school setting. We chose to focus our research on the interaction between the physical therapist and the regular education teacher. Our hypothesis was that the components of this approach are not being utilized by physical therapists in their interaction with teachers within the school system.

The enthusiasm of the respondents was demonstrated by a high response rate of 64%. The majority of therapists also provided valuable responses in the subjective portion of the questionnaire and many therapists indicated interest in receiving results of the study. We believe that this demonstrated that therapists are concerned about the interaction between themselves and the regular education teacher.

As inclusion becomes more accepted and promoted within the school setting, the role of both the regular education teacher and the physical therapist must be modified to accommodate the changes. The trend toward inclusion is resulting in greater numbers of students with disabilities in the regular education classroom. This increases the responsibilities of the regular education teacher and requires an even greater emphasis to be placed on increased knowledge of disabilities and classroom management of these students by the teacher. A study by Izen and Brown (1991) indicated that teachers did not feel adequately trained by their educational curriculum to accommodate students with physical disabilities in their classroom.

According to the mandates of PL 94-142, the primary role of the therapist is to assist the student in attaining functional educational goals. This involves educating the student's teacher. In the past, therapists have utilized a direct service role in the child's care within the school setting. However, as more students began to be placed into regular education classrooms, therapists had less time for direct hands-on therapy, thus creating

the need for a role change. Presently, due to time and availability constraints, it is important to increase communication between the therapist and the teacher. As the amount of time for direct service opportunity decreases, the teacher is now more than ever a link between the therapist and the student. The teacher can utilize the therapist to gain knowledge about management of the child in order to assist the child in accommodating to the regular classroom environment.

Question 26 of the survey answered our research question. Our objective was to determine if the transdisciplinary approach, which is highly regarded theoretically, was actually being utilized within the school system by the therapist in their interaction with the regular education teacher.

We found that the transdisciplinary approach was being utilized by 28.7% of the therapists who answered our survey. We hypothesized that this approach was not being utilized in the school system. Therefore, we were encouraged that nearly one-third of respondents indicated use of the transdisciplinary approach.

Nearly half of the respondents (45.3%) reported use of the interdisciplinary team approach, while only 7.3% of the respondents stated they use a multidisciplinary approach. We believe these results indicate a trend toward improved team interactions as compared to the past. We thought it worth noting that 10.7% of the respondents reported use of both the interdisciplinary and transdisciplinary approaches. We have several suggestions why there may have been indecision of therapists between these two approaches.

The fact that some therapists indicated use of both approaches may reflect a gradual shift from use of the interdisciplinary approach to use of the transdisciplinary approach. As more school administrators are becoming aware of the transdisciplinary approach through the literature, the concepts of this approach may be incorporated into the school's team philosophy. Also, because a large percentage of therapists reported traveling to more than one school to provide services it is our belief that they may have indicated use of multiple approaches depending on the specific school setting they were in.

Thirdly, a potential reason for the indecision may have been due to a lack of understanding by therapists of the actual differences between the two approaches. The basis for this is that throughout our research we found it difficult to find standardized definitions for each team approach. The terminology used to describe team interactions is often vague and terms are often used interchangeably simply because of a lack of standardized definitions. It should also be noted that in the clinical setting the terminology used to define an interdisciplinary team encompasses many of the components of what is referred to as a transdisciplinary team approach in the school setting. In the clinic, the term interdisciplinary team arose in the 1970s in the rehabilitation and hospice settings. As well, under the original mandates of PL 94-142 it was the interdisciplinary team model that was the requirement for interaction. It has only been in recent years that, in the school setting, the terminology has expanded to the use of the term transdisciplinary team approach. This approach is an extension of the original concepts under PL 94-142 and more closely matches the clinic definition of an interdisciplinary team. Therefore, those therapists who have worked in a clinical setting prior to entrance into a school setting or those who have not read current literature may not be familiar with concepts of the transdisciplinary approach. Because of the confusion regarding terminology, the need for a written philosophy describing a specific approach to be utilized within the school by all team members is an essential foundation for proper utilization and understanding of each approach. Without a written philosophy, therapists may not have been sure which approach they used in their school system which then resulted in multiple answers in question 26.

According to the information we gathered describing the transdisciplinary approach, a written philosophy is the foundation of the transdisciplinary approach. Based on the answers given in question 2 concerning written program philosophies, 59% of the respondents stated they did not have a written program philosophy defining a specific team approach. Results of Pearson chi-square analysis showed that teams using a

transdisciplinary approach were significantly more likely to have a written program philosophy than were those teams using a multidisciplinary or an interdisciplinary approach. We believe that providing a written model establishes a framework for all professionals to follow. The initiative to define a team approach should come from the administrative level. Ten therapists commented in the subjective section of our survey that administration needs to place a greater value on team planning.

Question 6 attempted to determine the goal setting strategy at the annual IEP meeting. According to the literature, each of the team approaches has specific criteria regarding goal setting during the IEP meeting. When a comparison was made between question 6 and question 26, we found that there were very few discrepancies between percentages for those therapists choosing a particular goal setting strategy with those choosing the same team approach. We believe that this demonstrates that respondents understand that different team strategies are each based on a specific team approach.

Regular team interaction is an essential element of the transdisciplinary approach. The literature states that having regularly scheduled team meetings is one way to establish a foundation for ongoing formal communication. However, legally, under the mandates of PL 94-142, only one team meeting, the IEP meeting, is required per school year. In a recently published study by Effgen and Klepper (1994) it was discovered that 33% of therapists reported teams rarely or never met. With a greater emphasis in the literature now being placed on the importance of team interactions, we were interested in determining if meetings were occurring on a more regular basis. In an article by Gallivan-Fenlon (1994), the ideal amount of interaction was described as one or two team meetings per week. Our results from question 4 indicated that interaction is not occurring this regularly within the school system. Only 9% of the therapists responded that they met one time per week. Our results indicated that the largest percentile of respondents met either one time per year (30.6%) or two to three times per year (29.9%). This meets legal requirements but does not show a trend toward interactions which would meet the criteria

under the transdisciplinary approach. A small percentage (2.1%) did not even meet the legal requirement. We believe these results indicate a trend toward improved team interactions as compared to the past. However, therapists are still not meeting the standards required by the transdisciplinary model. A chi-square test was performed between question 26 and question 4 to analyze data to determine if those therapists who were utilizing the transdisciplinary approach had more team meetings than those using the other approaches. We found no significant relationship between the number of team meetings and the type of approach utilized.

According to many of the subjective comments written by therapists, time constraints and availability problems make it difficult to coordinate meetings with all professionals. One therapist commented "We are rarely invited to school buildings team meetings. It is a constant struggle to be included in all aspects of a child's education. It makes no sense, but many times teachers and principals do not even notify us of team meetings because they assume we are too busy to come." Many of the therapists felt that increasing the number of team meetings would improve the interaction between themselves and the teacher. However, finding ways to realistically accomplish this was difficult for respondents. One respondent stated that "most communication is done on the run, in the hallways, brief conversations in the classroom, or by notes." Therapists stated they feel there should be set times for meetings to be held. As well, therapists feel that it should be accepted that therapy time does not only involve hands-on treatment but also includes time for interaction with others working with the child. One therapist emphasized this by commenting "We need to have protocols for justification of using time usually allotted for direct treatment, for team meetings."

One therapist made several interesting points regarding the importance of team meetings and included an idea to assist the teacher in enhancing availability. She stated, "I feel the first few interactions of the school year are the most important, where I actually set an appointment at the teachers' convenience. After that it would be nice to meet once

a week, but the teacher usually has very limited time due to the numbers of students in the classroom. It would help if the teacher could get some relief time when it was necessary to discuss the student." Most of the therapists responding to our survey indicated that increased interaction would be beneficial for the child. It is the issues of time and availability that make this component of the transdisciplinary approach difficult to realistically implement.

To prevent team members from spending excessive amounts of time in meetings, supporters of the transdisciplinary approach promote another method of assessing student performance and enhancing team communication. This is accomplished through increased documentation. According to advocates of this approach, documentation in the school setting should not be used solely for the purpose of reimbursement or as a reflection of treatment progression. In addition, documentation should also be written so the information can be utilized by all professionals working with the child.

As indicated by the respondents, time to meet one-on-one with teachers is often limited. Therefore, daily documentation becomes essential for enhanced communication and sharing of ideas between professionals. From our past experience in the school setting, we had believed that therapists did not document as regularly as would be expected in a clinical setting. The transdisciplinary approach encourages documentation after every treatment session. We were encouraged to find that 42.7% of the respondents reported use of documentation that is reflective of the transdisciplinary approach. However, this percentage is still less than 50% of all respondents. We found 20.7% of the respondents reported that they documented on a monthly basis and 14.7% documented only two to three times per year.

In the subjective portion of the questionnaire therapists suggested ways in which documentation can enhance interaction between the therapist and the teacher. One therapist suggested "providing teachers with written monthly summaries regarding physical therapy progress and any new suggestions." Another therapist found it helpful to

"copy physical therapy documentation and give it to both the special education teacher and the regular education teacher."

Proponents of the transdisciplinary approach suggest that all documentation should be kept in a centralized location so it is easily accessible to all. This would allow for increased sharing of information about the child between staff members and provide a way to allow for constant communication without having to spend extra time during the day in a team meeting. Question 13 of our survey requested that therapists state whether notes from all team members were kept in a central location that was easily accessible. Results indicated that 70.9% of therapists did not keep notes centralized. When Pearson chi-square analysis was performed, no significant relationship was found between centralization of notes and a specific team approach. We were not surprised from this response because it is a fairly new concept to keep notes in a centralized location. As well, under the law, documentation is only required in the school system at the annual IEP meeting. Therefore, team members are not required to keep daily notes on each child's progress. It was our hope that by asking this question in our survey that we may assist in facilitating the concept of more frequent documentation by all team members. If these notes were then kept in one location, it could assist in communication between all team members and compensate for the difficulties in finding time to organize formal team meetings.

Success of keeping notes centralized, as supported by the transdisciplinary approach, is dependent upon the team's commitment to routinely review the notes. Most of our respondents indicated, on question 11, that physical therapy notes were not reviewed by the teacher. This may be secondary to notes not being accessible to them. Of the 10.7% of respondents who indicated that the teacher reviews their notes, the majority utilize the transdisciplinary approach. Pearson chi-square analysis found this relationship to be statistically significant.

Question 12 attempted to gain insight from therapists into whether the regular education teacher was documenting the students' educational objectives and activities in the classroom. According to the transdisciplinary approach, all team members including the teacher should be maintaining written daily documentation on the child. We hoped to be able to compare the amount of documentation by the therapist to that of the teacher to determine if both professionals were contributing to this component of the transdisciplinary team approach. Unfortunately, this question appeared to cause confusion for many therapists possibly due to the unfamiliarity with this idea. Because a large percentage did not attempt to answer this question and also because of the many subjective comments illustrating confusion, we chose to omit this question from data analysis.

Another aspect of the transdisciplinary approach that assists communication and organization among all professionals working with the child is assignment of a case manager to each child. Question 7 of the survey asked respondents to answer whether there was a case manager assigned to each student who was mainstreamed into the regular education classroom. It was our belief that those responding positively to this question may have a more organized system within their school for team management. Results indicated that 72.3% of therapists reported utilization of a case manager. We found a highly significant relationship between questions 7 and 26. Of the 41 therapists indicating use of the transdisciplinary approach, 39 reported utilization of case managers with only 2 of the 9 therapists using the multidisciplinary approach indicated use of case managers. The use of a case manager assists in providing a communication link between the therapist and teacher.

The role of the therapist in the school system is to help the child reach functional educational goals. Because most goals revolve around classroom activities, good communication between the therapist and the teacher is essential for successful inclusion. From our research and personal experiences, we feel that there should be more interaction

among team members. To investigate the amount of team interaction between the therapist and the teacher question 8 of the survey requested that therapists mark the number of times they met with the teacher regarding students. We found that the greatest percentage of therapists (39.2%) indicated, in that they interact with the regular education teacher on a monthly basis. We were encouraged that only 6.1% of therapists stated they meet only one time per year. We asked the therapists if they believe there is sufficient communication between themselves and the teachers; fifty percent of the respondents agreed with the statement while 29.3% disagreed.

According to subjective comments made by respondents, the largest limitation to interaction between the therapist and teacher is insufficient time. The therapist and the teacher both have very busy schedules which makes it difficult to find meeting times. In the subjective section of our study, 95 therapists indicated that time was their biggest limitation. Thirty-five of those therapists contributed this lack of time to having to travel to many buildings within the school district and to having a very high caseload. They stated the teacher was not usually available during the short period of time they were present in each school. One therapist suggested that it may be helpful to have a substitute teacher travel with the therapist to various schools a few times a semester to relieve the teacher while the therapist works with the teacher and student.

Another limitation to the interaction between the therapist and teacher is the trend toward increased use of physical therapy assistants and classroom aides. Subjective comments by therapists confirmed our belief that there is a staff shortage of therapists in the schools. Because therapists are being required to travel to many different schools, they must assume a more consultative role. This has resulted in the increased hiring of physical therapist assistants and classroom aides to do the job that the therapist was once able to accomplish but no longer can do to added responsibility and time constraints. The therapist is now responsible for overseeing and educating these additional staff members. The utilization of support staff may result in less direct communication between the

therapist and teacher because information must be funnelled indirectly through assistants and aides to the teacher.

Successful team interactions begin with attendance at annual IEP meetings. Through our literature review and discussions with clinicians, we found that the teacher was often not present at the IEP meetings. Therefore, we were surprised when the greatest number of therapists (39.2%) indicated on question 5 that the therapist and teacher were both present at meetings 75-100% of the time. Yet, 23.6% of the therapists said that both were present only 0-25% of the time. The success of the transdisciplinary approach is dependent upon the attendance of all team members at meetings.

The transdisciplinary model supports a concept which would reduce the number of team meetings attended and the number of different team members that each teacher must interact with. It promotes assigning related service personnel to classrooms rather than individual students in order to reduce the number of IEP teams to which each individual is a member (Campbell, 1987). Therefore, the same therapist would always work with the same teacher and all disabled students assigned to that classroom. This reduces the number of team meetings that each discipline must attend, thereby reducing time constraints. Our study found, from question 14, that 60.6% of therapists were assigned to individual students while only 33.6% were assigned to particular classrooms. Many therapists indicated through subjective comments that they had difficulty answering this question as they were the only therapist employed in their school system. This may have influenced our results.

The amount of interaction between the therapist and teacher may also be affected by who employs the therapist. In the past, it was common for physical therapists to be employed directly by the school system. A recent study by Effgen and Klepper (1994) found an increasing trend in the number of therapists who are self-employed or work for outside agencies contracting with schools to provide physical therapy services. Respondents of the survey commented that in some schools, contracted therapists were

paid only for direct student contact time and not reimbursed for meetings, paperwork, and consultation with staff or parents. This could have a very significant negative effect on team interactions. Question 19 was written to determine how the therapist is employed within the school system. Results indicated that 40.9% of the therapists were either self-employed or employed by an outside agency.

The regular education teacher's perceptions and attitudes toward the inclusion process may impact the amount of interaction between the therapist and teacher. One of the respondents commented that "many times, the teacher's acceptance of having a child with a physical or mental disability in the classroom is critical to the interaction between the therapist and teacher. Also, whether the regular education teacher takes ownership for the special needs child or if he or she depends on a special education teacher for programming is critical to interaction." Many therapists discussed in the subjective section that if a teacher does not feel that the child is his or her sole responsibility than he or she may not accept suggestions from the therapist to help reach educational goals. Teachers with this philosophy may be more inclined to send the student out of the room for direct therapy rather than using the therapist as a resource or consultant. It is often part of the therapist's responsibility to act as an advocate for the student's rights and educate the teacher so he or she accepts the disabled student as a productive member of the class.

Educating the teacher should be one of the main roles of the therapist in the school setting. Question 9 was asked to determine how often the therapist educates the teacher. The greatest number of respondents (39.0%) reported that they educate the teacher only two to three times per year. Yet, on question 24 regarding whether the regular education teacher was adequately trained regarding the knowledge of diagnoses and handling techniques of disabled students, 94.0% of the respondents disagreed or strongly disagreed about the adequacy of knowledge. Regarding question 25, 94.0% of the therapists believed that it was part of their job to provide inservices for regular education teachers regarding diagnosis, transfers, positioning techniques, and basic treatment techniques. We

conclude that teachers are not adequately educated and that it is part of their job to educate the teachers, but in reality this is not occurring. As previously stated, a reason for this may be limited time and insufficient availability of the teacher and the therapist.

Locations of physical therapy sessions can affect the type of interaction between the therapist and the teacher. The transdisciplinary approach emphasizes the importance of the delivery of related services in situations in which skills are functional and meaningful for an individual student (Sternat, Messina, Nietupski, Lyon, & Brown, 1977). This component is in accordance with PL 94-142 which states that treatment must assist a child to benefit from his or her educational program. Therefore, according to the transdisciplinary approach, physical therapy evaluations and treatments should ideally be carried out in the classroom, hallway, lunchroom, and any other location that is part of the student's daily routine. It is believed that treatment in these locations will improve interaction between the therapist and teacher. Our results from question 14 showed that the majority of therapists treat students in a specified physical therapy room 75% of the time and in the classroom only 25% of the time which does not correlate with suggestions made by proponents of the transdisciplinary approach.

In 1977 Sailor described teachers as being the only team members who act as direct service providers while all other team members serve primarily as consultants to the teacher. A 1994 survey of pediatric physical therapists throughout the United States who work in school systems concluded that therapists spend an average of forty-five percent of their time in direct treatment and 12% of their time as monitors (Effgen & Klepper, 1994). The results of our survey indicated that the majority of the therapists spent 50-75% of their time in direct treatment and 0-25% of their time as monitors and/or consultants. Our study is fairly consistent with the study by Effgen and Klepper. This demonstrates the continued utilization of direct therapy even with the many changes occurring within the school system structure.

The transdisciplinary approach also supports the controversial issue of professional role release as described by Lyon & Lyon (1980). Role release refers to the ability of professionals with different backgrounds to abandon strict job descriptions in order to share responsibilities and expertise with other team members for the benefit of the child. This concept theoretically results in similar inputs being supplied to the learner on an ongoing basis throughout the day (Giangreco, 1986a). A study by Giangreco (1986b) demonstrated that in order to make the interaction work positively in the child's best interest, both the teacher and the physical therapist must be willing to break down professional barriers and learn from one another.

We were interested in determining how the therapists felt about implementing this concept of professional role release. We asked three Likert scale questions (questions 21, 22, and 23), addressing the issue of role release between the therapist and teacher. In general, our results indicated that therapists did believe they should instruct the teacher in performing physical therapy techniques and the majority indicated that they felt comfortable integrating classroom objectives such as math skills or coloring into their treatment sessions. Yet, when asked if there was adequate sharing of knowledge and teaching strategies between the therapist and teacher, there was a fairly even distribution ranging from agree to disagree. Slightly more respondents disagreed with the statement. We felt that this means team members are beginning to accept this new concept but at this time it remains very controversial.

Question 16 attempted to gain insight into the type of training therapists had received in their school curricula concerning school based therapy. According to the literature, most physical therapy curricula provide general techniques that will be required to practice in a clinical setting (Campbell, 1987). McLaurin (1984) stated in her research that much of the knowledge gained by physical therapists employed within the school environment is from personal experiences and self-study.

Question 16 asked therapists to indicate the type of training they received in their physical therapy curricula regarding school based physical therapy. Results showed that 51.7% of the respondents stated that they had received no training in school based therapy within their curriculum. This finding helps to substantiate the previous literature concerning the lack of educational opportunities regarding school based learning within the educational curriculum.

We feel that all physical therapy curricula should incorporate information regarding school based therapy. From the many subjective comments we received from the returned surveys, there is a shortage of therapists in the school setting. If more physical therapy students were made aware of the opportunities within the school environment, it may assist in sparking interest in this specialized segment of physical therapy and assist in decreasing the shortage. As well, it is essential that all therapy students have a foundation of knowledge on team dynamics. We feel the team interaction required in the school system would be an ideal model to use as an illustration for team approaches. In this respect, students would be learning how to work as a team and would learn how a therapist fits into the school environment at the same time.

In addition, we feel that it would be beneficial for the physical therapy department and the education department to collaborate in order to provide the two groups of future professionals time to educate one another on their roles. This would establish a foundation of knowledge between the two professionals and help to decrease the territorialism that often exists between the professions.

Limitations of the Study

One limitation of the study was the inclusion criteria. When we sent out the study we knew that the therapists worked in a school setting; however, there was no way of knowing if they would meet our inclusion criteria. If we had been able to find a

population of therapists whom we knew fit our criteria before sending the survey, our rate of return may have been greater.

Another limitation of the study was the use of the term mainstreaming rather than the term inclusion. We chose to use the word mainstreaming to describe placement of the child into the regular education classroom because we felt the term inclusion was still being defined within the educational environment. However, in retrospect we have found that the term inclusion is currently more commonly used than the term mainstreaming. Our terminology was considered "outdated" by a few respondents of our survey.

The next limitation to our survey was the percentage of respondents who chose more than one answer to questions in which only one response was requested. We feel that this may have been due to the fact that many of the therapists were traveling to several schools to provide services to students. Therefore, the survey may have been difficult to answer because each school system may have had a different or conflicting team approach. We feel there was no way to predict that this would occur and has actually been an interesting point of discussion because much of the difficulty with interaction, according to many of the subjective comments, is due to the large amount of time spent traveling between schools.

Another limitation of our study is based on difficulties we encountered when trying to specifically define each team approach. As we researched the literature, we found that authors often defined each team approach differently. Therefore, it was difficult to construct a definition for each approach that was supported by all of the literature. We felt that some of the difficulty that respondents had in answering the questions regarding specific team approaches may have been due to the lack of understanding of the differences between each approach or a lack of definitions that were specific enough for them to understand the differences.

The transdisciplinary approach is a relatively new concept in the literature. Therefore, some of the terminology used in the survey may not have been familiar to

respondents, especially those therapists who have been out of school longer or who may not read current literature. We could have helped clarify questions by defining more terms for the respondents.

Another limitation to our study was that we never asked the therapists for their opinions regarding the transdisciplinary approach. By doing this at the end of our survey or in the subjective portion, we may have gained further insight into whether therapists feel this approach is realistic and how familiar they are with its components.

A final limitation of our study is that we did not address the delegation and use of assistants and aides. This may have influenced our results as some therapists may rely heavily on their use with less direct communication with the teacher, while other therapists do not use aides so their only mode of interaction is through direct communication. The teacher may be educated the same amount in each scenario but our survey results would not be specific to this problem as we did not ask questions regarding utilization of physical therapy assistants and aides. It would have also been helpful to know that if assistants and aides attend all team meetings.

Suggestions for Further Research

After completion of the literature review and data analysis, we have several suggestions for expansion of our research into further study. Because our survey was directed to only one type of related service personnel, the physical therapist, we were unable to generalize or compare viewpoints with other professionals. An expansion of this study would be to survey the other members of the team to gain further insight to what type of team approach they are utilizing.

Another suggestion for further research would be to compile a more specific survey directed at one component of the transdisciplinary approach such as documentation, utilization of case managers, or frequency of team meetings. This would

allow a more specific focus to be taken on one component of the transdisciplinary approach.

Many of the therapists who returned our survey reported conflicting views on the topic of physical therapy treatment taking place within the classroom. Because there was such controversy by therapists regarding this issue and it is a debated issue in the literature as well, expanding on this subject would make an interesting topic for further research. It may help to determine why there are such conflicting views and increase awareness of some of the reasons behind the difficulty in implementation of this component in the school system.

Another area we found of interest was the number of therapists who reported travelling to more than one school to conduct therapy. More research could be done to determine the long-term effects of increased travel time on the type and quality of service being rendered.

Through our research we found an increase in the number of therapists who are self employed or contract with an outside agency. More investigation could be done on how this is affecting service delivery in terms of reimbursement for services and amount of interaction with the child as well as its affect on team interactions.

Lastly, our study did not address the increased utilization of paraprofessionals in the school setting such as physical therapy assistants and classroom aides. Many of the therapists who responded to our subjective questions mentioned the use of support staff. It would be beneficial to do further research to determine how these paraprofessionals are being utilized and how this may be affecting team dynamics and interaction time between related service personnel and the teacher.

Conclusion

We feel that by simply sending the survey and by forcing therapists to evaluate their own team interaction, we were able to increase awareness of the importance of

regular team interactions and the use of a specific team approach. Although we are not proponents of any one approach over another, we believe that many of the concepts of the transdisciplinary approach do assist in enhancing interaction between team members.

Also, as more demands are being placed on the therapist and teacher it is going to be even more vital that interactions between these professionals remain strong for the well-being of the child.

We conclude that therapists are beginning to utilize components of the transdisciplinary approach in the school setting. We also found that many of the therapists have a desire to increase interaction between themselves and the regular education teacher but find that time and availability constraints cause the ideal interaction to be unrealistic.

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APPENDIX A

Human Subject Review Approval Form



1 CAMPUS DRIVE • ALLENDALE MICHIGAN 49401-9403 • 616/895-6611

August 16, 1994

Jennifer Bunker, Jennifer Moak
10684 Linden Dr. Apt. D
Grand Rapids, Mi 49504

Your proposed project entitled "*Investigating Use of the Transdisciplinary Approach Assessment of the Interaction between the Physical Therapist and the General Education Teacher*" has been reviewed. It has been approved as a study which is exempt from the regulations by section 46.101 of the Federal Register 46(16):8336, January 26, 1981.

Sincerely,

A solid black rectangular box redacting the signature of Paul Huizenga.

Paul Huizenga, Chair
Human Research Review Committee

cc: Jane Toot

APPENDIX B

Cover Letter

October, 1994

Dear Physical Therapist,

We are physical therapy students in the process of completing our final year of study in an entry level master's degree program at Grand Valley State University in Allendale, MI. In order to fulfill the graduation requirement at our university, we are conducting a research thesis.

The following questionnaire has been formulated in order to obtain information regarding the role of the physical therapist in the school setting as mandated by Public Law 94-142. Specifically, we are interested in assessing the interaction between the physical therapist and the general education teacher within the school system.

As professionals working in this environment, your insight would be of great benefit to us as we investigate the role of the physical therapist in this specialized setting. The information we hope to gather will assist us in substantiating the literature and research we have been accumulating throughout the past year.

All completed questionnaires will remain anonymous and confidential. Your informed consent will be assumed by the completion of the questionnaire.

In order to meet our research deadlines and do a thorough data analysis, we request that all surveys be returned by October 24, 1994. A self addressed stamped envelope has been enclosed for your convenience.

Once again, thank you for your time and for your willingness to share your experiences working in the school system with us.

With Sincere Thanks,

Jennifer C. Bunker, SPT

Jennifer M. Moak, SPT

Jane Toot, Ph.D., P.T.
Director of GVSU Physical Therapy Dept.
Committee Chairperson

APPENDIX C

Questionnaire

Team Dynamics: Investigating The Interaction Between the Physical Therapist and the Regular Education Teacher within the School Setting

1. Do you currently work in a school setting with children, kindergarten through 6th grade, who participate either part-time or full-time in a regular education classroom? If your answer is NO then do not complete the rest of the survey but please mail back your response to the researchers.
- YES NO

PLEASE RELATE THE FOLLOWING RESPONSES TO YOUR EXPERIENCE WITH STUDENTS MAINSTREAMED INTO THE REGULAR CLASSROOM.

2. Does your school have a written program philosophy regarding a specific team approach to be used among all professionals working directly with the student?
- YES NO

3. Please mark the percentage of time you spend in each of the following roles:

Monitor: The therapist is responsible for the assessment, program planning, establishment of goals and activities, and training and supervision of *others* to carry out these activities with the child.

0-25% 25-50% 50-75% 75-100%

Consultant: The therapist is responsible for giving advice, assistance, or an opinion based on professional knowledge to assist *other professionals* in implementing *their* goals for the student. The therapist does not intervene personally and does not give ongoing training, supervision or monitoring.

0-25% 25-50% 50-75% 75-100%

Direct Service: The therapist is responsible for the delivery of "hands-on" activities to achieve specific physical therapy goals as defined in the I.E.P. in a one-on-one or small group setting.

0- 25% 25- 50% 50-75% 75-100%

4. How often are team meetings held in your school system for students receiving special services?
- 1 time per year
 - 2-3 times per year
 - Monthly
 - Weekly
 - Never

5. Please mark the percentage of team meetings that both the physical therapist and the regular education teacher are present.
- 0- 25% 25- 50% 50-75% 75-100%
6. What is the goal setting strategy during the I.E.P. meeting?
- Each team member formulates and implements his or her individual goals for a child. Goals are then read aloud with minimum to no discussion among team members.
- Each team member formulates and implements his or her individual goals for a child. Goals are then read aloud and all disciplines are encouraged to provide their input regarding these goals.
- A holistic set of goals is formulated by all team members while at the I.E.P. meeting and then each discipline works toward attaining these goals.
7. Is a case manager assigned to each student mainstreamed into the regular education classroom?
- YES NO
8. How often do you interact with the regular education teacher on an individual basis regarding a specific student?
- 1 time per year
 2-3 times per year
 Monthly
 Weekly
 Never
9. How often do you educate the regular education teacher in techniques to attain the functional goals of the student?
- 1 time per year
 2-3 times per year
 Monthly
 Weekly
 Never
10. How often do you document the treatment/progress of each child?
- 1 time per year
 2-3 times per year
 Monthly
 Weekly
 Every treatment session
 Never

11. Are physical therapy notes of individual students routinely reviewed by the regular education teacher?

YES

NO

12. Does the regular education teacher document students' educational objectives/activities in the classroom?

YES

NO

13. Are treatment/progress notes from all team members kept in a central location that is easily accessible?

YES

NO

14. Chose the option that best describes the structure in your school system of assigning physical therapists to students.

- Therapists are assigned to particular classrooms and treat all disabled students that enter those classes and have physical therapy referrals.
- Therapists are assigned to individual students who are referred to physical therapy regardless of what classroom they are in.

15. Please indicate by percentage the locations in which "hands-on" physical therapy sessions are carried out (total should add up to 100%).

Classroom

Other (PT room, hallway, gym, etc.)

0%

0%

25%

25%

50%

50%

75%

75%

100%

100%

16. Circle the type of training you received in your physical therapy curriculum concerning school based PT (check all that apply).

- 1-5 lectures
- One class specific to the topic
- Clinical work
- None

17. How many years have you been employed in the school system? _____

18. What year did you graduate from physical therapy school? _____

19. I am employed by:

- A school system.
- An outside agency which contracts with the school.
- Self-employed and contract with a school system.

20. I believe there is sufficient communication between the physical therapist and the regular education teacher to adequately meet the students' needs.

Strongly Agree Agree Undecided Disagree Strongly Disagree

21. I believe it is appropriate to instruct the student's teacher in physical therapy techniques to facilitate functional educational goals.

Strongly Agree Agree Undecided Disagree Strongly Disagree

22. I am comfortable integrating classroom objectives into my physical therapy treatment sessions (i.e. math skills, colors, etc.).

Strongly Agree Agree Undecided Disagree Strongly Disagree

23. I believe there is adequate sharing of knowledge and teaching strategies between myself and the regular education teacher.

Strongly Agree Agree Undecided Disagree Strongly Disagree

24. I believe that all regular education teachers are adequately educated regarding the knowledge of diagnoses and handling techniques of disabled students.

Strongly Agree Agree Undecided Disagree Strongly Disagree

25. I believe that part of my job is to provide inservices for regular education teachers regarding diagnoses, transfers, positioning techniques, basic treatment techniques, etc.

Strongly Agree Agree Undecided Disagree Strongly Disagree

26. How would you describe the team approach to treatment in your work setting?
- Multidisciplinary: Each discipline performs separate assessments, forms individual goals, and follows with an isolated treatment program.
 - Interdisciplinary: Each discipline performs separate assessments, shares results with other team members, plans a comprehensive program as a team, and then delivers treatment in isolation.
 - Transdisciplinary: Coordination of parents, educators, and related services personnel in order to collaboratively determine student goals, provide direct and consultative therapy services, integrate intervention methods, and monitor students' progress.
 - Not defined
27. Do you feel there are any limitations in the interaction between yourself and the regular education teacher? Please discuss.
28. How do you feel the interaction between yourself and the regular education teacher could be improved?
29. What is your attitude toward performing physical therapy treatments in the regular education classroom?

APPENDIX D

Regional Divisions

