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# Transdisciplinary Team Building: Strategies in Creating Early Childhood Educator and Health Care Teams

#### Abstract

Children with disabilities and their families often require multi-disciplinary professional services to address physical, social and developmental needs. Differences in professional training, pedagogy and practice can create conflict and confusion in meeting those needs. The transdisciplinary approach (TA) of service integration bridges that gap by allowing professionals to share roles across disciplines in order to meet the needs of children and families. Although the process of developing TA teams is documented, the experiences and developmental processes of participants in TA teaming remain largely unexplored. This study examined the experiences of professionals working together in a TA inclusive playgroup in an effort to explore their experience as a part of that team, and to document the development of skills across disciplines. The findings demonstrate that activities such as intentional group reflection impacted the evolution of professional roles including role release skills and role transformation.

Keywords: Transdisciplinary, interdisciplinary, multi-disciplinary training.

# Transdisciplinary Team Building: Strategies in Creating Early Childhood Educator and Health Care Professional Teams

The desire to provide coherent, consistent and comprehensive services to children with disabilities and their families has made the transdisciplinary approach (TA) an understood best practice for early intervention (Bruder, 2000; Guralnick, 2001). Fostering "shared meaning" for members of a "team" focused on children with complex needs not only increases efficiency, but creates a more holistic and coherent service plan (Davis, 2007; Rossetti, 2001) that is often less intrusive to the ecosystem of the child (Shonkoff, Hauser-Cram, Krauss, & Upshur, 1992). Although the conceptual basis for

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TA has been explored, the focus of the research thus far has been on the family-based delivery of transdisciplinary services (Davis, 2007; Limbrick, 2005), especially as it relates to the training of teachers and service-providers. An identifiable gap remains in the literature specifically relating to TA service delivery from the practitioner perspective (Foley, 1990; Ryan-Vincek,Tuesday-Heathfield, & Lamorey, 1995; King, Tucker, Duwyn, Desserund, & Shillingtonet, 2009). Research relating specifically to practitioner roles, supports, and experience is critical to providing models and principals that will assist in implementing highly effective and well-functioning transdisciplinary teaming. This study explored the perspectives of practitioners in creating and delivering TA services through an inclusionary playgroup, their roles in the TA process, and the structures and supports that sustained their efforts.

# Professional Partnership

The playgroup at the center of this exploration is the result of a partnership between an early childhood center at a regional midwestern university, and a local hospital center dedicated to providing comprehensive services for children with disabilities and their families. For the past five years, this partnership has created unique programs and research opportunities by combining the experience of educators and clinicians in serving children with special needs and their families. The goal of this partnership is both to provide children with and without special needs high quality inclusive education and healthcare, and to prepare future educators and health care professionals to work effectively as a collaborative team to benefit children and families. Through this collaboration, educators and health care professionals have the opportunity to gain increased skills and cross-disciplinary understandings and to exchange best-practices.

One of the noticeable benefits resulting from this collaboration has been the development of long-term professional relationships between educators, clinicians, therapists, and families. In this partnership, teams are diverse and include families, general and special education teachers, and healthcare professionals including: administrators, physical and occupational therapists, speech and language pathologists, social workers, nurses and physicians. This diverse group of professionals strive to work together to serve young children with disabilities and their families; however, a gap between disciplines has emerged as a potential stumbling block in communication and planning. In an effort to address this gap, the TA model may provide a platform to improve professional knowledge, understanding and communication across professions in order to better meet the challenges of children with special needs and their families.

In order to assess the efficacy of our transdisciplinary teaming practice, our study specifically analyzed the interactions between children, classroom teachers, and a speech pathologist that occurred during the development and management of an inclusive playgroup experience. The development and management of the playgroup was studied over time allowing the researchers to observe the ways in which the various professionals interacted, learned from each other, and reflected together on the value of collaboration and shared experience.

Background

As discussed by King, Tucker, Duwyn, Desserund, & Shillington (2009) and Foley (1990), three of the "essential and unique operational features" of transdisciplinary work are: arena assessment, intensive ongoing interaction among team members from different disciplines, and role release. The value of arena assessment, the simultaneous evaluation of a child using standard measures and informal methods by professionals from multiple disciplines, is in the opportunity for team members to assess, analyze, and reflect on the strengths and needs of the child (Foley, 1990). This assessment process or event creates a foundation for professional team intervention and interaction. Intensive interaction and role release, however, represent a continual process in which the team members are provided the opportunity to work alongside professionals from different disciplines using diverse skills and knowledge (Foley, 1990). This type of intensive interaction can foster role release, the expansion of previously well-defined roles, and the use of strategies and vocabulary of other disciplines (Johnson, et al., 1994). Professionals essentially continually "release" their own discipline to the team through collaboration, while at the same time assimilating strategies and knowledge from other disciplines.

These established phases of TA role evolution created an avenue to explore the ways in which organizations might begin to create and foster high-quality TA programming and opportunities. Each of these processes is critical and interrelated; intensive interaction and role release relate directly to the interaction and role evolution of practitioner participation in TA teams. Exploring these components in relation to practitioner experience and process might ultimately inform best practices in building transdisciplinary teams, processes, and systems that are replicable in early childhood special education.

To date, the focus of research has been largely on TA and family-centered teaming in the delivery of special education services (Ryan-Vincek, Tuesday-Heathefield, & Lamorey, 1995), and less information exists regarding roles and the effective management and support of transdisciplinary teams in special education in early childhood settings. The importance of building the capacity to collaboratively deliver services (Limbrick, 2005; Reilly, 2001; Stepans, Thompson, & Buchanan, 2002) underscores the need for further exploration of issues regarding supporting collaboration, as well as defining the functions and roles within TA teams (King, et al., 2009). In an effort to investigate the development, management and support of TA teaming, this exploratory case study focused on the interaction, reflection, perception and roles evolution within a transdisciplinary team of health care providers and early childhood educators managing an inclusive playgroup.

### Purpose

In this qualitative case study, researchers observed TA team interactions during the planning, collaboration and management of an eight week inclusive playgroup. In this exploration, the goal of the transdisciplinary team was to provide children with play opportunities that were focused, extended, and represented multiple developmental and

educational goals. The TA play group consisted of five typically developing children from the early childhood center and five children with disabilities from the hospital center. The transdisciplinary team included multiple adult participants: a pre-kindergarten teacher, a Healthcare speech and language therapist, teacher education students, speech therapist intern, and the university faculty. The teacher and the speech therapist co-planned, implemented, and documented each playgroup's activities. The TA playgroup team had the opportunity to work together for three months, and designated time together in addition to the playgroup meetings to assure that adequate time was available for planning, communication and reflection.

Researchers documented the different pedagogical and clinical approaches of team members in order to learn how collaboration developed between professionals. Researchers attended to the actions, meanings and perspective of each professional, and asked questions regarding their approach, goals, and assessments. Using participant observation (Spradley, 1980), researchers explored, examined and analyzed TA team actions, activities and reflections by scheduling time for intentional group reflection. The use of participant observation methodology supported the creation of a space in which all team members had voice and the perspectives of all were valued. During this group reflection, the team viewed select video clips of the playgroup sessions, discussed and questioned their professional interactions, and analyzed their perceptions of roles and actions. During this time, researchers probed TA team members' professional reflections regarding their interactions and roles evident in implementation of the playgroup sessions.

The exploratory questions investigated in this study were:

- 1. How do educators and clinicians develop collaborative skills as a part of a TA team?
- 2. How does intentional reflection impact their development of new professional roles?

## Methodology

Transdisciplinary Play-based Assessments It is well documented that children with disabilities have great difficulty integrating and forming social relationships as compared to typically developing children in a classroom (Guralnick, Neville, Hammond, & Conner, 2007; Han, Ostrosky, & Diamond, 2006; Odom, et. al, 2006; Scott-Little, Kagan, & Frelow, 2006). Therefore, many early childhood intervention programs design unique inclusive playgroup opportunities to enhance peer social learning in order to offer playgroups where children with and without disabilities learn together. In this study, the playgroup was structured to allow a diverse group of children to play together in a naturalistic setting. Creating a naturalistic setting is an ideal inclusive learning environment for the young child as it allows the incorporation of authentic learning environments, while fostering diverse socio-emotional developmental opportunities (Hughes, Shaffter, & Zaghlawab, 2008). In this exploratory study, the inclusive playgroup used a naturalistic setting and included children with and without special needs to foster social interaction skills.

Researchers studied the collaboration process between the TA team's pre-k teacher and a speech therapist that led the playgroup of 10 children, five typically developing and 5 children with disabilities between the ages of 4 and 6 years old, and included 6 girls and 4 boys. The goal of the teacher and therapist was to develop meaningful activities that benefited children both with and without disabilities. The 5 children with special needs were identified for participation by the speech pathologist, and included children with multiple disabilities including (but not limited to) autism spectrum disorder, receptive and expressive language disorder, developmental delay, and general cognitive disability. The 5 typically developing children were selected for participation by the classroom teacher and were selected purposively to facilitate social interaction. Each specialist was given different roles according to their discipline. The classroom teacher planned activities to facilitate learning of speech goals within a social setting geared toward play. This specific playgroup structure included reflective time together so as to allow for ongoing arena assessment and continuous professional interaction.

The researchers studied the playgroup session videotapes to document what took place in the playgroup, how children and adult experience evolved. Researchers used a video-cued reflection approach (Tobin, Hsueh, & Karasawa, 2009) where video clips of specific episodes demonstrating children with disabilities engaging in group interaction were selected and shown to the speech pathologist and teacher at the end of the eight weeks during the reflection session. The video clips (Table 1) were selected to elicit conversation on issues surrounding the inclusion and behavior of children with special needs in group activities, adult roles and perspectives in this environment, the nature of structured activities and materials during play, and the intentional planning and implementation of plans.

During TA team reflective time, the researchers played the selected video clips and asked semi open-ended questions. Questions focused on eliciting thinking in terms of group process, individual and group needs, and disciplinary perspective. Researchers analyzed audio recordings of the TA reflective sessions and documented language and statements relating to cooperation, disciplinary questions and statements, individual reflection, and attitudes regarding the experience of being involved in a TA team. TA team discussion meetings created an "intentional reflection space" that provided participants the opportunity to exchange, expand, and share ideas, as well as to assimilate and transfer new understandings through high-level dialogue.

## Analysis

Playgroup reflective meetings were audiotaped and transcribed for analysis. Additional data for analysis included the playgroup videotapes, field notes of playgroups, field notes of reflective sessions, and observation and notes from playgroup planning sessions. Transcripts from the reflections sessions were used to explore the observability of the stages of role release (King, et al. 2009) in relation to the transformation of practitioner roles in transdisciplinary work.

Table 1
Video Clip Selection and Reflective Review

Video Clip Reviewed	Description of Video Clip	Reflective Questions
John's participation in group time	John, a child with a speech and motor programming disability, interacts and participates in group discussion.	What do you think about John's participation?  What do you think about the reactions of others to John's
		participation?
Adult actions in supporting children's participation and social interaction	Through their physical presence and support, adults show varying strategies in scaffolding children in their participation, interaction and play.	If children are concerned about participating in challenging activity, how do you help children through this process?
children's interest and knowledge of the childre	Adults illustrate how the increased knowledge of the children allowed them to evolve purposeful	How much support is appropriate? How did you know if these materials and play engaged the children?
		Do you think your observations of the way children played in earlier sessions helps you scaffold and extend their play?
Abbey's exclusive focus on painting activity throughout playgroup session	Abbey, a child with special needs, painted throughout the playgroup session while other children took turns painting.	What do you think about Abbey painting the entire session?
Session	turns puniting.	How did the children collaborate in painting together while respecting each other's space?
Purposeful and intentional design and interactions during snack time	Activities and interactions during snack including adults and children	What do you think is the role of snack in the playgroup session?
		How have you made snack time purposeful part of playgroup session?

The analysis process was based on immersion in the data and repeated sortings, codings, and comparisons in relation to the characteristics of the TA stages proposed by King, et al. The analysis included several levels of data transformation. The first level occurred in the review of playgroup videotape, and review of field notes in preparation for the reflective meeting with the TA team. The second level involved transcription and the line by line coding of the transcripts from the TA reflective meetings and planning sessions. Strauss and Corbin (1998) describe open coding as that which "fractures the data and allows on identifying some categories, their properties, and dimensional locations" (p. 236), after each reflective session when the field notes were compiled and audiotapes transcribed. This process was followed by the identification and definition of categories or axial coding. Descriptive terms were created to label common patterns or themes, and the researchers met with and verified the authenticity of these terms with the TA team in order to assure accuracy. The final step included selective coding. Selective coding is "the integration of concepts around core category and the filling in of categories in need of further development and refinement" (Straus & Corbin, 1998). Codes and categories were sorted, contrasted and compared until saturated. To increase accuracy, the researchers independently analyzed the transcripts, used the coding structure, and then compared coded results in order to reach a consensus on categories and overarching themes.

Table 2
Demonstrated and Expressed Behaviors

Category	Expression or Demonstration	
Role Exchange into	Giving and accepting feedback and incorporating understanding; questioning other disciplines	
Role Expansion	Statements citing theory within disciplines; statements comparing disciplines acknowledging each other's expertise	
Role Release	Use of other disciplines / perspectives and expressions of importance of many points of view; statements of self-reflection	
Role Transformation	Seamless discussion across perspectives or disciplines; incorporation of multiple perspectives use of multiple vocabularies freely, acknowledging disciplinary weaknesses	

#### Results

This study investigated the processes involved in developing and supporting TA teaming, and explored the ways in which educator and healthcare professional roles evolve over time. The results illustrate the importance of intentionally structuring and planning reflective space, and of supporting the development of the relationship between participating professionals. Significantly, the study suggests a new finding that perhaps a space beyond role release exists where professionals truly transform their practice.

# TA development and intentionally structure, space and time

One of the key findings of this exploratory study is the challenge and importance of scaffolding the development and environment for the TA team. The success of the team relies on their ability to plan and reflect together, allowing them to share expertise consistently over time. For example, in this study team members met one hour each week to discuss the prior week's session and revisit the goals for the coming session in relation to the overall playgroup goals created by the speech pathologist. This served to create the space for the systematic analysis of data and reflection on experience that fueled the development and planning of following sessions and activities. This consistent time spent together also impacted their planning process and outcome. Over time, team members became able to plan coherently because of their shared experiences and interactions. When changes or adaptations were necessary, the speech pathologist and teacher were able to work together to focus on the larger goals and adapt effectively.

This specific TA team structure provided constant ongoing arena assessment as well as space for the reflection on the activities and goals of the playgroup. Each specialist brought different professional expertise to team discussions; however, creating the common goals and space for adaptation was key. By creating the space and time to spend together, team members were able to learn from each other's expertise and experience. For example, the perspective of the teacher working as a part of this TA team was to view assessment as informing instruction and as a part of a continuous process – formative not summative. This represented a shift for the speech pathologist, who largely regarded assessment as summative and non-contextual. Additionally, the speech pathologist reflected that because of the social interactions and diverse activities during playgroup, she was able to conduct a more authentic assessment of skills than was previously possible during one-on-one sessions.

Because the professionals spent organized and structured time together, they were able to make adaptations effectively and focus on the larger goals for the children. An example of effective change that was facilitated by the structured group reflection of this TA team was the adaptation of the original playgroup goals as created by the speech pathologist. The original goals of the pathologist focused on a series of social skills including: greeting, requesting, turn-taking, sharing, listening, joining and ending play, and conversation. Over time, these original goals were adapted by the team through their planning together to allow for increased flexibility and the freedom to follow children's interests as well as the linking of larger goals relating to social development and

teamwork skills. This represents a change in the speech pathologists approach, as she began to interact, understand and reflect with the teacher. Without the space and time set aside, this transformation could not have occurred.

# Relationships between Professionals

The intentional time together as a team created a reflective atmosphere that supported professional relationships, provided respectful interaction among professionals, and allowed team members to gain an understanding of each other's stance and practice including professional value system. One important aspect of this relationship was the development of the ability to listen across disciplines. The structure of the TA playgroup allowed team members to pool their ideas and exchange information, and also to explain theories and methods within their own disciplines in an ongoing exchange of knowledge, values and ideas. What resulted was a deep and rich relationship between team members based on respect for their respective professions and experiences. This extension, expansion and exchange of roles between team members (King, et al, 2009) relied on the relationships built during professional conversations and planning, and includes the ability to safely offer opinions and to admit weakness in professional perspective. An exchange between the teacher and speech pathologist in one team meeting illustrates the importance of relationship-building. During this discussion, both professionals were discussing their level of comfort during playgroup group time. The speech pathologist stated, "I have a hard time in front of the groups...I'm used to the one-on-one." The teacher responded to her by commenting that she too had concerns, "I have the same thing where I can do group time with 23 kids but if an adult pops in...that adds a level of stress." This exchange highlights the willingness of both professionals to share personal concerns as well as professional weaknesses. This exchange occurred because of their respectful relationship that developed over the time spent together as a TA team.

# A New Aspect: Role Transformation in TA Teaming

A potentially important result of this study emerged from the creation of intentional reflective time and space and the building of team relationships. These characteristics fostered a dynamic that allowed for the TA team to function and evolve beyond role exchange and role release, and to transform their roles as professionals. demonstrating "Role Transformation" (RT), members of the TA team in this study were able to acknowledge professional needs or weakness, acknowledge weakness of their specific discipline, toggle between professional perspectives during discussion, and regularly use as their own the vocabulary of multiple disciplines during single reflection. This new category resulting from this study builds on King, et al.'s hierarchy of TA teaming, but goes beyond that taxonomy that ends in role release as the highest level of TA team performance. This finding may indicate that TA team members, if assisted in reflection and relationship building over time, may actually transform their professional roles within the TA team structure. As the TA playgroup team developed, and the reflective processes became more established, team members not only released their exclusive hold on specific roles, but they transformed their view of their own discipline as being more inclusive of the skills and strategies of other team members (Table 3).

Table 3
Components in TA Team Evolution

Code	Description	Characteristics	Example
Role Expansion and Exchange (Group Action)	Process where expertise is shared, pooled, and accessed	Value/Valuing Speech, Questioning Other discipline, Exchange of Information (Quid pro quo), Explanation of Terms from Discipline, Cite a Discipline Specific Theory	Speech Therapist: "because he has that motor programming thing where he does,,pppppplaydoh. So you know when that intelligible speech is going to come out he has motor planning difficulties."  Teacher: "It's my natural inclination that they would have as much choice as possible in activity and the people that they're working with. I saw our goals as getting their speech to come out of the play. So I wanted their paly to be enjoyable and chosen by them so that we could focus on those words."
Role Release (RR) (Individual)	Individual begins to utilize strategy or techniques of other discipline	Use a plural speech: i.e. "we" Acknowledgement of perspective of other discipline Expression of importance of multiple perspectives in single situation Acceptance of feedback from other discipline	Speech therapist (relating to stuttering child): "But I think it has to do with the adults too. We didn't (say to the child)"what did you say? I can't understand you! Repeat it."Because you know kids pick up on what adults are doing and since we were so easy-going about it and didn't really draw attention to it. I think it helped the other kids with just kind of "Okay".  Teacher: "But I think that those activities suited our goal that day which was turn- taking. So it wasn't the best social prompt to get them to play together."
Role Transformation (individual)	Expression of role illustrates incorporation of multiple professional	Acknowledge professional needs or weakness Acknowledge weakness of	Speech Therapist: Well. I learned a lot from her (teacher) because she's used to groups. I'm not used to groups so I have a hard timeI'm used to the

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one-on-one.. that's why having her there helps me figure it out. I don't get too nervous anymore." Speech Therapist: "That's one of the hardest things working with kids on the spectrum, like (names), in giving them those pragmatics and those social skills and those are their goals. Incorporating that into my therapy is very hard because it's just me and (child's name)." Teacher: "That's why we have to convince the insurance company. Because how can we get play scores to go up when they're one-on-one? So if they're going into the classroom and they can't improve in their play then I think their learning is being impacted." Teacher: "Now they (the children) come in (to playgroup).. comfortable and having prior knowledge to build upon too maybe then (they) focus even more on speech things because the material is familiar and the procedure is familiar. They know about that rolling."

# **Discussion and Implications**

Currently teachers report that they are not adequately prepared to teach diverse learners with widely varying physical, social-emotional and cognitive needs (Miller & Stayton, 2000; Sandall, et al., 2005; Silverman, Hong, & Trepanier-Street, 2010). This is not unexpected given that teacher education programs have typically included just one general survey course on exceptional children across all ages. In addition, current teachers have had limited experience with working on transdisciplinary teams.

Inclusive education is becoming a widely accepted education norm. To meet the needs of children with disabilities in the regular classroom, transdisciplinary teaming has been suggested as an appropriate strategy (Kilgo, 2000). Teaming among families, general education, special education and healthcare professionals (physical therapy,

occupational therapy, speech and language, social worker, nurse and physician) provides the best quality service for young children with disabilities. This partnership has unique resources to share with education and healthcare professionals.

This paper is an initial attempt to address a frequent lack of coordination in the delivery of services to children with special needs, and to document attempts to dissolve some disciplinary boundaries. Members of the TA playgroup agreed on the benefit of the playgroup and the importance of having had the opportunities to learn from each other's expertise. The intentional reflection space highlighted both group's learning holistically in relation to their own professional expectations. The findings were consistent with previous research investigating the application of TA model (King, et al, 2009). Role expansion and exchange (REE) must happen in order to move to the level of role release and has to be supported in order to allow individual professionals to accept feedback and begin to adopt and use the terms and thinking of other professionals. Another key insight indicates that safety and the development of professional relationships are key in that without that relationship, TA team members are not likely to feel secure enough to express professional weakness or uncertainty regarding a situation or topic. That type of relationship requires the mutual professional respect, administrative support, investment of time, and structured discussions centered on team activities and the experience of the children

A notable finding indicated that if correct supports and opportunities are offered, participants can experience role transformation - essentially a change in fundamental understandings and practices. The reflective space provided the room for true transformation to occur, and allowed participants to review what they have learned from the experience and articulate insights, patterns, relationships and discrepancies that are not apparent to the surface experience level. In turn, this time together allowed them to grasp new knowledge on a high-level and to adapt to change.

## *Limitations of the Present Study*

The findings from this study are preliminary, and require further research to strengthen generalizability. The study does, however, contribute to understandings regarding the effective use of TA teaming structures for inclusive programming. Further studies should consider varying TA team combinations with larger samples of educators and healthcare professionals, and collect data on a variety of evidence to capture the success experienced by children and families through TA activity participation. By expanding the scope of the study and considering longer team activities, a replicable model for best transdisciplinary practice may emerge.

## Implications and Challenges

As reflected in our transdisciplinary mission (Kilgo, 2006), one exciting aspect is the experience of early childhood education and healthcare professionals working together and sharing a passion about the best educational practices for children with and without disabilities and the creation of new model for best practice based on the intersection of education and healthcare. The challenges for the current healthcare system are many,

and challenges such as working with insurers and billing for services delivered by a TA team in a non-clinical setting often create barriers. Further work on transdisciplinary teaming across disciplines may assure that children are learning essential skills, and that those skills develop with the maximum professional support in a natural environment. TA teaming offers the opportunity to train pre-service teachers in not only social norms and content, but also the extension of disciplinary collaboration.

## Next Steps and Future Studies

This exploratory study suggests other possible avenues of analysis regarding the effectiveness of TA teaming. Some of the areas that remain underexplored include the impact of TA teamed activities on children's outcomes, as well as family outcomes. In addition, another important group to consider may be para-professionals involved in TA teams. These adults are likely impacted by team activities, but may be underrepresented in planning and reflection processes.

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