

# Transdisciplinary Teamwork and Integrated Therapy: Clarifying The Misconceptions

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The provision of *transdisciplinary* and *integrated therapy* services for students with severe disabilities in educational settings has been widely discussed in practice and in the literature. While there are many proponents of the model, a great deal of controversy and confusion exists. Much of the controversy centers around issues of role clarification, logistical and practical constraints, and discipline accountability and liability in assessment and intervention. This article was written as a complement to an earlier article "Providing related services to learners with severe handicaps in educational settings: Pursuing the least restrictive option."<sup>1</sup> In the earlier article, a rationale for and discussion of educationally related therapy services that are transdisciplinary and integrated were provided. The purpose of this article is to further the service provision discussion by presenting common misconceptions and related clarifications for transdisciplinary and integrated therapy services provided to students with severe disabilities in educational settings.

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*Transdisciplinary services* were first advocated for infants, children, and adults with developmental disabilities in the 1960s.<sup>2</sup> Since then, transdisciplinary services have been consistently identified as an exemplary practice in special education for students with severe disabilities.<sup>3-8</sup> Two features that distinguish transdisciplinary teamwork from traditional more isolated team approaches are (a) a high degree of collaboration and joint decision-making among team members (including parents) in conducting assessments, establishing program priorities, and designing and implementing individualized educational programs; and (b) teaching the skills traditionally associated with one discipline to other team members who function in direct service capacities and work directly with learners throughout each day across a variety of environments and activities (role release). Such collaboration and sharing of expertise provides an opportunity for team members to design and implement interventions that are more frequent, consistent, and comprehensive than in traditional models where team members work in relative isolation from one another. A related approach, termed *integrated therapy*, was devised as a way to provide therapeutic intervention as a student engages in everyday routines, by infusing disciplinary methods into instruction that occurs in typical home, school, and community environments.<sup>9-10</sup> In most situations, integrated therapy services are necessarily transdisciplinary since discipli-

nary methods and skills must be taught to the team members from other disciplines who instruct the student in various educational environments and activities.

In a recent article by the authors,<sup>1</sup> a rationale, discussion, and examples of transdisciplinary and integrated therapy services for students with severe disabilities was provided. Such services were described and advocated as the "least restrictive option" in educational settings for students with severe handicaps for the following reason. "Least restrictive" by definition infers "most integrated" reflecting support of the federal mandate that children with disabilities are to be educated alongside their peers without disabilities to the maximum extent appropriate.<sup>11</sup> Because the reason for providing therapy services in the public schools is to enhance student performance in the educational program,<sup>12</sup> the principle of "least restrictive" is logically extended to the provision of therapy and other related services. Specifically, the primary responsibility of therapists in the public schools is to design interventions that improve students' abilities to access, participate in, and benefit from their educational program. Such interventions cannot be designed or validated as educationally related unless therapists understand students' needs. At a minimum, this requires that therapists observe students functioning during educational activities and collaborate with other team members in the process of analyzing why performance difficulties exist and how best they can be addressed. The reader is referred to the earlier article for a more comprehensive discussion of this topic and more specific examples and applications.<sup>1</sup>

In many educational programs, the benefits of *transdisciplinary* and *integrated therapy* approaches have not been fully realized because confusion exists about what a transdisciplinary approach is, why it can be beneficial to both learners and team members, and how it can be successfully implemented. The confusion can be partially attributed to a

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"bandwagon effect."<sup>13</sup> As the transdisciplinary model became vogue, a variety of approaches were inaccurately labeled transdisciplinary. When critical components of the transdisciplinary model are omitted, distorted, or taken out of context, the probability of developing misconceptions and subsequent misuse increases. The purpose of this article is to identify and clarify some of the major misconceptions regarding transdisciplinary and integrated therapy services for students with severe disabilities in educational settings.

*Misconception #1: In the transdisciplinary model, individual disciplines do not perform discipline-referenced assessments.*

*Clarification #1: Transdisciplinary assessment has two components. First, the environment-referenced assessment identifies the context and functional targets of instruction. Second, the discipline-referenced assessment determines how an individual's disability influences function and serves as the basis for identifying effective intervention procedures. Each professional works directly with the learner during discipline-referenced assessment.*

Both professional ethics and the principles underlying the transdisciplinary model require each discipline to retain responsibility for many aspects of assessment.<sup>14</sup> The assessment process may take many different forms, however, depending upon the purpose of assessment. The purposes of assessments for students with severe disabilities in educational settings are (a) to identify discrepancies between the learner's actual and desired performance in relevant home, school, and community environments; and (b) to identify strategies that will effectively remediate or accommodate for those discrepancies. Thus, the assessment provides information needed to design an Individualized Education Program (IEP) that is relevant to each learner.

In a traditional approach to assessment, each team member conducts a comprehensive, independent evaluation of learner abilities specific to the respective disciplinary area of expertise. This is referred to here as a discipline-referenced assessment. These assessments focus on skills specific to the respective discipline (e.g., motor skills) and generally do not occur under natural conditions, i.e., in the context of ongoing daily activities. Such assessments provide a limited basis for effective or efficient intervention recommendations. When Bricker and Campbell<sup>15</sup> studied the effectiveness of this traditional approach, they found that it produced conflicting results, conclusions, and recommendations among professionals, even among professionals of the same discipline. Furthermore, follow-up analysis revealed that very few (only 17%) of the original recommendations were ever implemented. Bricker and Campbell concluded that traditional assessment practices cost excessive amounts of time and money and yield a minimal amount of programmatically useful information.

The results of the Bricker and Campbell study call into question two common, albeit sometimes inadvertent, practices of therapists in educational settings: conducting independent discipline-referenced assessments in isolated contexts; and spending the first two and last two months of the school year on assessments, leaving a maximum of six months for intervention. Discipline-referenced assessment provides only one important source of information for program planning and implementation. An alternative to exclusively discipline-referenced assessments is to incorporate an approach to assessment referenced to specific environmental demands in daily activities. One way to combine the two approaches is outlined below.

A recommended best educational practice for learners with severe disabilities, especially those at middle and high school age, is instruction that occurs in off-campus community environments.<sup>16-17</sup> This provides the opportunities for team members to assume relevance in assessment. First, team members, including parents, collaborate to identify

priority home, school, and community environments and activities in which enhanced learner performance is desired.<sup>18</sup> Second, designated team members assess the learner's current abilities within the priority environments and activities. Integral to this assessment is identification of functional difficulties and a determination of intervention methods that will enhance function. That is, team members observe whether or not the learner can perform specific skills within the priority environments and activities and also hypothesize the reasons for performance discrepancies. For example, a physical therapist conducting an assessment of a learner's functioning at a public library might identify descending curbs, pushing a revolving door, negotiating an inclined ramp between the book stack areas, and carrying books to the check out counter as performance difficulties. The communication specialist might identify performance difficulties and consider initial intervention strategies related to greeting library workers, requesting assistance, and locating specific magazines. After assessing learner performance in natural environments and activities, a therapist may need to conduct a more in-depth, discipline-referenced assessment to better determine reasons for difficulties and effective intervention practices. At this point, however, the discipline-referenced assessment is focused on obtaining diagnostic and intervention information of specific relevance to performance difficulties identified during the environment-referenced assessment. Repeatedly, we have observed that discipline-referenced assessments that are focused to address environment-referenced difficulties yield more appropriate and programmatically useful information.

Given the logistical constraints of practice, it is frequently difficult for all team members to assess the performance of all learners in all designated educational environments and activities at the start of the school year or prior to projecting initial priority objectives related to each environment. Team members must plan collaboratively, therefore, to determine which disciplines should be involved during an initial assessment in educational environments and which disciplines might be involved somewhat later in the programming process. For example, for a secondary student with multiple disabilities, the IEP team decided that the physical therapist was the most critical team member to conduct the assessment of the learner's functioning in a community-based job site. This decision was made based on the fact that the primary areas of difficulty related to work were the learner's ability to remain positioned appropriately and to use her arms in the most efficient manner. Other team members coached the physical therapists as to other aspects of assessment that she would address at least to some degree in the initial assessment, including ways to facilitate greeting co-workers and strategies for sequencing the work activity. Perhaps the most instructionally beneficial initial assessment would include more than one team member which promotes more exchange of information and problem-solving. Unfortunately, joint assessments can be difficult to achieve practically in all situations, particularly in off-campus community environments.

One additional area of discussion related to assessment practices in educational settings for learners with severe handicaps relates to the annual review of the Individualized Educational Program (IEP) and the three-year comprehensive assessments required by law. The IEP is the basis of ongoing and end of the year (annual review) assessments. All annual instructional priorities are included in the IEP in the form of goals and objectives. The team is required to provide both ongoing (throughout the year) and end of the year performance data for the priority goals and objectives included on the IEP. As a general rule, individual team members need not spend time every year conducting assessments on a wide range of activities not addressed in that year's IEP. The most important targets of assessment

are those identified as instructional priorities. For an occasional learner with severe disabilities who makes progress very quickly or whose needs are very complex, a therapist may choose to keep assessment information on additional selected problems or needs. Joint range of motion measurements, for example, may be documented bi-weekly for a learner at risk for hip dislocation. For many students with severe disabilities, every three years (when a comprehensive evaluation is required by law) is a reasonable period at which to conduct a comprehensive and discipline-specific assessment that extends beyond performance related to specific IEP objectives.

One final clarification related to assessment seems appropriate. None of the preceding discussion should be interpreted as recommending less sophisticated or diminished quality of assessments conducted by therapists. Instead, the emphasis is on assessment conducted in priority educational environments and activities identified by the team. Environment-referenced assessment identifies the context of instruction, i.e., the educationally relevant functional difficulties. Discipline-referenced assessment focuses on analyzing reasons for functional difficulties and determining effective interventions.

*Misconception #2: Writing team IEPs entails determining priorities from each discipline perspective, then collating these priorities into one "Team IEP." Keeping IEPs organized by discipline areas ensures a higher degree of accountability.*

*Clarification #2: Transdisciplinary team members reach a consensus to select a single set of priority goals for each student. The student has one collaborative IEP in which goals and objectives specify functional outcomes referenced to performance in priority educational environments and activities. Goals, objectives, strategies, and materials integrate input from all appropriate disciplines. Each discipline does not have a separate IEP section.*

In educational settings, having separate IEPs or sections of IEPs for each discipline is incongruent with the rationale for including a variety of disciplines on the educational team. The goal of a public school education for learners with severe handicaps is preparation for participation in typical home, school, work, leisure, and other community settings.<sup>19</sup> This desired outcome kept clearly in mind provides team members with a common basis for determining priorities. A common understanding of learner functioning in many different environments and activities increases the likelihood of consensus on overall educational priorities, instead of priorities conceived from within a single discipline perspective. Team members bring their collective expertise to bear on student performance difficulties in educational environments and activities.

The first step involved in writing IEP goals and objectives is for the team to agree on priority environment-referenced goals and objectives for each student.<sup>16-18</sup> With these identified, each team member contributes expertise that may assist the learner to realize those objectives. Perhaps one of the most difficult team functions is to determine priorities for instruction given the thousands of activities and skills that students could learn. After identifying the array of possible instructional targets, teams use pre-determined criteria to evaluate proposed objectives. The following questions often serve as criteria:

1. Is the skill or task functional for this student?
2. Would performance increase inclusion with peers?
3. Is it appropriate to the student's chronological age?
4. Will it be important for the student in the future as well as now?
5. Will it make a real difference in the quality of the student's life?

6. Does it reflect student and family priorities and preferences?

7. Does it address important health and/or safety needs?

Even when making decisions based on these criteria, however, team members must recognize that it is impossible to address every need presented by a student with numerous and complex needs.

IEP goals and objectives should reflect the combined environment-referenced and discipline-referenced approach to assessment.<sup>20</sup> One logical way to do this is for goals to identify educationally relevant priority environments and activities (i.e., context) where performance is desired. The corresponding objectives specify the priority skills for the student to acquire so that participation in the environments is improved. Organized in this way, goal and corresponding objective sets relate directly to educational priorities. For example:

Long-term goal:

Bill will purchase and eat a meal in a fast food restaurant.

Short-term objectives:

- 1) After the teacher opens the door, Bill will independently wheel next to the door to brace it open, then wheel through the doorway in a controlled manner, for 3 of 4 consecutive trips.
- 2) Bill will independently take out his multiple-item line drawing menu and point clear to his choices at the ordering counter, for 5 of 6 consecutive trips.
- 3) When given a verbal reminder, Bill will wait for a friend before selecting where to sit, for 5 of 6 consecutive trips.

After reading each long-term goal and its related short-term objectives, both the context for instruction (i.e., fast food restaurant) and the priority skills to be addressed are readily known. Traditional (i.e., exclusively discipline-referenced) IEP goals and objectives would identify priority skills but usually would not reference a corresponding context for performance. Further, short-term objective 1 above, for example, would likely have been part of the physical therapy IEP and objective 2 part of the speech IEP. The organization recommended here forces team members to identify outcomes related to context and function and increases the likelihood that students will actually demonstrate skills in functional life activities.

When team members integrate disciplinary- or skill-oriented objectives into goals referenced to environments and activities, concerns for discipline visibility and accountability can arise. That is, if the physical therapist does not have her own section of the IEP, how will she account for her input? One simple solution is to have each team member initial the short-term objectives for which she or he will have significant responsibility. Another option, for when the IEP has a section for "Strategies and Materials," is to list the appropriate discipline(s) for each objective in this strategies section.

*Misconception #3: Providing therapy in the classroom is integrated therapy.*

*Clarification #3: Providing therapy in the classroom is not necessarily integrated therapy. In order for therapy to be considered integrated, techniques are integrated into the instruction provided during educational activities.*

It is impossible to provide integrated therapy services when team members confine themselves to isolated treatment rooms. Therefore, exchanging the therapy room for the classroom (or other educational environment) is a necessary first step toward providing integrated therapy. Once in the classroom, therapists observe and participate with students and other team members engaging in routine activities, determine disciplinary intervention strategies to increase the effectiveness of instructional programming, provide staff instruction and supervision in implementing the strategies, devise methods to evaluate the effectiveness of interventions, and participate in data collection and analysis. When therapists do provide direct "hands-on" services using an integrated therapy approach, it is provided within the context of educational environments and activities. This is different from therapy activities merely moved to the classroom. As children grow older and their programs expand to include instruction in off-campus community environments, integrated therapy becomes a necessary component of those activities as well.<sup>10</sup> Therefore, therapists on transdisciplinary teams may assist in developing and implementing programs on buses, in restaurants, post offices, or various other community, work, and leisure settings. In this way, the transition from isolated to integrated therapy requires expansion of both the activities and the settings in which therapy services and interventions are delivered. Therapy input becomes a support to the educational program (i.e., related educational service) instead of being a program or service itself.

*Misconception #4: A transdisciplinary approach involves exclusively indirect therapy services. Therapists do not work directly with learners, and learners receive less intensive therapeutic input.*

*Clarification #4: To be an effective provider of indirect therapy services, the therapist must maintain direct, hands-on interaction with learners. Over time, effective indirect models offer learners more "therapeutic" input than direct models.*

Therapy expertise provided to learners with physical disabilities frequently includes dynamic positioning and handling procedures that promote functional movement for mobility, hand use, and communication. In the purest application of a transdisciplinary model, therapy expertise is provided on an ongoing basis through the team members who have the most frequent and direct contact with learners, e.g., teachers and assistants. Therapy services, therefore are *indirect* in that team members who are not therapists are usually responsible for using educationally relevant "therapy" methods after adequate training from the therapist.<sup>21</sup> Services are *integrated* in that the therapy expertise is provided as an integral part of programming that occurs in educational environments and activities across the day. Frequently, the term *consultation* has been used to distinguish between the roles of support staff and primary implementors, where support staff provide ongoing consultation to the primary implementors. In educational programs adhering to a transdisciplinary and integrated therapy approach, teachers and assistants usually are the primary implementors due to logistical factors. For some students or environments, however, the team may decide that a therapist should be the designated primary implementer with the teacher serving in the role of a consultant.

For therapists to remain effective trainers of other staff, as well as learners, they must continue to engage in "hands-on" interactions with learners to determine effective strategies, to assess performance on an ongoing basis, and to continue developing their own assessment and treatment skills. An effective transdisciplinary model cannot be maintained if therapists are removed from working directly with children. Effective indirect services require a direct "hands-

on" component with retained accountability. The therapist does not release evaluation skills, accountability, or responsibility for therapy related aspects of integrated programming. When serving as a consultant, therapists continue to work "hands-on" with students but usually do so in the context and educational activities. Further, therapists may see and work directly with each student less frequently but in a greater number of activities.

One of the primary reasons for establishing transdisciplinary services is to provide learners with more frequent and functional opportunities to demonstrate improved posture and movement. Improved posture and movement are desired *primarily* to improve learner participation in functional, daily activities. By implementing integrated therapy services in educational programs, therapists (and other team members) can be assured that learners do, in fact, demonstrate improved motor competence in daily educational environments and activities. In a direct service model, therapists work with learners on the average of two or three times a week for 30 minutes. Although a transdisciplinary approach may mean less frequent direct therapy contact, there is a corresponding increase in the frequency and intensity of indirect services. Effective application of a transdisciplinary model provides learners with the opportunity to practice improved posture and movement in many functional activities throughout each school day. Initially, primary implementors may not demonstrate handling skills comparable to the therapists, but close approximations can be achieved. With ongoing training, practice, and supervision, many primary implementors can demonstrate competent handling skills. Just as most therapists require repeated opportunities to develop effective handling skills in training, so too must others be provided with opportunities and constructive feedback. Albano<sup>22</sup> reports in her research that team members were proud of their transdisciplinary efforts when observers could not distinguish between the therapist and other team members. Therapists felt they had an extra pair of "therapy eyes watching" and "therapy hands handling" learners at times when the therapist was not around. Teachers could explain to parents the reasons and procedures for therapy procedures integrated into daily activities. To the team members in the case study, these were indicators that the learners were receiving the best possible attention to positioning, handling, and movement development needs throughout each school day.

Although transdisciplinary services do rely heavily on indirect and consultative approaches, an effective service delivery model must be flexible enough to meet the needs of individual learners. Within the transdisciplinary model, there may be circumstances that warrant short-term or long-term frequent and direct services by a therapist. For example, a learner may present such complex movement difficulties that the therapist needs to spend large amounts of individual time with the learner to perform assessment and to determine effective intervention procedures. A therapist cannot teach others how to work effectively with a student until he or she has determined effective interventions. Another example might be a learner who is making such rapid gains that by the time intervention procedures were taught to primary implementors, the targeted skills were accomplished and the procedures needed to be modified. Perhaps the most obvious situation in which direct services may be indicated is immediately following orthopedic surgery when greater precaution in use of hands-on skills required. In each of these cases, intensive direct therapy may be deemed most appropriate on a short-term or long-term basis. During that time, however, indirect and consultative services would still be essential to address the learner's positioning, handling, and other related needs in educational activities as other team members continue to work with the student. In

this way, direct services can continue to have an indirect transdisciplinary complement. In fact, when the therapist assumes the role of a primary implementor, he or she will need to incorporate the methods from other disciplines in the direct service sessions (e.g., behavior management technology from educators, language strategies from speech/language pathologists). In essence, such services remain transdisciplinary with the therapist serving as the primary implementor. In every instructional situation, regardless of who the primary implementor is, the synthesis of across discipline methods is necessary.

**Misconception #5:** *As special education programs and services become more decentralized through integration of students into regular, neighborhood schools and classrooms, the use of transdisciplinary models are less practical because of the inordinate amount of meeting and training time required for the model to be effective.*

**Clarification #5:** *As programs and services become more decentralized, the use of transdisciplinary and integrated therapy models becomes increasingly important to support student needs in educational environments. This requires improved administration of transdisciplinary models as well as creative solutions to logistical barriers.*

Until recently, the provision of educational services for students with moderate, severe, or profound handicapping conditions were primarily clustered and center-based (e.g., self-contained special school). The vast majority of students requiring intensive therapeutic input were centralized in regional schools or classes attended only by other pupils with handicaps. Special regional programs provided certain logistical advantages and conveniences for therapists and school administrators but posed serious impediments to the provision of appropriate services for students.<sup>23</sup> Public Law 94-142 mandates that education is provided the least restrictive environment and has promoted the integration of students with handicaps into general-attendance schools alongside their peers without handicaps.

Critics of the move toward placements in neighborhood schools and regular classes have argued that such desegregation and decentralization interferes with the provision of appropriate therapeutic services because of the reduction of team member access to each other for the extensive interactions required in transdisciplinary and integrated therapy team models. What these critics fail to realize or give priority consideration is that centralized, segregated (handicapped only) schools interfere with the provision of an appropriate education in the least restrictive environment. Increasingly, there are demonstrations of students with the most severe disabilities being successfully integrated into regular schools and classes.<sup>24-28</sup>

While related services in educational settings are crucial to student development, such services are provided to support rather than to direct educational service delivery. In *Roncker v. Walter*,<sup>29</sup> the judge established the "standard of portability" by ruling that, "In a case where the segregated facility is considered superior, the court should determine whether the services which make the placement superior could be feasibly provided in a nonsegregated setting. If they can, the placement in a segregated school would be inappropriate under the Act" (i.e., PL 94-142). Therefore the question to be asked is not "How can we get all the students who need a particular service (e.g., therapy) in one location?" but rather, "How can we provide appropriate services in decentralized, integrated settings?"

Although more difficult to achieve in a decentralized model, physical proximity is the first step toward maximizing interactions and establishing positive relationships. The following steps may be taken in order to facilitate team functioning in decentralized settings. First, use a block schedul-

ing strategy whereby therapists spend significant portions of a day working with learners assigned to one class or building.<sup>10,20</sup> This may result in therapists seeing learners less frequently but provides the opportunity to observe and work with learners more intensively across a variety of educational activities. Second, develop schedules that maximize efficient use of time for collaboration. For example, itinerant therapist (e.g., physical therapists, vision specialists, speech therapists) can be assigned to certain schools as pairs, so even though they may work with different students and teachers, they maintain contact with other therapists. Another strategy is to develop block time which allows for a certain degree of overlap among team members such as community instruction time slots and common preparation periods. Also, regularly scheduled team meetings provide an opportunity for interactions. Third, develop and encourage informal contacts. Many of the most productive interactions take place while school is in session and team members are working together with students in the classroom or in community instructional sites. Additionally, simple strategies such as having the therapists and teachers share work space (e.g., therapist's desk located in the corner of a classroom) or take lunch periods together can have a significant impact. Fourth, schedule team meetings for the days when therapists are assigned to a particular building. This minimizes travel between sites during the school day. Achieving this type of schedule frequently requires that the central administration plan the block schedules and team meeting times on a district-wide basis prior to the beginning of the school year. The result is a set schedule for the entire year. Fifth, improve the efficiency of scheduled team meetings by having a written agenda, assigning specific roles to team members (e.g., facilitator, recorder, timekeeper, observer on a rotating basis), recording outcomes and assigning responsibility, and limiting the duration of the meeting.<sup>26</sup> Sixth, develop a communication system for times when team members are not in close proximity. This can be as simple as using interoffice mail or a centrally located message board. Seventh, plan staff development to train, reward, and encourage collaborative teaming skills. Administrators can provide release time to staff members so that they may observe operational teams in action as well as conduct other legitimate team activities. Formal administrative support certainly expedites adoption and implementation of these strategies. In some situations, however, formal administrative support is not garnered until team members demonstrate adequate understanding and commitment to an integrated team process.

**Misconception #6:** *In transdisciplinary, integrated therapy models, therapists risk loss of professional identity and/or loss of employment.*

**Clarification #6:** *In transdisciplinary, integrated therapy models, therapists frequently enhance their professional identity and do not risk loss of employment. When therapeutic input is shared and integrated meaningfully into educational programs, other team members tend to increase their knowledge, respect, and value for therapists.*

This brings us to a discussion of the final misconception addressed in this paper: that therapists working in a transdisciplinary model may lose their professional identity. Some believe that a hidden agenda of a transdisciplinary and integrated therapy team model is to reduce the number of therapists required and possibly to remove therapists from educational settings altogether. Fear of this phenomenon has resulted in some therapists advocating for strict role definitions about who can do what with learners in order to justify continued involvement of individual disciplines in the educational arena. Such a response will not result in a greater valuing of therapy input by those who do

not yet understand the role and value of therapy services in educational settings. Appreciation for the contributions of a therapist does not rise from selective sharing of information and skills and a territorial posture. When therapists share, teach, contribute, and become integrally involved in educational programs, their teammates repeatedly comment about how much they value such therapists, how therapy input and therapist collaboration has benefited students and families, as well as how much they have learned through involvement with such fully participating therapists.<sup>22</sup>

Results of the Albano<sup>22</sup> case study of a transdisciplinary team contribute important perspectives related to professional identity and value. First, teachers stated that since they had worked in a transdisciplinary model, they valued therapists to a much greater degree because of the added benefits realized by learners and families. Second, teachers stated that they learned there was a lot more to therapy than they previously thought and there was much more they needed to learn. Third, therapists stated that their effectiveness on learner performance had increased dramatically within a transdisciplinary model. Over time, they felt confident that other team members were effectively integrating therapy methods throughout many daily activities and that students benefited greatly. Fourth, therapists felt they were essential team members upon whom others depended highly. In no way did they feel that sharing information and skills would result in loss of employment. Admittedly, a broad empirical data base is lacking in this regard, but common sense tells us that understanding, respect, and appreciation result from supportive and valuable contributions directed toward mutually desired outcomes. Transdisciplinary and integrated therapy teamwork provides the forum for the positive demonstrations that are the key to changing attitudes about and increasing the credibility of therapists in educational settings.

Implementing a transdisciplinary, integrated therapy teamwork model is not a rationale for increasing caseloads. Learners for whom a transdisciplinary model is appropriate usually have intense and comprehensive related services needs. Such learners frequently experience difficulties that transcend all environments and activities. For therapists to perform all the functions outlined in this paper, they must retain manageable caseloads. Caseloads of 60 students across three counties or schedules that allow one hour of consultation per student per month are unlikely to be effective in any service delivery model! Caseloads for therapists on transdisciplinary teams should be roughly equivalent to caseloads of therapists involved in direct service models. The main difference is in how the time is used. In traditional direct service models therapists primarily use time for direct, isolated therapy sessions. Rarely, if ever in educational settings, does this allow time for the consultation, training, communication, and planning with other team members.

## CONCLUSION

As educational services for learners with severe disabilities become increasingly decentralized to regular neighborhood schools and as functional curricular instructional models expand, therapy professionals in educational settings face new challenges and opportunities. A transdisciplinary and integrated therapy teamwork approach can offer a flexible and common sense framework upon which to design and implement truly integrated educational programs for learners with severe disabilities in educational settings. As advocates for individuals with disabilities, therapists who work in educational settings have the opportunity to have a direct, relevant impact on student's daily lives. We must acknowledge the changing arena of service provision in the public schools and collaborate in evolving complementary team approaches.

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Please submit a black and white photograph of your product along with a written description of up to 100 words. Descriptions in excess of the 100 word limit will be edited by the Publisher. All products and their descriptions are subject to approval by the Editor and Publisher.

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