1989

Making related service decisions for students with severe handicaps in public schools: Roles, criteria, and authority

Michael Giangreco
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Making related service decisions for students with severe handicaps in public schools: Roles, criteria, and authority

Giangreco, Michael Francis, Ph.D.
Syracuse University, 1989
MAKING RELATED SERVICE DECISIONS FOR STUDENTS WITH SEVERE HANDICAPS IN PUBLIC SCHOOLS: ROLES, CRITERIA, AND AUTHORITY

by

MICHAEL FRANCIS GIANGRECO
B. S. Ed., State University of New York, College at Buffalo, 1977
M. Ed., University of Vermont, 1981
Ed. S., University of Virginia, 1983

ABSTRACT OF DISSERTATION

Submitted in partial fulfillment of the requirement for the degree of Doctor of Philosophy in Special Education in the Graduate School of Syracuse University
May 1989

Approved

Date 2/17/89
ABSTRACT

Students with severe handicaps frequently require related services from occupational therapists, physical therapists, or communication specialists to benefit from instruction. Effective delivery of related services requires the existence of a shared framework for decision-making among educators, related service personnel, and families. This framework may be broadly characterized by: (a) the roles served by related service professionals, (b) the criteria used to make related service decisions, and (c) the authority for making decisions. Differences between team members regarding roles, criteria, and authority perspectives may pose threats to the development of a shared framework, while similarities may provide foundations upon which to advance collaborative efforts and appropriate services for students.

In an attempt to identify similarities and differences regarding roles, criteria, and authority variables, a questionnaire using a Likert-style scale was distributed to parents, special education teachers, occupational therapists, physical therapists, and communication specialists who serve students with severe handicaps in integrated public schools. Groups were compared using one-way analysis of variance and Scheffe’ post hoc comparisons.

All groups agreed that (a) developing adaptations to encourage functional participation, and (b) facilitation of functional skills, were the two most important roles of related service professionals when working with students who have severe handicaps. There was disagreement between groups regarding the importance of certain decision-making criteria. Related service professionals put greater emphasis on (a) age, (b) prognosis for remediation, and (c) intelligence, than did parents or
special education teachers. Groups agreed that the two primary criteria for consideration were, (a) the impact of the related service on the educational program, and (b) consideration of overlap or gaps in services. Generally, professionals reported that they should retain authority over decisions related to their discipline, while parents favored consensus decision-making.

Interpretations of results focus on conceptualizations for viewing roles, criteria, and authority regarding the provision of related services. Implications are offered regarding, (a) modifications in university preparation, (b) staff development, (c) administrative policies and guidelines, and (d) individual team-level strategies. Suggestions for future research are presented.
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Expressions of thanks and acknowledgement are due to many people who assisted in the completion of this study. First, thanks to the many parents, teachers, therapists, and school administrators of New York State and Pennsylvania who distributed and responded to the questionnaire. Your willingness to participate has been appreciated. I would also like to thank a group of co-doctoral students: Joanne Eichinger, Gloria Kishi, Linda Davern, Seunghee Park-Lee, and Barb Ayers, for their encouragement, friendship, and feedback during our time together at Syracuse.

The road to the completion of this dissertation started in 1979 when I had the good fortune to stumble upon a talented and gifted group of people at the Center for Developmental Disabilities at the University of Vermont. While studying for my Master's degree there, I was especially influenced by what I learned from Wes Williams and Bill Keogh. I can never thank them enough for the start they gave me and the foundation they helped me build for my future work.

While studying at the University of Virginia, I was again fortunate to meet and work with three people who helped shape my future. Adelle Renzaglia's hard work to advance the education of children with severe disabilities was a potent professional example. I am thankful for the wisdom and friendship of Gerry Wallace and for the support I received from Irene Carney.

The final bend in this road brought me to Syracuse University. My early involvement with SU was not as a student, but as a liaison between the Cayuga-Onondaga Board of Cooperative Educational Services and federal projects being conducted by Doug Biklen and Luanna Meyer. During these last few years, Doug has
been extremely supportive, both at SU and in terms of providing me with other professional opportunities that have enhanced my life -- thank you. With Doug and Luanna’s encouragement I entered the doctoral program. The decision to return to school required significant rearrangement of my work responsibilities. I am indebted to Al Sabin for his flexibility and assistance in helping me reach my goals. Thanks are also due to my colleague and friend, Mindy Fitzpatrick, who has always been supportive. She is the most complete educator I have had the privilege to know.

As my advisor and dissertation chairperson, Luanna Meyer has helped me in numerous ways. Her candor, and constructive criticisms have improved my work. Her scholarship has set a standard toward which I may aspire. But most importantly, I have been fortunate to catch a glimpse of the fervor with which Luanna believes in the inclusionary and humanitarian values which underlie our practice.

Through my work with Alison Ford on this dissertation and other projects at SU, I have come to appreciate her knowledge and hard working nature. Her attention to detail, her keen sense for quality, and her devotion to service are evident in all her work.

I think that everyone should have the opportunity to work with someone like Peter Knoblock. Peter is one of those rare people who, while talented in his own right, has an uncanny ability to bring out the best in those around him. His calm and reflective style, his warm and supportive personality, and his command of social science form a combination that has caused me to reflect and alter my practice in constructive ways.
The diversity and commonalities of my committee members, and their collegial attitude toward myself and other doctoral students resulted in a vibrant and meaningful learning experience that I will draw upon for many years to come. Finally, thank you to the many colleagues, families, and students whose paths I have crossed, and from whom I have learned so much.
DEDICATION

This dissertation is dedicated to my family. To my parents, Guy and Maryann Giangreco, I owe more than these words can express. They instilled in me the importance of education and the values to contribute my energies in service to people. It is only now as an adult that I can truly appreciate all they have done for me these many years.

To my children Daniel and Melanie I owe so much. While Melanie is too young to remember this period in the life of our family, photos of dad coding questionnaires with the baby Melanie on his lap will be a remembrance of the days in Ithaca. Her beautiful smile was a constant reminder of the important things in life. Daniel was there for me every day as I plodded along in front of the computer in our basement. He would sit on my lap, learn to spell his name on the keyboard, and ask to draw on paper. Throughout it all he was, and is, a great little buddy. I must admit that I was jealous of his proficiency, he would cut out pictures, make drawings, and put them on papers that were later stapled together. He called them his "dissertations". In the time it took me to do one dissertation, he did at least three, one each on plants, jokes, and animals -- not bad for three years old.

Most importantly, with love I thank my wife, Debbie. She always encouraged me and supported me through the many years of graduate school that have led to this point. Her strong sense of family and her perspectives on what was really important helped me maintain a balance that I needed in every aspect of my life. During times when it seemed that this process would continue forever, her kind and often humorous words of encouragement sustained me. She taught me more about myself and the world around me than any person I have ever known. I could not have done this without you -- I am forever in your debt.
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CHAPTER 1
MAKING RELATED SERVICE DECISIONS:
THE NATURE AND SIGNIFICANCE OF THE PROBLEM

Since the passage of P. L. 94-142 (Education of All Handicapped Children Act of 1975) students with severe and multiple handicaps have been provided with increasing opportunities to receive their education in regular schools and classes attended by nonhandicapped peers. Students are entitled to receive "related services" necessary to achieve their educational program. P. L. 94-142 states, "The term 'related services' means transportation, and such developmental, corrective, and other supportive services (including speech pathology and audiology, psychological services, physical and occupational therapy, recreation, and medical and counseling services, except that medical services shall be for diagnostic and evaluation purposes only) as may be required to assist a handicapped child to benefit from special education, and includes early identification and assessment of handicapping conditions in children." (Education of All Handicapped Children Act, § 1401 [17], 1975).

Occupational therapy, physical therapy, and speech/language pathology are the three most common related services offered to learners with severe handicaps in public schools (Campbell, 1987b). The involvement of these disciplines in educational programs has been widely accepted as a desirable practice, in part because neither teachers nor any of the related service disciplines singularly embody the varied skills required to meet the intense and multiple needs of students with severe handicaps (Albano, Cox, York, & York, 1981; Baine & Sobsey, 1983; Campbell,
P. L. 94-142 focused national attention on the need for partnerships among various disciplines and teamwork in order to deliver appropriate and optimally effective services to children with handicapping conditions (McCormick and Lee, 1979). Sirvis (1978) suggested that such cross-disciplinary relationships represented both a solution and a problem. While related services were designed to enhance appropriate educational programming, the involvement of many disciplines also resulted in problems associated with coordination and decision making.

Peterson (1981) echoed this concern by explaining that as the severity of a student's handicap increases, so may the need for more and different related services. As the number of professional group members increases so does the complexity of coordination.

Ottenbacher (1982) fears that the potential benefits of collaboration between disciplines, "... will not be realized unless therapists and educators can put their own historical and philosophical differences and similarities in perspective" (p. 82). While the combining of input from many disciplines has logical appeal as a strategy to address multiple needs, Sears (1981) suggests that fundamental differences in the perspectives of various disciplines has impeded collaboration.

Ironically, while P. L. 94-142 was mandating relationships between education and medical allied health professions, these same disciplines were struggling to define unique bodies of knowledge and establish independent conceptual bases (Ottenbacher, 1982). At the same time, special education has sought to dissociate itself from the "medical model", both philosophically and pragmatically (Ottenbacher, 1982).
Denigration of the medical model by special educators has perpetuated ongoing antagonism between the disciplines (Kauffman & Hallahan, 1974), thus posing another significant barrier to collaboration.

Theoretical, philosophical, and interpersonal differences among professionals resulting in defensiveness, territoriality, professional insecurity, role rivalry, and lack of role definition, have led to widely disparate interpretation and implementation of related services (Albano, Cox, York, & York, 1981). Various and contradictory opinions have been espoused by parents, educators, and related service personnel regarding issues such as (a) eligibility and frequency of related service (ASHA, 1984; Effgen, 1981; Kansas Chapter of the American Physical Therapy Association, 1981; Miedaner & Renander, 1987), (b) roles and functions of related services (Bray, Coleman, & Gotts, 1981; Sabari, Wasserman, White, Williamson, & Hinjosa, 1983; TASH 1986), (c) criteria used for related service decision-making (Certo, 1983; Effgen, 1981), (d) direct versus indirect service delivery (Campbell, 1987a, 1987b; Geiger et al., 1986; Lyon & Lyon, 1980; Rainforth & York, 1987; Sandler, 1985), and (e) decision-making authority of the various constituencies (Albano, 1983; Bricker, 1976). The absence of a shared framework for decision-making regarding related services may result in separation and fragmentation of student goals, instructional planning, implementation, evaluation, adjustments to the educational program, and the reporting of educational status and progress to parents and school officials. A lack of coordination among special education teachers, parents, and related service professionals is likely to detract from students' acquisition, retention, and generalization of skills required to engage in integrated life outcomes. If students with severe handicaps are to live in
normalized home environments, work in integrated community settings, participate in age-appropriate recreational activities, access a wide array of community services and environments available to the general public, and establish and maintain positive relationships with other people, mutual support and cooperation will be necessary from all team members. Few aspects of a student's educational experience have such potentially far-reaching implications as the collaboration, coordination, and synthesis engaged in by those adults responsible for designing, implementing, and evaluating individualized educational programs.

While position papers have outlined common problems believed to be associated with coordination among teachers, parents, and related services professionals, experimental and descriptive research data on this topic is sparse relative to educational programs for students with severe handicaps. This study sought to identify the similarities and differences among parents, special education teachers, occupational therapists, physical therapists, and communication specialists based on self-reported perceptions regarding (a) related service roles, (b) decision-making criteria, and (c) decision authority, used for making decisions regarding the provision of occupational, physical, and speech/language therapy as related services for students with severe handicaps in integrated public schools.

Clarification of similarities and differences across these groups may assist parents and professionals as they attempt to provide appropriate educational services and supports to students with severe handicaps. Differences can be used to better understand one's own perspectives as well as those of other group members. Identification of differences can assist in pinpointing the nature of group dysfunction. This would be essential if groups plan to implement strategies directed toward the development of a shared framework for decision-making (Bailey, 1984).
Similarities can be used as sources of support and agreement to bridge identified gaps within groups. Collaborative planning, implementation, and evaluation are unlikely to occur without the development of a shared basis for decision-making. Such decision-making may be reflected in a common understanding of the roles related service providers play in educational programs, the criteria used by the various group members to make decisions, and agreement regarding who shall retain authority for decision-making. Although emerging agreement about related service roles, decision criteria, and authority will not necessarily ensure constructive group functioning, such an outcome would be unlikely to occur in its absence.

Foundational information about related service roles, decision-making criteria, and decision authority perceptions may provide a basis for collaboration among the individuals involved in the education of students with severe handicaps (i.e. parents, special education teachers, occupational therapists, physical therapists, and communication specialists). This study was designed to provide information that could potentially be translated into (a) processes for the development of a shared philosophy and strategies at an individual team level, (b) transdisciplinary inservice education or staff development designed to raise awareness of related service issues and problem-solve potential solutions, (c) administrative policies or guidelines designed to ensure equity and appropriateness of related service delivery, and (d) modifications of university curricula, instruction, and professional socialization across disciplines in order to reduce or prevent existing problems that currently inhibit effective cross-disciplinary interactions.

Self-reports of parents, special education teachers, occupational therapists, physical therapists, and communication specialists working with students with
severe handicaps in integrated public schools were used to explore potential
differences and similarities among these groups regarding roles, criteria, and
authority used to make related service decisions. Within the context of assessment,
planning, implementation, and evaluation, this study sought to ascertain how
individuals from these groups perceived the importance of the following roles for
occupational, physical, and speech/language therapists: (a) prevention of
regression, deformity, and/or pain; (b) promotion of normal developmental
sequences; (c) remediation / restoration of identified deficits; (d) development of
adaptations and/or equipment to encourage functional participation; (e) facilitation
of functional skills and activities; (f) reciprocal consultation with colleagues; (g)
removal or modification of barriers to participation; (h) provision of resources and
supports to families; (i) service as a liaison between the medical community and
school personnel; and (j) service as an advocate for students with severe handicaps.

Secondly, this study examined group members self-reported perceptions
regarding the value of certain criteria used to make decisions about the provision of
related services for students with severe handicaps (i.e. eligibility for related
service, frequency of service, direct vs. indirect service). The criteria included
were (a) age, (b) history and prognosis for remediation, (c) level of intelligence,
(d) severity of impairment, (e) support to the educational program, (f) parental
involvement, and (g) overlap among services. Since each of the criteria is
directional, knowing that an individual perceives a certain criteria as important does
not assist in understanding the directionality of their response. For example, two
individuals both may indicate that age is an important criteria to employ when
making related service decisions, but for potentially different reasons. Therefore,
the research questions regarding decision-making criteria were asked with directionality. Do parents, special education teachers, and related service professionals believe that (a) The younger the age, the more important it is for the student to receive related services; (b) the more favorable the history and prognosis for remediation, the more important it is for the student to receive related services; (c) the higher the level of intelligence, the more important it is for the student to receive related services; (d) the more severe the impairment, the more important it is for the student to receive related services; (e) the more the related service is required in order for the student to benefit from special education, the more important it is for the student to receive related services; (f) the greater the probability of parental involvement, the more important it is for the student to receive related services; and (g) the more a specialist's skills are needed for student support but are not possessed by other team members (absence of skill overlap), the more important it is for the student to receive related services?

Lastly, the study explored the perceptions of parents, special education teachers, and related service professionals regarding who should retain authority over related service delivery recommendations. The study asked if specialists (e.g. occupational, physical, and speech therapists) should share their recommendations with team members (including the family) for their consideration, but have specialists retain final decision authority regarding their own discipline. Conversely, the study examined whether team members (including the family) perceived that related service delivery recommendations should be made based on group consensus where no one team member has more decision-making power than another. By exploring the aforementioned aspects of roles, criteria, and authority perceptions of the five
primary constituency groups typically responsible for the education of students with severe handicaps, we may begin to develop a descriptive data base to illuminate and test the myriad of unsubstantiated opinions, theories, logic, and values that currently exacerbate the gaps in understanding among professionals and families.

In the first half of Chapter 2, the writer offers background information designed to provide a context for examining the issues related to the present study. The remainder of Chapter 2, is devoted to describing and analyzing literature that directly relates to each of the research questions posed in this chapter regarding roles, criteria, and authority.
CHAPTER 2

LITERATURE REVIEW

The roles, criteria, and authority perceptions used by parents and professionals to make service delivery decisions are influenced, in part, by the context within which decisions are made. Therefore, this literature review is divided into two major sections, organizational factors and decision-making factors. The section on organizational factors reviews: (a) legislation, litigation, and interpretations about the provision of related services; (b) literature regarding the interactions of group members and the development of teams; and (c) service delivery models. Discussion of organizational factors is designed to provide a context for the discussion of decision-making factors that relate directly the research questions posed in this study. The section on decision-making factors will review literature regarding, (a) perceived roles for related service providers, (b) criteria used by various group members to make decisions, and (c) authority perceptions used in the decision-making process.

Organizational Factors Effecting Related Service Decision-Making

Making decisions on behalf of students is one of the most common and important tasks faced by school personnel and parents. Presumably, nearly every school in the nation that serves students with severe handicaps provides some level of related services to assist those students in achieving educational goals and participating in
school activities. The adults responsible for the design and implementation of services interact with each other to varying extents and can be described as participating in some sort of service delivery configuration. Despite the widespread nature and relevance of making related service delivery decisions, it appears that the current practice in the field is based primarily on opinions and conjecture. As depicted in Table 2.1, a review of 80 references related to the organizational factors discussed in this section (related services, teams, and service delivery), revealed that a relatively small number contained data-based findings.

While it is encouraging to note that 11 data-based studies were identified that pertain directly to the delivery of educationally related services to students with severe handicaps, these studies generally address micro components of service delivery issues such as comparison of two assessment approaches (Wolery & Dyk, 1984) or single-subject demonstrations of particular integrated strategies (Campbell, McInerney, & Cooper, 1984; Giangreco, 1986b; McEwen & Karlan, 1987; Strawbridge et al, 1987). Katz (1984) suggested that most research tends to deal with "small" ideas, while people in the field are searching for broader concepts that can be applied to service delivery. Broad, data-based conceptualizations of organizational factors such as related services, teams, and service models for students with severe handicaps are currently unavailable in the professional literature. The limited number of studies available, the nonexperimental nature of several of the studies, and the diversity of their emphasis, precludes meaningful meta-analysis. While literature on organizational factors with other populations, such as students with mild handicaps, may be of some assistance, the types and intensity of related service provision for students with
Table 2.1
Synopsis of Literature on Organizational Factors Effecting Related Service Decision-Making

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* denotes references that are specifically focused on students with severe mental retardation.
severe handicaps is likely to be significantly different than for other populations. Dissimilarities may include: (a) greater numbers of different related service professionals; (b) more probable inclusion of related service professionals representing medical or allied health professions; and (c) greater likelihood that related services will be provided more frequently. The following subsections address each of these organizational factors in more detail.

**Related Services**

Speech/language pathology, occupational therapy, and physical therapy, as independent professions, were not established for the exclusive application of supporting educational programs for students with handicapping conditions. Professionals from each of these disciplines can be found providing human service in a variety of nonschool environments such as hospitals, clinics, nursing homes, private practice, and residential facilities. The research questions posed by this study placed respondents perceptions regarding occupational therapy, physical therapy, and speech/language pathology in the framework of "related services". In doing so, the roles, criteria, and authority factors explored by this study may be different than those used in other settings.

As mentioned in the Chapter 1, the federal definition of "related service" refers to developmental, corrective, or supportive services required to assist a child with a handicapping condition to benefit from special education. Special Education is defined as, "... specially designed instruction, at no cost to the parent, to meet the unique needs of a handicapped child, including classroom instruction, instruction in
physical education, and instruction in hospitals and institutions. The term includes speech pathology or any other related service, if the service consists of specially designed instruction, at no cost to the parents, to meet the unique needs of a handicapped child, and is considered 'special education' rather than a 'related service' under State standards" (C.F.R. 34 § 300.14).

While The Education for All Handicapped Children Act of 1975 (EHCA) includes occupational therapy, physical therapy, and speech/language pathology among its specified related services, the listing included in the definition is not exhaustive. The Code of Federal Regulations (1987) notes that other services, not specified in the EHCA definition listing, may be offered to students as related services, if they are required to assist a child with a handicapping condition to benefit from special education (34 C. F. R. § 300.13 Comment). The EHCA ensures that related services be provided only for students identified as handicapped who are receiving special education. The Code of Federal Regulations (1987) states, "The definition of 'special education' is a particularly important one under these regulations, since a child is not handicapped unless he or she needs special education. The definition of 'related services' also depends on this definition, since a related service must be necessary for a child to benefit from special education. Therefore, if a child does not need special education, there can be no 'related services' and the child (because not 'handicapped') is not covered under the Act" (34 C. F. R. § 300.14 Comment). Some states, like New York, have extended the federal law by offering appropriate related services to students with handicapping conditions to support them in regular education programs, "...without further need for special education placement." (State Education Department - Office for Education of Children with Handicapping Conditions, 1981, p.1). Interpretation regarding the global intent of the related
service provision of the EHCA has been widely accepted as evidenced by the high
degree of consistency in the literature. This singular intent was for specialists from
various disciplines to provide input from their area of competency required to
support students with handicapping conditions in their educational program (Larsen
& Poplin, 1980; McCormick & Lee, 1979; Noie, 1982; Ottenbacher, 1982;
Peterson, 1980; Sears, 1981; Sirvis, 1981). Despite apparent agreement
regarding the intent of related services, Osborne (1984) points out that the
litigative history on this issue reveals that the related services mandate has been one
of the more controversial provisions of the law. Table 2.2 presents a litigative
chronology regarding the provision of related services for students with
handicapping conditions.

Controversy has centered around two broad issues: (a) defining precise
parameters of the specific related services found in the regulations; and (b)
determination of whether or not certain services qualify as related services under
the EHCA (Osborne, 1984). Services deemed "not required" do not have to be
provided by schools. In Board of Education v. Rowley (1982) a parental request for
a sign language interpreter was denied by the Supreme Court because the Court found
that the student was able to achieve educational objectives satisfactorily, and
therefore derived educational benefit from special education without the services of
an interpreter.

Confusion regarding the bounds of related services have surfaced regarding issues
such as physical plant accessibility, certain health services, parent training and
counseling, and extra-curricular activities (Osborne, 1984). For example, in a
state administrative due process hearing in Indiana, school officials denied a request
<table>
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<tr>
<th>Source</th>
<th>Main Points</th>
</tr>
</thead>
<tbody>
<tr>
<td>PARC v. Pennsylvania (1972)</td>
<td>Established the legal right of students with severe handicaps to receive public education.</td>
</tr>
</tbody>
</table>
| Education for All Handicapped Children Act (1975) | In addition to ensuring a free, appropriate, public education for all students with handicapping conditions, this legislation established that students have a right to receive related services that, "... may be required to assist a handicapped child to benefit from special education". Related services are developmental, corrective, or other supportive services including, but not limited to, speech pathology, audiology, psychological services, physical therapy, occupational therapy, counseling, and medical services. Medical services shall be for diagnostic and evaluation purposes only. The Code of Federal Regulations (1987) § 300.13 extended this list to include school health services, "social work services in schools, and parent counseling and training."
<p>| Espino v. Besteiro (1981) | School was ordered to provide an air conditioned classroom as a related service for a 7 year-old child who could not regulate his own body temperature. The school had previously agreed to provide an air-conditioned cubicle to be placed in a classroom that was not air-conditioned, but the court ruled that the cubicle restricted the student's interactions with peers. |</p>
<table>
<thead>
<tr>
<th>Case Study</th>
<th>Decision and Explanation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hymes v. Harnett Board of Education (1981)</td>
<td>Court ruled that the school must provide management of a student's tracheostomy tube during the school day to allow access to school-based education. The school's plan to provide homebound instruction because of the tracheostomy was deemed unduly restrictive.</td>
</tr>
<tr>
<td>Tokarick v. Forest Hills School District (1981)</td>
<td>School was ordered to provide clean intermittent catheterization (CIC) as a related service because the &quot;... absence of such a service would prevent the child from participating in the regular school program.&quot;</td>
</tr>
<tr>
<td>Board of Education of the Hendrick Hudson Central School Board v. Rowley (1982)</td>
<td>In this Supreme Court decision, a sign-language interpreter was denied as a related service to a student with a hearing impairment because the Court ruled that she was, and had been, benefiting from instruction. Justice Renquist ruled that, &quot;Free appropriate public education is satisfied when state provides personalized instruction with sufficient support services to permit the handicapped child to benefit educationally from instruction&quot; (p. 3034) and that the requirement of free appropriate public education does not require the state to maximize the potential of each child.</td>
</tr>
<tr>
<td>Stacy G. v. Pasadena Independent School District (1982)</td>
<td>In this case regarding a student with severe retardation and behavioral problems, the court ruled that related services must be provided in the form of parent training in behavior management techniques and counseling to the parents to help relieve emotional stress.</td>
</tr>
<tr>
<td>PARC v. Pennsylvania Consent Decree on Enforcement Petition in Fialkowski v. School District of Philadelphia (1982) {See McGregor et al (1986)}</td>
<td>In anticipation of the outcome of court proceedings, the Philadelphia City School District settled out of court with plaintiffs in 1982. The agreement bound the school district to provide extensive retraining and instructional support to staff in...</td>
</tr>
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</table>
Table 2.2 (continued)

<table>
<thead>
<tr>
<th>Case Study</th>
<th>Description</th>
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<tbody>
<tr>
<td><strong>Birmingham &amp; Lamphere School Districts v. Superintendent (1982)</strong></td>
<td>Court ruled that a local hearing officer did have the right to order the school district to provide related services in the form of summer enrichment activities that were essentially noninstructional in nature.</td>
</tr>
<tr>
<td><strong>Department of Education, State of Hawaii v. Katherine D. (1983)</strong></td>
<td>In this case regarding a student with cystic fibrosis and tracheomalacia, the court ruled that the school recommendation for homebound instruction did not meet the requirement of a free appropriate public education. The court ordered placement in regular public school with staff being trained in management of the student's tracheostomy tube (dispense medication, suction lungs, reinset tube if dislodged). The court tempered its position by saying the schools were required to make accommodations &quot;within reason&quot; and that budgetary constraints and realistic resources are considered by the court.</td>
</tr>
<tr>
<td><strong>Hurry v. Jones (1983)</strong></td>
<td>The court ruled that the school must provide transportation as a related service for a student with mental and physical handicaps. This transportation was inclusive from the child's home to the school bus and from the bus to the classroom.</td>
</tr>
<tr>
<td><strong>Rettig v. Kent City (1983)</strong></td>
<td>In part, this decision ordered a school to provide related services in the form of one...</td>
</tr>
</tbody>
</table>
Table 2.2 (continued)


This Supreme Court ruling designated clean intermittent catheterization as a related service. It distinguished it as a supportive school health service, not a medical service. The Court explained that provision of such a service did not place an undue burden or expense on the school district.

Detsel v. Auburn Enlarged City School District (1986)

This case began with a local hearing officer determining that constant in-school nursing care was a related service for a child with a life threatening lung condition. The decision was overruled by the State Commissioner of Education whose decision was upheld through the courts. The Supreme Court refused to hear the case. While nursing has been considered a "school health service" and appropriately provided as a related service, the courts ruled that the constancy and nature of the service qualified it as "medical" and thus excluded it as a related service because it was beyond the competence of the school nurse. The service was also denied because it placed an undue financial burden on the school district. The case is still being litigated. The family is suing Medicaid to pay for the service. In the meantime the school district is paying for the service until the responsibility for payment is resolved.
for a child to receive sensory integration therapy to, "... focus on normalization of the vestibular system and improvement of tactile discrimination" (AOTA, 1982, p. 6; Indiana State Education Department, 1983). Sensory integration is an intervention approach used almost exclusively by occupational therapists with children considered to have learning disorders. Sensory integration theory assumes that some learning disorders reflect a deviation in neural function, specifically, disordered sensory integration (Ayers, 1972). Sensory integration theorists purport that intervention is designed to ameliorate neurological dysfunction, thus enhancing sensory integration, and ultimately enhancing academic learning for those children whose problems are believed to be associated with identified integrative dysfunctions (Ayers, 1972). Witnesses for the school testified that sensory integration was based on a theory that had insufficient research data to conclude that it assisted children in learning. The school's attorney further argued that "... the parents were trying to elevate sensory integration to a 'related service' under P.L. 94-142, which it is not." (p.6). Reports and recommendations from the occupational therapist of record did not state the need for occupational therapy, only sensory integration, although the parents explained that they were requesting occupational therapy for their child. The hearing officer concluded that neither sensory integration nor occupational therapy was required in order for the student to benefit from special education. Therefore, the school was not required to provide occupational therapy as a related service (Indiana State Education Department, 1983). Lehr and Haubrich (1986) state that, "... there exists a need for documentation, data, and research to support the value or need for various related services. Without a documented basis for the value of various services, the entire
area of related services could end up being a catch-all category for poorly developed theoretical approaches or exotic treatment strategies." (p. 361). The American Physical Therapy Association (1985) states that therapists have a , "... legal as well as an ethical obligation to document and quantify effected behavioral changes related to the enhancement of the child's educational plan." (p.42).

Generally, the courts have ruled that health services that can be performed by a school nurse or another trained person may be considered related services. Schools typically have not been required to provide health services that by state law must be carried out by a licensed physician (Osborne, 1984). For example, in Irving Independent School District v. Tatro (1984), the United Supreme Court reversed a lower court decision and ruled that a child with spina bifida was entitled to receive Clean Intermittent Catheterization (an adapted method of releasing urine from the bladder) as a related service because it allowed the student access to educational opportunity. The Supreme Court Justice ruled that, "A service that enables a handicapped child to remain at school during the day is an important means of providing the child with meaningful access to education that Congress envisioned. The Act (P. L. 94-142) makes specific provision for services, like transportation, for example, that do no more than enable a child to be physically present in class." (p. 3178). Since the child needed to be catheterized during the school day, the service was needed in order for her to stay in school. Fearing that related services might be interpreted too broadly and place extraordinary financial burdens on schools, the Court qualified their position by stating that, "... if a particular medication or treatment may appropriately be administered to a handicapped child other than during the school day, a school is not required to provide nursing services..."
to administer it." (p. 3188) and that schools were not responsible for providing life support services. Other court decisions have concurred with the ruling that schools are responsible to provide school health services such as catheterization, gastrostomy tube feedings, tracheotomy tube management, and similar services (Tokarcik v. Forest Hills School District, 1981; Hawaii Department of Special Education v. Katherine D., 1982). Osborne (1984) points out that rulings are often based on state to state variation regarding who is allowed to perform such procedures. The increase in the number of medical procedures that can be carried out by nurses and physician's assistants may have an impact on educational access for students who were formerly excluded from school due to health restrictions (Vitello, 1986).

Recently, decisions regarding the provision of medical related services have surfaced that tend to strengthen the Courts' limitations on related services. The following information chronicles the case of Detsel v. Auburn (1986). It is based on review of the legal documentation as well as a phone interview with the mother of the plaintiff, Melissa Detsel (M.J. Detsel, personal communication, April 22, 1988). Melissa is an elementary school student who receives special education services. She has been diagnosed as having a number of serious lung diseases. Her physicians have prescribed 40% oxygen 24 hours a day, while she spends approximately 15 hours a day on a respirator. During the school day, oxygen is available to Melissa in her classroom and via a portable unit affixed to her wheelchair that she uses when she travels through the school. In 1984 the Detsel family won a local ruling providing Melissa with a full-time licensed practical nurse in school as a related service to monitor her respiratory function and provide assistance in case of potentially life threatening respiratory distress. It was agreed that Melissa required this service to safely access the school. The potential respiratory arrest was so significant that
nurses monitored her health around the clock in her home. Following the local school
decision, the New York State Commissioner of Education overruled the local decision.
The family filed suit against the New State Department of Education and the Auburn
Enlarged School District in District Court where the Commissioner's decision was
upheld. Subsequently, the New York Court of Appeals also upheld the ruling that the
school was not required to provide the full-time nursing services, and the United
States Supreme Court refused to hear the case, despite the argument that the Detsel
decisions had begun to erode to the standard set by the Supreme Court in the Tatro
case.

It appears that frequency and intensity of the service were key factors
distinguishing this outcome from earlier cases. Whereas in the Tatro case
catheterization was administered a few times daily, the nursing services in the
Detsel case were ongoing and theoretically would continue to be required as long as
the student is enrolled in school. Further, they were required for life support,
which the Supreme Court had already stipulated was not the responsibility of the
school. At the present time the school district is providing the nursing service that
allows Melissa to attend school and assuming 100% of the cost, without financial aide
from the State due to the State rulings. The family has brought a district court suit
against Medicaid to pay for the nursing services in school; such a decision would
require a change in the Medicaid regulations, since they currently preclude funding
of services in schools.

Decisions have also been rendered that schools may be required to make
modifications in the physical plant of the school building to allow students to have
appropriate access to education. The Espino v. Besteiro (1981) decision ordered a
school district to provide a temperature controlled environment (including air conditioning) for a student who was physically unable to regulate his own body temperature. In *Hurry v. Jones* (1983) the court directed a school to provide a means for a child with a handicapping condition to get from his home to the school bus and from the school bus to the classroom. Schools may also be required to provide other means of access to students with handicapping conditions such as ramps for students' wheelchairs and wheelchair lifts (Osborne, 1984). Related services may also be provided to avoid more restrictive educational placements. In *Stacey G. v. Pasadena Independent School District* (1982) the school was directed to provide parents with training and counseling while retaining the student in a school program rather than placing the child in a residential school. Even extra-curricular activities could be required as related services if they are deemed necessary in order for the student to benefit from special education (Birmingham and Lamphere School Districts v. Superintendent, 1982; *Rettig v. Kent City*, 1983). Such decisions are based, in part, on the Code of Federal Regulations (1987) section on "Non-academic Services (34 § 300.306)" that states, "Each public agency shall take steps to provide nonacademic and extracurricular activities in such a manner as is necessary to afford handicapped children an equal opportunity for participation in those services and activities..." and that they be "... exposed on an equal basis as non-handicapped children."

No major litigation was located that specifically addressed the provision of speech/language pathology, occupational therapy, or physical therapy. While the interpretation of related services continues to be discussed, regulated, and litigated, there do appear to be certain consistent trends. (a) Related services are provided to
students with handicapping conditions if the recommended services are required in order for the student to benefit from special education. The courts have extended the interpretation of related services to include access to education, and in some cases, avoidance of unduly restrictive educational placements. (b) Variations exist from state to state regarding the provision of related services. (c) Schools generally are not required to provide services that are judged to be nonessential to enable the student to benefit from special education. The test for determination of related service delivery has been that the absence of the related service makes it unduly difficult or impossible for the student to benefit from special education or participation in school activities. (d) Schools generally are not required to provide services that can be provided appropriately during nonschool hours. (e) Finally, services considered to be School Health Services provided by a qualified school nurse or other qualified person (e.g. clean intermittent catheterization, tube feeding) qualify as related services. Schools are not required to provide services that only can be administered by a licensed physician, except for diagnostic or evaluation purposes only.

Understanding the nature and controversies regarding related services is central to the research questions of this study because roles, criteria, and authority perceptions applied to decision making involving allied health professionals may be different in schools than in other settings where services like occupational, physical and speech/language therapy might be offered, such as in hospitals, clinics, or rehabilitation facilities.
Teams

Typically, educational and related service personnel form teams "... as a vehicle to unite the highly specialized and fragmented array of professional services with the information and concerns of the family" (Albano, Cox, York, & York, 1981, p. 24). Effective sharing of perspectives, skills, and supports across disciplines is believed to hold great promise for improving the quality of educational services offered to students with handicapping conditions (Bray, Coleman, & Gotts, 1981; Golin & Ducanis, 1981; Peterson, 1980), yet empirical evidence to this effect is lacking. Theoretically, effective teams can provide coordinated services resulting in improved student outcomes, reduce duplication of services, focus and maximize the use of personnel, provide a vehicle to problem-solve regarding increasingly complex student needs, improve cost efficiency, and provide a means of professional growth for team members (Albano, Cox, York, and York, 1981; Baine & Sobsey, 1983; Hutchinson, 1978). While much of the existing information available on team approaches has logical appeal, little of it is data-based (See Table 2.1). The vast majority of articles on teams are position or theoretical papers, that have no empirical basis. The few data-based sources that do exist are primarily surveys that report the opinions of large numbers of practitioners (Bray, Coleman, & Gotts, 1981; Fenton, Yoshida, Maxwell, & Kaufman, 1979; Yoshida, Fenton, Maxwell, & Kaufman, 1978), qualitative studies (Albano, 1983), or quasi-experimental studies (Prasse & Fafard, 1982). Albano's (1983) study, is the lone entry under the heading "Team/Group Interactions" in Table 2.1 that is specifically related to groups serving students with severe handicaps. Additionally, a number of these studies excluded occupational and physical therapists in their subject pool and all...
excluded parents from study. Tables 2.3 and 2.4 present summaries of data-based research studies; these are divided into studies of learner outcomes and observations/opinions of adult group members respectively.

**Group Interactions**

The roles, criteria, and authority perceptions held by professionals and parents may be both reflected in, and affected by, how groups are organized and function. Everhart (1977) suggested that the expectations and behaviors of group members can influence their perceptions of team success. While one might argue that perception is reality, an observational study by Goldstein, Strickland, Turnbull, & Curry (1980) found that in some cases while outside observers believed a group was not successful in their team effort, actual group participants reported their team performance favorably. In part, Goldstein et al (1981) concluded that if one or two group members perceive difficulty in team functioning, the mutuality required for effective teamwork was most likely absent. Yoshida, Fenton, Maxwell, and Kaufman's (1978) survey of 1,344 education and related professionals indicated that team members representing different professions vary in the magnitude of their self-perceived participation in IEP planning meetings. A subsequent questionnaire returned by 1,428 professionals working in schools indicated that team members may not always be fully aware, or in agreement about the roles and duties of the team. In Bray, Coleman, and Gott's (1981) survey of 205 educators and related service personnel, respondents rated, (a) professional disagreement, (b) role confusion, and (c) overstepping professional boundaries as their three highest concerns within the category "discipline-related concerns." All of these findings
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<tr>
<th>Authors</th>
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<th>Design / Analysis</th>
<th>Major Findings</th>
<th>Limitations</th>
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<tbody>
<tr>
<td>Campbell, McInerney &amp; Cooper (1984)</td>
<td>3 students with severe, multiple handicaps (ages 3, 14 &amp; 15); students had cerebral palsy, mental retardation and, in one case, visual impairment</td>
<td>Recording and analysis of intervention data; Baseline-intervention (A-B) and changing condition (A-B-C); (descriptive data, not experimental design)</td>
<td>Therapeutic techniques can be incorporated in functional activities; Increased opportunities to engage in movement can result in attainment of more normal movement patterns and accelerated rates of acquisition; therapeutic techniques can be carried out by nontherapists</td>
<td>Limited external validity due to small number (N=3); Unknown internal validity due to lack of experimental control; learner performance data was not verified by inter-observer reliability</td>
</tr>
<tr>
<td>Giangreco (1986b)</td>
<td>One 13 year-old student; Characteristics: female, severe cerebral palsy, nonambulatory, profound mental retardation, seizure disorder, visual impairment</td>
<td>Single subject experimental design (A-B-A-B) comparing direct versus indirect provision of occupational and physical therapy services in a classroom program</td>
<td>Student performance on functional task was improved during phases when the student received integrated therapy; Positive performance trend during integrated therapy; Incorporating therapeutic techniques with functional skill instruction can be important factor in student learning</td>
<td>Limited external validity due to small number (N=1)</td>
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### Table 2.3 (continued)

**Synopsis of Data-Based Learner Outcome Literature Regarding Group Interactions, Service Delivery Models, and Roles of Related Service Professionals**

<table>
<thead>
<tr>
<th>Authors</th>
<th>Subjects</th>
<th>Design / Analysis</th>
<th>Major Findings</th>
<th>Limitations</th>
</tr>
</thead>
<tbody>
<tr>
<td>McEwen &amp; Karian (1987)</td>
<td>One 3 year-old male; Characteristics: cerebral palsy, developmental levels for motor skills (2-3 months), for language skills (16-28 months)</td>
<td>Single subject alternating treatment design comparing effects of positioning in adaptive equipment on latency of switch activation and communication board use</td>
<td>Position can influence student ability to access a communication board; Positioning programs designed by therapists can have an impact on functional performance when the therapy input is incorporated in the context of functional activities</td>
<td>Limited external validity due to small number (N=1); reliability data not reported</td>
</tr>
<tr>
<td>Miedaner &amp; Renander (1987)</td>
<td>13 students ages 6-20; 8 males, 5 females; all subjects reported to be severely physically and cognitively impaired (reported at less than one year developmentally)</td>
<td>Experimental alternating condition design to determine differences in the preventive effects produced by varying frequencies of intervention; Controls included random assignment and blind measurement; Data analysis used T-Tests and ANOVA (Duncan post hoc); follow-up using post study surveys to explore potential confounding variables</td>
<td>No differences noted between students who received 2 sessions per week versus those who received therapy 5 sessions per week; Use of appropriate adaptive equipment may be used to stretch connective tissue as an adjunct to stretching programs done by people to serve preventive functions</td>
<td>Authors cited internal validity concerns regarding the potential confounding effects of existing positioning and bracing programs and lack of baseline that represented no range of motion treatment; they further suggested that results may be different given (a) students with varying types of severity of disability, (b) personnel with varying degrees of training, and (c) provision of various types of range of motion</td>
</tr>
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Table 2.3 (continued)
Synopsis of Data-Based Learner Outcome Literature Regarding Group Interactions, Service Delivery Models, and Roles of Related Service Professionals

<table>
<thead>
<tr>
<th>Authors</th>
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</tr>
</thead>
<tbody>
<tr>
<td>Sommerfeld, Fraser, Hensinger &amp; Beresford (1981)</td>
<td>29 students, characteristics: ages 3-22, severe mental retardation, cerebral palsy, history of attendance at regular schools; students were divided into 3 matched groups that were not significantly different in terms of their characteristics</td>
<td>Study compared: (a) direct physical therapy 2 times per week for 30 minutes; (b) supervised management (initial assessment by PT followed by indirect intervention by teachers and aides monitored by therapist weekly; and (c) no service (control group from a school where PT was unavailable); Data analyzed using ANOVA</td>
<td>No significant differences were found pre/post test within any group or across comparison groups in terms of mature developmental reflexes, improved gross motor skills, or increase in passive joint motion over a period of 5 months</td>
<td>Confounding variable of unspecified, &quot;normal services of an occupational therapist were available to all three groups&quot;; insufficient information provided about the specific therapeutic procedures to allow replication of the study; small numbers of students within each group limited external validity</td>
</tr>
<tr>
<td>Strawbridge, Drach, Sisson &amp; Van Hasselt (1987)</td>
<td>One 9-year-old male with profound mental retardation, visual impairment, cerebral palsy, microcephaly and behavior problems</td>
<td>Two single subject experimental designs, both (A-B-A-B) explored the effects of contingent-interrupted auditory stimulation and a prompting procedure to improve on-task mobility behavior (grasping walker with both hands) and independent use of a walker</td>
<td>Contingent-interrupted auditory stimulation increased on-task behavior from 21% to over 97%. Prompts resulted in improved use of a walker and collateral effects of reduction in stereotypic behavior from 98% during baseline to 6% after treatment</td>
<td>Limited external validity due to small number (N=1); reliability data not reported</td>
</tr>
<tr>
<td>Authors</td>
<td>Subjects</td>
<td>Method of Inquiry</td>
<td>Major Findings</td>
<td>Limitations</td>
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<td>Albano (1983)</td>
<td>Teachers and related service staff in 7 classes serving students with severe and multiple handicaps in one district using transdisciplinary model</td>
<td>Naturalistic Inquiry: document analysis, interviews, and direct observation (descriptive data)</td>
<td>Transdisciplinary teams take a lot of time to establish; Both students and staff benefit from well-operated transdisciplinary teams; Unified staff philosophy and attitudes are needed</td>
<td>Limited external validity due to small number of cases (classes in one school district); naturalistic inquiry approach does not apply experimental controls</td>
</tr>
<tr>
<td>Bray, Coleman &amp; Gotts (1981)</td>
<td>205 educators and related service staff serving students with handicaps; 59% of subjects worked in schools, 41% in agencies; 88% of total group were females</td>
<td>Questionnaire developed based on 150 field based interviews; questionnaire examined demography, team experiences, and perceived barriers to effective team function; Data analyzed by mean scores and ranks; (descriptive data)</td>
<td>Majority of respondents did not perceive listed barriers to be serious concerns; Overall, logistical barriers were greatest concern; Among discipline-related concerns, (a) professional disagreement, (b) role confusion, (c) and overstepping professional boundaries were the 3 highest concerns</td>
<td>Authors reported &quot;deficiencies in the sampling procedure&quot; and potentially idiosyncratic interpretations of survey terminology; while data analysis was reportedly conducted comparing respondents, no tests of statistical significance were reported; it is not known whether the self reports of respondents actually reflected their behavior; consumers were not included as studied team members</td>
</tr>
<tr>
<td>Authors</td>
<td>Subjects</td>
<td>Method of Inquiry</td>
<td>Major Findings</td>
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<tr>
<td>Fenton, Yoshida, Maxwell &amp; Kaufman (1979)</td>
<td>1,428 professionals (administrators, educators, related service personnel); Speech therapists were included while OT and PT were not; groups worked with students identified as having mild handicaps</td>
<td>Questionnaire explored 11 roles/responsibilities of placement teams based on State (CT) and Federal regulations; MANOVA and t-tests were used for data analysis; (descriptive data)</td>
<td>Team members may not be fully aware of, or in agreement about, team roles and duties; Groups must have unified goals to ensure appropriate educational services</td>
<td>It is not known whether the self-reports of respondents actually reflected their behavior; consumers were not included as studied team members; occupational and physical therapists were not included in the study.</td>
</tr>
<tr>
<td>Gilfoyle &amp; Hays (1979)</td>
<td>284 occupational therapists, 196 school administrators, and 41 respondents from State Superintendents of Schools offices.</td>
<td>3 questionnaires: (a) a 129-item survey sent to occupational therapists, (b) 10-item survey sent to school administrators, and (c) “open-ended” surveys regarding therapy programs and training sent to State Superintendents offices; Data analyzed using descriptive statistics. Results were reviewed by a 5-person, expert Advisory Council to assist in making recommendations</td>
<td>Major roles identified as evaluation/screening, program planning, implementation of intervention, supervision, and consultation. Findings were used to develop competency based training programs for occupational therapists</td>
<td>It is not known whether the self-reports of respondents actually reflected their behavior; it is not known how consumers and other team members perceived the roles and functions of therapists.</td>
</tr>
<tr>
<td>Authors</td>
<td>Subjects</td>
<td>Method of Inquiry</td>
<td>Major Findings</td>
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<tr>
<td>McCormick, Cooper &amp;</td>
<td>4 teachers working with students identified as moderately to profoundly</td>
<td>Pre-post coded observations of time involved in (a) instruction, (b) caretaking,</td>
<td>Inservice training resulted in increased total instructional time. Incorporating</td>
<td>Limited external validity due to small number (N=4 student teachers); Internal validity was compromised</td>
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<td>Goldman (1979)</td>
<td>mentally retarded and having assorted physical disabilities</td>
<td>(c) instruction and caretaking combined; (d) not interacting; Data were analyzed</td>
<td>program components in combination (e.g. caretaking, therapy management and</td>
<td>by: (a) no controls were employed; (b) alternative explanations were not offered (e.g. student teachers</td>
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<td></td>
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<td>using comparison of percentages; (descriptive data)</td>
<td>instruction, educational curricula) is a more efficient use of learner time</td>
<td>may have become more adept regardless of the training sequence)</td>
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<td></td>
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<td>than compartmentalization</td>
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<td>McCormick &amp; Goldman</td>
<td>Education and related service staff working in 3 classrooms for students</td>
<td>Coded observations of (a) caretaking; (b) instruction and caretaking combined;</td>
<td>In isolated therapy models, 50%-78% of student time was spent in caretaking by</td>
<td>Limited external validity due to small number (N=3 classrooms in the same school); Internal validity</td>
</tr>
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<td>(1979)</td>
<td>with severe mental retardation and various types and levels of physical</td>
<td>(d) recording writing, or planning; Data analyzed using a comparison of</td>
<td>staff; In isolated models, education staff spent half as much time in instruction</td>
<td>compromised by (a) lack of experimental controls; (b) limited time frame of study (7 mornings over a</td>
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<td></td>
<td>disabilities</td>
<td>percentages; (descriptive data)</td>
<td>and twice as much time in caretaking as related service staff; Isolated models</td>
<td>two-week period); and (c) absence of operational definitions for coded behaviors</td>
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<td>detracted from maximal use and equal diffusion of personnel responsibilities</td>
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Table 2.4 (continued)
Synopsis of Data-Based Literature on Observations and Opinions of Team Members Regarding Group Interactions, Service Delivery Models, and Roles of Related Service Professionals

<table>
<thead>
<tr>
<th>Authors</th>
<th>Subjects</th>
<th>Method of Inquiry</th>
<th>Major Findings</th>
<th>Limitations</th>
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<tr>
<td>Meyer, Eichinger &amp; Park-Lee (1987)</td>
<td>254 individuals representing (a) experts in behavior therapy, severe disabilities, deaf-blind, and mental retardation researchers, (b) State Directors of Special Education, and (c) parents of persons with severe handicaps</td>
<td>Nationally distributed questionnaire where respondents rated the importance of 123 program quality indicators in (a) integration, (b) individualized professional and instructional practices, (c) staff development, (d) data-based instruction &amp; (e) criterion of ultimate functioning (descriptive)</td>
<td>Study provided social validation for the perceived importance of program quality indicators in all included areas. Study verified perceived importance of integrated team collaboration in planning and instruction</td>
<td>Survey did not include feedback from related service personnel or experts (e.g. occupational therapists, physical therapists and speech/language pathologists)</td>
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<td>Prasse &amp; Fafard (1982)</td>
<td>15 graduate students in school psychology, special education and regular education</td>
<td>Video tapes and pre/post questionnaires were used to evaluate the effects of a simulated training program designed to facilitate team interactions among the groups represented. Data analyzed based on percent of responses (descriptive)</td>
<td>Training resulted in improved: (a) individual and group interactions; (b) awareness of input from other disciplines; (c) attitudes toward other disciplines; (d) expectations of other disciplines; and (e) interdisciplinary decision-making.</td>
<td>Limited external validity due to small number (N=15 graduate students); absence of experimental controls; no inferential statistical analysis of pre/post measures; insufficient procedural specificity to allow replication</td>
</tr>
<tr>
<td>Authors</td>
<td>Subjects</td>
<td>Method of Inquiry</td>
<td>Major Findings</td>
<td>Limitations</td>
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<td>Wolery &amp; Dyk (1984)</td>
<td>16 parents of children with severe handicaps</td>
<td>Questionnaires given to subjects to compare interdisciplinary assessment and transdisciplinary arena assessment conducted 8 to 10 months later; Data analyzed by percents</td>
<td>Parents &amp; professionals rated arena assessment more effective in terms of (a) accuracy, (b) parent involvement and (c) time efficiency</td>
<td>Limited external validity due to small number (N=16 families + N=6 staff members); lack of controls does not eliminate alternative explanations of effects (e.g. splitting order of assessment protocols for 50% of the sample could have control for effects of time and order)</td>
</tr>
<tr>
<td>Yoshida, Fenton, Maxwell &amp; Kaufman (1978)</td>
<td>1,344 members representing 230 IEP planning teams for students with handicapping conditions</td>
<td>Questionnaire explored a variety of aspects of the IEP planning team activities and processes</td>
<td>Team members of different professions vary in magnitude of self-perceived participation during planning meetings. Administrators, psychologists, social workers and counselors perceived more participation than teachers and medical personnel</td>
<td>It is not known whether the self-reports of respondents actually reflected their behavior; consumers were not included as studied team members; occupational and physical therapist were not included in the study</td>
</tr>
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</table>
have implications for group interactions.

Each of these surveys (Bray, Coleman, & Gotts, 1981; Fenton, Yoshida, Maxwell, & Kaufman, 1979; Yoshida, Fenton, Maxwell, & Kaufman, 1979) must be viewed cautiously since self-reported perceptions are always limited without corroborating observations of behavior. These studies are further limited in their application to groups working with students with severe handicaps because: (a) 41% of the respondents in the Bray, Coleman, and Gotts (1981) study were employed in nonschool agencies, (b) public school employees in each of the studies worked primarily with students with more mild handicaps; (c) occupational and physical therapists were not included in two of the three studies (Fenton et al, 1978; Yoshida et al, 1979) and (d) terminology on the questionnaires may have been interpreted idiosyncratically. Notably, consumers such as parents of students with handicaps were not included in the surveys, therefore readers only know how professionals view their interactions and roles and not how the consumers view the same phenomenon. Consumer perception of group interaction and functioning is vital to the provision of appropriate education if special education continues to view itself and behave as a service to the public.

Group dysfunction is believed to result from various scenarios such as: (a) a dominant team member, (b) an inferior team member, (c) a specific conflict between two team members, (d) one team member in conflict with all others, (e) factions within the team, or (f) an isolated team member (Bailey, 1984). Like most of the literature on group interactions in special education, Bailey’s ideas have strong intuitive validity, but are not data-based.

Hutchinson (1978) points out that, “Calling a small group of people a team does
not make them so;” (p. 70). Many interprofessional groups have been formed because of external mandates rather than self-identified need, raising the question of the commitment of group members to work as a team (Bray, Coleman, & Gotts, 1981). This reality is further complicated by the realization that the term "team" has no standard definition and has been interpreted idiosyncratically (Bray, Coleman, & Gotts, 1981). Kaiser and Woodman (1985) concluded that "... there is no data at present to suggest that simply bringing together a number of different professionals ensures the most appropriate decisions”.

Consistent opinions found in the literature suggests that there are at least seven major characteristics that describe a team. (a) Teams have two or more members who possess various skills that may serve different functions, therefore, allowing the body of theory and skills to be enlarged (Albano, Cox, York & York, 1981; Golin & Ducanis, 1981; Hart, 1977; Hutchinson, 1978; Kane, 1975a; Peterson, 1981). (b) Team members develop a common framework and purposefully pursue a unified set of goals (Albano, Cox, York & York, 1981; Chamberlain, 1977; Fenton, Yoshida, Maxwell, & Kauffman, 1979; Hutchinson, 1978; Kane, 1975a). (c) Team members engage in problem-solving and collaborative activities to reach the unified set of goals (Albano, Cox, York & York, 1981; Campbell, 1987b; Connor, Williamson, & Siepp, 1978; Firestien & Treffinger, 1983; Johnson, Johnson & Holubec, 1986; Orelove & Sobsey, 1987; Parnes, 1981; Thousand et al, 1986). (d) Team resources are shared and allocated to attain the unified set of goals (Albano, Cox, York & York, 1981; Bricker, 1976; Johnson, Johnson & Holubec, 1986; Thousand et al, 1986). (e) Participatory interactions among team members are designed to complement each other and potentiate effectiveness (Albano, Cox, York & York, 1981; Hutchinson, 1978; York et al, 1985). (f) Team members serve a collective
evaluation function for each other through feedback loops (Albano, Cox, York & York, 1981; Hutchinson, 1978; Kane, 1975a, b; York et al, 1985). (g) Success or failure of the team is judged by group performance relative to the unified set of goals, rather than by individual performance of team members (Albano, Cox, York & York, 1981; Hutchinson, 1978; Kane, 1975a, b; Thousand et al, 1986; Johnson, Johnson & Holubec, 1986).

Assuming basic professional competency, several authors offer the opinion that the effectiveness of individual team members depends upon their collaborative, problem-solving, communicative, and interpersonal skills (Chamberlain, 1977; Golin & Ducanis, 1980; Swick, 1976; Thousand et al, 1986; York et al, 1985). Blechert, Christiansen, and Kari (1987) believe that collaboration is necessary for team building since teamwork is, in part, a process where all team members negotiate to meet each other's respective needs and, through that process, the needs of the person being served. They believe that effective team members possess a number of characteristics including: (a) Effective team members treat others as individuals. They accept and appreciate differences in others. (b) Effective team members are flexible, especially when faced with either internal or environmental stresses. (c) Effective team members obtain gratification from a wide variety of sources such as people, ideas, tasks, interests, and values. (d) Effective team members have realistic self-concepts. They accept their own limitations and strengths, and neither overvalue or undervalue their personal abilities; and (e) Finally, effective team members are active and productive. They use their abilities in the service of others and for self-enhancement. No data is provided to substantiate these claims of effectiveness. Thousand et al (1986) offer examples of how some of
these characteristics are manifested as behaviors during team interactions (p.36). Criticizing an idea rather than a person, building on a teammate's idea, or integrating several opinions into a single position are examples of such collaborative skills. While most school personnel would relish the opportunity to serve on teams comprised of people who all possess such desirable attributes, such characteristics represent the goal rather than the norm. Brown, Nietupski, and Hamre-Nietupski (1976) argued that teams rarely produce coordinated and empirically verified educational outcomes for learners with severe handicaps. There is little data or opinion in the literature since 1976 to suggest that much has changed regarding the presence of empirically verified learner outcomes based on coordinated team efforts. Again, available literature is summarized in Table 2.3.

**Group / Team Development**

Various authors have argued that the process of becoming a team is an evolutionary and time consuming process (Blechert, Christiansen, & Kari, 1987; Bray, Coleman, & Gotts, 1981; Golin & Ducanis, 1981; York et al, 1985). Morgan and Bray (1978) believe that this process is developmental in nature. Lowe and Herranen (1982) concur with the developmental view of teamwork and offer a six-stage theoretical model to describe it. Stage I (Becoming acquainted) is characterized by hierarchical group structures, autocratic leadership, polite yet relatively impersonal interactions, and low overall team productivity. Stage II (Trial and error) marks the beginning of working together toward a common goal, factions within teams may develop, and role conflict and ambiguity may occur. Stage III (Collective indecision) results when team members attempt to avoid direct conflicts
with each other in order to establish a sense of equilibrium. This stage is also characterized by an absence of group norms for accountability regarding team goals and tasks. Stage IV (Crisis) presents itself when the team is faced with the realization that they have an important task with which they must deal. Team members often express emotions verbally and nonverbally during crisis situations. Stage V (Resolution) occurs when the team exerts the effort to work together and engage in open communication, as well as share leadership, decision-making, and responsibility. Stage VI (Team maintenance) is the highest level where resolution has been achieved and team members must continually self-evaluate and adjust their attitudes, expectations, and behaviors in order to maintain that resolution.

Maintaining the team at a high level of operational quality is driven by a focus on serving client's needs and assisted by active efforts to maintain positive team interactions (including with the consumer) as well as methods for conflict management.

Prasse and Fafard's (1982) quasi-experimental study sought to determine if simulated training experiences could facilitate positive team interactions. They reported that training experiences resulted in improvement in interactions, awareness of input from other disciplines, attitudes toward other disciplines, and decision-making. While such results are encouraging, the study was conducted with a total of only 15 graduate students in school psychology, special education, and regular education. The small number, simulated nature of the intervention, and the absence of allied health professionals and parents seriously detracts from the generalizability of these findings to group interactions that take place in real schools regarding actual student needs.
There has also been considerable discussion of other barriers to effective team functioning. Preservice training programs are typically unidisciplinary in nature, so that professionals in the various professions have limited preparation for the tasks related to teamwork with multiple disciplines (Abelson & Woodman, 1983; Albano, Cox, York & York, 1981; Geiger, Bradley, Rock, & Croce, 1986; McCormick & Goldman, 1979; Peterson, 1980; Rainforth, 1985; Sears, 1981). Interpersonal and professional communication skills also have been implicated in team dysfunction (Chamberlain, 1977; Swick, 1976). Sirvis (1978) emphasizes that professional jargon associated with particular disciplines but unknown to others can be problematic, especially in communications between professionals and parents. Bricker (1976) suggests that specialists (such as therapists) must reduce their use of jargon, while parents and teachers must be more willing to ask for translations to lay terminology. Bray, Coleman & Gotts (1981) reported that the professionals in their survey study considered the logistical and procedural aspects of teamwork to be their greatest concerns. Procedural problems can reduce equity during team interactions. For example, some researchers have noted significant imbalance of participation among team members at planning meetings (Bray, Coleman & Gotts, 1981; Yoshida, Fenton, Maxwell, & Kaufman, 1978). Other, non-data-based sources have suggested procedural mechanisms designed to enhance equivalent opportunity for participation (Campbell, 1987b; Thousand et al, 1986; York et al, 1985). Finally, it has been suggested that team members may experience stress related to changing or sharing roles to which they are unaccustomed, such as consulting with adults when they have been trained to intervene directly with students (Ottenbacher, 1982; Sears, 1981).

Overcoming these, and other barriers to teamwork requires a conscious effort,
that can be facilitated by a supportive climate, a knowledgeable supervisor, and member commitment to teamwork (Blechert, Christiansen & Kari, 1987). Chamberlain (1977) captured the interdependent rather than discipline-specific nature of commitment to teamwork when she suggested that members' determination to function as a collaborative team must outweigh "... all considerations of aggrandizement of the role, function, and status of particular disciplines." If the intuitive value of this statement is accepted, it implies that preservice and inservice training and supports provided to professionals and parents must focus on collaborative, interdependent approaches to interaction and that professionals actively avoid socialization of new members in ways that promote parochialism.

**Service Delivery Models**

Groups of adults assigned to work with students with severe handicaps have been referred to using a variety of descriptors; those most frequently included in the professional literature are, (a) unidisciplinary, (b) multidisciplinary, (c) interdisciplinary, and (d) transdisciplinary.

**Unidisciplinary**

*Unidisciplinary* refers to an approach where professionals deal with clients in autonomous ways (Bailey, 1984). Professionals functioning in unidisciplinary modes possess adequate preparation and are considered competent in their discipline (United Cerebral Palsy Association, 1976). While, unidisciplinary models are fraught with limitations related to provision of educationally supportive services,
Bailey (1984) explains that team dysfunction is not a problem because no team exists. No literature was located that advocated this approach to providing educationally related services for students with severe handicaps. Unidisciplinary models are more frequently employed in medically oriented settings such as hospitals, clinics, and private practices. While services delivered in a unidisciplinary fashion may be appropriate to address isolated needs (i.e. physical therapy for a lower back injury), such approaches have not received support in the fields of special education and rehabilitation because persons with severe handicaps present complex and multiple challenges that are beyond the scope of any single discipline functioning in an autonomous fashion.

Multidisciplinary

Multidisciplinary approaches recognize the importance of contributions made by various professional members (Hutchinson, 1978; United Cerebral Palsy Association, 1976). Implementation of the model begins with individual assessments conducted separately by persons from each discipline (Baine & Sobsey, 1983; Campbell, 1987b). Professionals from the disciplines then meet as a group to exchange information (Bailey, 1984). Throughout this process, each discipline remains substantively independent and is affected very little by contributions made by other team members (Baine & Sobsey, 1983; McCormick & Goldman, 1979; Sirvis, 1978). The multidisciplinary model may be characterized by coexistence (Sparling, 1980). Interpretation of exchanged information is based on disciplinary biases, and no formal attempts are made to allocate resources based on student needs or to consider overlap between disciplines (McCormick & Goldman, 1979). Kaiser
and Woodman (1985) noted that, "... it is inappropriate to conclude that multidisciplinary teams facilitate collaboration and trust, while reducing interprofessional rivalry". Failure of multidisciplinary approaches to account for numerous, complex, and overlapping needs of students with severe handicaps can lead to fragmentation of service delivery and coordination difficulties (Orelove & Sobsey, 1987). While fragmentation and coordination problems would seem to be a logical outcome of multidisciplinary interactions, little data has been collected to verify or refute this criticism. Peterson (1980) asserts the opinion that the recommendations based on multidisciplinary group meetings often result in recommendations that are numerous, complicated, and difficult to implement.

**Multidisciplinary Assessment, Planning, and Intervention**

Multidisciplinary assessment and planning typically is followed by one-to-one programming delivered in an isolated manner with a focus on remediating identified weaknesses in student performance (Albano, 1983; Albano, Cox, York, & York, 1981; Campbell, 1987b; Hart, 1977; Peterson, 1980). Sternat et al. (1977) take the stance that isolated provision of services consists of the following five basic characteristics. (a) Students are removed from the classroom or other natural environments to receive therapy. (b) Diagnostic efforts primarily are based on developmental discrepancies. (c) Services are provided in an episodic fashion (e.g. two times per week for 30 minutes). (d) Since the specialists' schedules typically include a number of students waiting to receive direct, isolated therapy, the time available for the specialist to consult with other staff members is limited or nonexistent. (e) If students display little progress through normal developmental
sequences they may be reduced or eliminated from specialized services in order to make room for students who have a better prognosis for remediation. While comprehensive data is unavailable, some national and regional demographic surveys regarding service delivery in schools indicate that isolated, "pull out" approaches continue to represent the primary mode of related service delivery for occupational and physical therapists (AOTA, 1986b; Campolieto & DeRitter, 1986). Wolfensberger's (1977) principle of normalization suggests that the provision of highly specialized services may be viewed as stigmatizing events that serve to separate and isolate persons with disabilities. It is conceivable that the provision of direct, isolated related services could have such an effect on students with handicapping conditions and therefore detract from their educational experience.

Giangreco (1986b) extended this description of physically isolated services by explaining that services may also be programmatically isolated. Programmatic isolation refers to assessment, planning, intervention, and evaluation infrequently or minimally referenced to the educational program. Physical and programmatic isolation may exist independent of each other. One implication of this distinction is that services that physically take place in the classroom do not necessarily support the student's educational program, and therefore would not meet the intention of related services.

Observational research conducted by McCormick and Goldman (1979) indicated that the use of an isolated therapy model may lead to unequal distribution of responsibilities among professionals. The study reported that teachers spent twice as much time engaging in caretaking activities than instructional activities, while the reverse was true of therapists based on coded observations of adult behaviors. The data suggested that isolated models detract from equal diffusion of
responsibilities and maximal use of the competencies of all school personnel. These data must be viewed cautiously since observations were conducted over only seven mornings during a two week period and no experimental controls were employed. The generalizability of these findings is also limited since observations were made in three classrooms in the same school.

Critics of isolated therapy approaches suggest that isolated therapy is based on false assumptions; such as: (a) information gathered in isolated settings accurately reflects student behavior in real life environments, (b) normal developmental models can be appropriately applied to students with severe handicaps, (c) episodic therapy will result in substantial development, and (d) skills learned in the isolation of the therapy room will be generalized to the settings in which they will be used by students (Sternat et al, 1977). Sternat and her colleagues suggest that general or exclusive use of isolated therapy models for students with severe handicaps should be rejected in most instances since more efficient models are available. While Sternat and her colleagues (1977) are correct that little evidence exists regarding the desirability of isolated models of service delivery in educational settings, their claim that more efficient models are available is also not substantiated in the professional literature more than 10 years after their assertion.

**Interdisciplinary**

Interdisciplinary approaches have been described as similar to multidisciplinary models. They begin with isolated assessment and result in the delivery of isolated therapy services (Albano, Cox, York & York, 1981; Campbell, 1987a, 1987b;
Hart, 1977; McCormick & Goldman, 1979; Orelove & Sobsey, 1987; Peterson, 1980). Interdisciplinary models can be distinguished from multidisciplinary by the establishment of formal reciprocal channels of communication and the assignment of a case manager to coordinate a comprehensive student program (Baine & Sobsey, 1983; McCormick & Goldman, 1979; Peterson, 1980; United Cerebral Palsy Association, 1976). The interdisciplinary model was considered to mark a significant improvement in service delivery because it encouraged mechanisms for the sharing of information, assessment results, and intervention priorities between disciplines (Connor, Williamson, & Siepp, 1978; United Cerebral Palsy Association, 1976).

While interdisciplinary groups theoretically have strong commitments to group decision-making and comprehensive planning, McCormick & Goldman (1979) purport that interdisciplinary models often have similar isolated results as multidisciplinary approaches. For example, group members may share individually generated assessment information and goals, then agree to pursue separate paths in terms of priorities, planning, implementation, and evaluation as reflected in separate Individual Educational Plans (IEPs) or sections of IEPs for each discipline rather than developing a unified IEP. Peterson (1980) points out that professionals working in interdisciplinary models may make conflicting recommendations. For example, educators may recommend the use of motor responses to engage in self-care activities that therapists recommend should be inhibited (Peterson, 1980). Kaiser and Woodman (1985) support these contentions by stating, "... that interdisciplinary teams can easily become segmented and this process can create discontent".
Transdisciplinary

The transdisciplinary team approach refers to a conscious, deliberate, systematic transfer and sharing of information, knowledge, and skills across traditional disciplinary boundaries through a teaching/learning/working triad (Haynes, 1968; Hutchinson, 1978). The transdisciplinary model supports the indirect provision of specialized services designed to promote effective utilization of professional manpower, minimize compartmentalization, and reduce fragmentation of services. In part, indirect services can decrease dependency upon the presence of the specialists, therefore reducing potentially detrimental effects experienced by students when schools are unable to fill therapy job vacancies. Unfilled positions due to national shortages of qualified specialists are expected to continue into the 1990's (Acquaviva, 1986). Another primary feature that distinguishes the transdisciplinary model is feedback mechanisms designed to assist in evaluation and program revision (McCormick & Goldman, 1979). Additionally, the transdisciplinary model differs from others in that it includes consumers (parents and/or students) as full members of the team (Hutchinson, 1978). Multidisciplinary and interdisciplinary groups, typically consisting of professionals exclusively, meet with consumers to share professional recommendations.

Role Release and Primary Implementor

"Role release" and "primary implementor" components became cornerstones of transdisciplinary educational teams. These vehicles were designed to maintain continuity within the framework of individualized program planning for students. Further, these mechanisms served to retain and synthesize input from specialists.
while reducing the number of professionals providing direct service to an individual (Hutchinson, 1978). Role release refers to the release of traditional roles and activities, including general information, informational skills, and performance competencies to those outside of one's own discipline (Hutchinson, 1978; Lyon & Lyon, 1980). Role release may reduce the mystique surrounding certain related services, particularly medical allied health services and is designed to incorporate specialized methods into a variety of functional skills (Baine & Sobsey, 1983; Lyon & Lyon, 1980). Under ideal circumstances, role release is designed to be multidirectional, rather than exclusively from the therapist to the teacher or parent. Its reciprocal nature is based on the assumption that all team members can make valuable contributions. Like many aspects of "best practice" in the field, role release is a goal toward which many professionals may aspire, yet little data exists to suggest that role release is currently employed by many practicing teams. Albano (1983) reported successful role release in her case study based on extensive direct observations, interviews, and document analysis. The findings and conclusions of this study have limited transfer value to other settings due to the method of inquiry and the fact that all observations took place in the same school district in a University community. Additionally, it appears that the staff involved in the classrooms may have had more extensive preparation in both the education of students with severe handicaps and teamwork than typically found in schools around the country. Albano's (1983) study is valuable in describing the learner and adult benefits of transdisciplinary interactions and provides rich descriptions of participants' perspectives.

"Primary" therapist or implementor refers to a person or persons who carry
out the input of various team members in a synthesized manner given training and ongoing monitoring of qualified specialists (Campbell, 1987a; Hutchinson, 1978; McCormick & Goldman, 1979). Bricker's (1976) "educational synthesizer" model was an example of the teacher as the primary implementor. By assuming responsibilities beyond one's traditional discipline, teachers are not carrying out therapy -- rather, they are combining methods from various disciplines to teach functional skills (Campbell, 1987b, York et al, 1985).

While Rainforth and York (1987) concur that the teacher or classroom assistants are likely to be the primary implementors, related service personnel may also assume this function. For example, a speech/language pathologist may teach a group of three students to make purchases in community stores. In doing so, this specialist may be asked to combine methods and input from education, physical therapy, occupational therapy, as well his or her own discipline. The American Physical Therapy Association (1985) supports the provision of therapy services in natural environments by stating, "In contrast to the usual practice of providing physical therapy services in a separate setting, providers of physical therapy services in educational environments should consider utilizing the classroom as a therapeutic environment in order to ensure the functional usefulness of skills being taught and the generalization of skills to environments in which they are needed." (p. 43). Opportunities for therapists to serve as primary implementors can be facilitated by procedural accommodations such as "block scheduling" (Rainforth & York, 1987; York et al, 1985). Therapists have expressed mixed emotions about the expansion of their role beyond the therapy room. During a national ASHA Teleconference one of the principal facilitators stated, "... there is increasing
pressure on therapists to get out their closets. For years we sat and complained about being stuck in a closet and now people are telling us to get out and we’re holding on the doorknobs and screaming in frustration because we don’t want to leave them” (ASHA, 1985).

**Transdisciplinary Assessment**

Two forms of transdisciplinary assessment have been discussed in the literature. Wolery and Dyk (1984) provided preliminary social validation of parent and professional preference for transdisciplinary arena assessment rather than traditional interdisciplinary assessment. In the arena model, one team member, usually the one with the most expertise in the child’s area of need, administers assessment items while parents and other team members observe and record performance. The arena approach purports to: (a) eliminate redundant testing and parent questioning, (b) reduce the number of adults directly assessing the student, (c) allow observations to be made across many areas, (d) provide opportunities for team members to share information and ideas, and (e) enhance consensus building regarding student needs. While arena approaches logically embody improvements over traditionally isolated and redundant interdisciplinary models, they may be limited by the same factors that reduce the validity of any physically isolated assessment. Typically, the arena assessment is conducted during a single session or a small number of sessions. Student behavior in the arena may not reflect actual behavior in real situations. Theoretically, the parent is present, in part, to validate or explain student performance. Wolery & Dyk’s (1984) study was presented as “preliminary” social validation data. The results must viewed with the realization
the study examined the perceptions of six professional staff members and 16 parents, all of whom had children enrolled in the same preschool for students with handicapping conditions. The results are further limited by a lack of controls to avoid alternative explanations of outcomes. For example, in the study all parents were exposed to traditional interdisciplinary assessment first and then to transdisciplinary arena assessment several months later. If the group had been split in half, with each half receiving a different assessment approach, readers could be more confident that the effect was not due to time or order of presentation. Equally as important, the study only discussed the respondents satisfaction with the approach, but failed to explore whether the results of the different assessment approaches resulted in different information or objectives for students.

An alternative approach to transdisciplinary assessment consists of assessment of functional routines in natural environments (e.g. school, home, community, worksite, recreational locations) through the use of repeated observations over days or weeks (Baine & Sobsey, 1983; Brown et al, 1979; Rainforth & York, 1987; Sternat et al, 1977). In this model, school staff representing various disciplines observe the student engaging in the actual behaviors that make up the curriculum. Often natural environment assessment combines assessment and instruction in an interwoven fashion. While this approach enhances the validity of the assessment, its time consuming nature and the coordination problems associated with including all related service providers can detract from its usefulness. Each of these assessment approaches and their variations represent tradeoffs in terms of time, coordination of human resources, expense, validity, generalizability of results, and the information that they can generate.
Support for Transdisciplinary Approaches

Despite a lack of empirical verification, many authors consider transdisciplinary service delivery to be the most desirable approach for educating students with severe handicaps (Albano, 1983; Albano, Cox, York & York, 1981; Baine & Sobsey, 1983; Campbell, 1987b; Connor, Williamson & Siepp, 1978; Fox et al, 1987; Giangreco, 1986a; Lyon & Lyon, 1980; McCormick & Goldman, 1979; Orelove & Sobsey, 1987; Peterson, 1980; Rainforth & York, 1987; Sirvis, 1978; Sparling, 1980; Sernat et al, 1977; United Cerebral Palsy Association, 1976).

Support for transdisciplinary service delivery as a desirable model was echoed in an out-of-court settlement agreement made between the Philadelphia School District and plaintiffs representing students with handicapping conditions. The agreement was an extension of the landmark PARC v. Commonwealth of Pennsylvania (1972) case that established the right to public education for students with severe handicaps. Following this case, lack of enforcement led to additional suits being filed. Finally, in 1982 a consent decree on the enforcement of PARC v. Commonwealth of Pennsylvania was handed down based on the Fialkowski et al v. School District of Philadelphia. The agreement required the school district to provide extensive retraining and instructional support to staff working with students with severe handicaps. In part, this training and support expressly identified transdisciplinary services as the basis for the delivery of related services. This included, (a) collaborative planning and evaluation between teachers and specialists for students receiving related services, and (b) that therapeutic goals and/or techniques be carried over into educational activities with input from the therapist (McGregor, Janssen, Larsen, & Tillery, 1986).
Lack of Adoption and Potential Barriers to Transdisciplinary Implementation

Despite apparently widespread support for the transdisciplinary approach, it is believed that transdisciplinary teamwork has had limited adoption in public school programs serving students with severe handicaps (Geiger, Bradley, Rock & Croce, 1986). Geiger and his colleagues (1986) point to personnel shortages (Acquaviva, 1986), inadequate personnel preparation (Rainforth, 1985), liability concerns regarding role release (Ottenbacher, 1983), unknown cost implications, and lack of empirical evidence supporting the model as reasons for its limited adoption. Additionally, concern has been expressed regarding issues of territoriality (Prasse & Fafard, 1982). Role changes associated with transition to transdisciplinary models may be stressful (Ottenbacher, 1982; Sears, 1981) and professionals may experience interpersonal difficulties or resentment training others to engage in tasks considered to be the specialized dominion of their discipline. Professional territoriality can be a powerful factor interfering with role release as evidenced by a recent out-of-court settlement between the Kentucky Chapter of the American Physical Therapy Association (KAPTA) and The Kentucky Occupational Therapy Licensure Board ("Kentucky OTs," 1988). In 1987, the KAPTA filed suit against the Licensure Board, disputing state regulations that allowed occupational therapists to use certain treatment modalities. The physical therapists argued that the modalities in question were the province of physical therapy and could not be administered by occupational therapists. This situation may be viewed as a manifestation of a group attempting to establish itself as an independent discipline as mentioned in Chapter 1.
**Integrated Therapy**

The application of transdisciplinary teams for students with severe handicaps has been expanded by the development of integrated therapy (Sternat et al, 1977). Integrated therapy refers to the incorporation of educational and therapeutic methods employed cooperatively to assess, plan, implement, evaluate, and report progress on common needs and goals (Giangreco, 1986a). These combined methods are implemented in a synthesized manner within functional activities in instructional and/or natural environments (Campbell, 1987b; Guess & Helmstetter, 1986; Rainforth & York, 1987; Sternat et al, 1977). Integrated therapy has been identified in the literature as a component of "appropriate", "innovative", "best", and "most promising" educational practices for students with severe handicaps (Bates, Renzaglia, & Wehman, 1981; Campbell, 1987a; Fox, Thousand, Williams, Fox, Towne, Reid, Conn-Powers, & Calcagni, 1986, 1987; Meyer, Eichinger, Park-Lee 1987), although only the work of Meyer and her colleagues has been validated nationally.

Four studies have reported positive results regarding the application of integrated therapy approaches to reaching and manipulation skills (Campbell, McInerney, & Cooper, 1984), communication board use (McEwen & Karlan, 1987), ambulation with the use of a walker (Strawbridge, Drnach, Sisson, & VanHasselt, 1987), and switch activation (Giangreco, 1986b). While it is encouraging that verified demonstrations have begun to emerge in the professional literature, the small number of studies and the nature of the research is currently insufficient to
claim generalizable empirical validity. The study by Campbell, Mclnerney, and Cooper (1984) reported intervention data on three separate single-subject case studies. The internal validity of these case studies is unknown because no experimental controls were employed and learner performance was not verified through inter-observer reliability. The remaining studies each employed single-subject experimental designs (Giangreco, 1986b; McEwen & Karlan, 1986; Strawbridge et al 1986). Single-subject experimental designs are typically believed to have strong internal validity, while the strength of their external validity is often judged by numerous replications in the field. While the limited extent of research on integrated therapy may not currently qualify it as a verified component of best practice, its relative newness as an approach and the limited extent of transdisciplinary research partly explains the absence of publications.

Some professionals have expressed the opinion that indirect services promoted by transdisciplinary and integrated therapy models are necessarily less intensive and less desirable than direct therapy (Sandler, 1985). This "more-is-better" theorizing was not supported by McCormick, Cooper, & Goldman's (1979) study. These authors found that the integration of various routine activities within the context of other activities (e.g. instructional/therapeutic input provided within the context of caregiving) could improve time use efficiency, thus creating more available time for instruction. While this coded observational data has logical appeal, its power to convince is limited by small numbers and a lack of controls. Direct service proponents may also support direct services based upon the assumption that the knowledge and expertise of the professional is so specialized that implementation cannot be released to others (Ottenbacher, 1983). In an experimental study of 29 individuals with cerebral palsy and severe mental
retardation, ages 3-22, researchers compared direct physical therapy services; indirect, supervised therapy management; and a matched control group who did not receive physical therapy. They found no significant differences on measures of mature developmental reflexes, gross motor skills, and passive range of motion (Sommerfeld, Fraser, Hensinger, & Beresford, 1981). In a related study, Miedaner and Renander (1987) employed an alternating condition experimental design to explore differences in the preventive effects produced by varying frequencies of physical therapy intervention. In their study of 13 students with severe physical and cognitive handicaps, they found no differences in six of seven joint angles measured for students who received therapy two times per week versus those who received it five times per week. Their finding is especially compelling since the post hoc analysis of the ANOVA scores were calculated using the relatively liberal Duncan new multiple range test. The $F$ score on the single significant variable was of sufficient magnitude that even if the most conservative post hoc procedures were used, the $F$ would still be statistically significant. Giangreco (1986b) compared direct and indirect modes for the delivery of occupational and physical therapy input with an adolescent student with severe and multiple disabilities. Using an experimental return-to-baseline design, the study indicated that the student's performance on a functional task (switch activation to obtain music) was better when services were provided in an indirect fashion.

Certain roles, criteria, and authority perception are conceptually aligned with certain organizational factors, particularly certain service delivery models. For example, transdisciplinary team members would support consensus decision making, while interdisciplinary proponents would advocate the sharing of recommendations.
but the retention of decision authority by specialists. Such information can assist in understanding potential differences and similarities among parents and various professionals.

Decision-Making Factors Affecting the Provision of Related Services

This section reviews decision-making factors that affect the provision of related services in schools. These factors have been categorized as roles, criteria, and authority beliefs as perceived by parents and professionals. Roles, criteria, and authority beliefs have been based on a combination of instructional logic, values, and minimal data (Baine, Sobsey, & McDonald, 1986; Fenton, Yoshida, Maxwell, & Kaufman, 1979; Magrun & Tigges, 1982; Sparling, 1980; Rogers, 1983; Yoshida, Fenton, Maxwell, & Kaufman, 1978). As depicted in Table 2.5, only one data-based study was identified that directly related to the roles of one of the subject groups in this study, occupational therapists (Gilfoyle & Hays, 1979). Major roles such as evaluation, screening, program planning, implementation, supervision, and consultation were identified and used to develop competency-based training programs for occupational therapists (Gilfoyle & Hays, 1979). Since the study was conducted some time before 1979, it addressed pertinent issues that faced educators and therapists during an era when related service delivery in the schools was first being operationalized. Data-based professional literature post-1979 has not explored additional roles of occupational therapists or other related service personnel given the years of field-based experience professionals and consumers have encountered since the passage of P. L. 94-142 in 1975, thus a major gap exists in the
Table 2.5
Synopsis of Literature on Roles, Criteria, and Authority that Effect Related Service Decision-Making

<table>
<thead>
<tr>
<th>TOPICAL AREAS</th>
<th>ROLES OF SPECIALISTS</th>
<th>DECISION-MAKING CRITERIA</th>
<th>AUTHORITY PERCEPTIONS</th>
</tr>
</thead>
<tbody>
<tr>
<td>LEGISLATION AND LITIGATION</td>
<td>Code of Federal Regulations (1987)</td>
<td>None Identified</td>
<td>None Identified</td>
</tr>
<tr>
<td>DATA-BASED STUDIES OF LEARNER OUTCOMES</td>
<td>None Identified</td>
<td>None Identified</td>
<td>None Identified</td>
</tr>
<tr>
<td>DATA-BASED OBSERVATIONS AND OPINIONS OF TEAM MEMBERS</td>
<td>Gilfoyle &amp; Hays (1979)</td>
<td>None Identified</td>
<td>None Identified</td>
</tr>
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<td>Bricker (1976) a</td>
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<td></td>
<td>Baine, Sobsey &amp; McDonald (1986) a</td>
<td>Baine, Sobsey &amp; McDonald (1986) a</td>
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</table>

a denotes references that are specifically focused on students with severe mental retardation.
descriptive data base available to understand existing service delivery and upon
which to base further research.

Similar to the other topical areas discussed in this review, conjecture and
opinion dominate practice in the field. The following sections discuss potential areas
of agreement and disagreement among group members regarding roles, criteria, and
authority issues regarding related service decision-making on behalf of students
with severe handicaps.

Roles and Functions of Allied Health Professionals Working as Related Service Providers

This section describes 10 roles of occupational therapists, physical therapists,
and speech/language pathologists as related service providers for students with
severe handicaps (American Occupational Therapy Association, 1983, 1987;
American Physical Therapy Association, 1985; American Speech-Language-Hearing
Association, 1984, 1985; Gilfoyle & Hays, 1979; Sabari, Wasserman, White,
Williamson, & Hinojosa, 1983; The Association for Persons with Severe Handicaps,
these 10 roles in its definitions of various related services (§ 300.13). These roles
include: (a) prevention, (b) restoration, (c) adaptation, (d) facilitation of
functional skills, (e) consultation, (f) removal or modification of barriers, and
(g) liaison with the medical community. While the role of advocacy for students is
not expressly stated in the Regulations, it is implicit in its intent. The lone role not
clearly present or implied in the Regulations is the promotion of normal
developmental sequences. While P. L. 94-142 does state that related services are,
"... developmental, corrective, or other supportive services...", this does not seem to imply that its intent is necessarily to promote normal developmental sequences. Promoting normal developmental sequences was included in this review because normal developmental models have been closely associated with allied professions such as occupational, physical, and speech/language therapy (Ottenbacher, 1982).

While each of these roles is presented as distinct, they are interrelated and share considerable overlapping features. Agreement regarding role perceptions can offer a basis for shared decision-making, while disagreement can pose a barrier to effective group functioning (Bray, Coleman, & Gotts, 1981). Disagreements regarding roles primarily have been associated with lack of role clarity (Albano, Cox, York & York, 1981; Bray, Coleman, & Gotts, 1981; Fenton, Yoshida, Maxwell, & Kaufman, 1979; Hutchinson, 1978 ). Role delineation alone does not necessarily lead to effective teamwork. Magrun and Tigges (1982) suggest that satisfaction with one's own role identity may promote separation between group members rather than facilitating cooperation. This realization emphasizes the importance of developing an interdependent set of roles among group members to establish productive teamwork (Hutchinson, 1978).

Prevention of Regression, Deformity, or Pain

The role of preventing regression, deformity, or pain is a source of agreement across disciplines ( American Occupational Therapy Association, 1983, 1987; American Physical Therapy Association, 1985; American Speech-Language-Hearing Association, 1984; Frassinelli, Superior, & Meyer, 1980; Lansing & Carlsen, 1977; Larsen & Poplin, 1980). Specialists can, "... play an important role in
preventing the secondary effects of severe disability that threaten to further limit the client's function." (Sabari, Wasserman, White, Williamson, & Hinojosa, 1983).

For example, (a) students with certain types of cerebral palsy must receive prescribed intervention to avoid debilitating joint contractures; (b) given the support of special equipment, students with spina bifida may be required to bear weight to inhibit osteoporosis (brittle bones); or (c) students with loss of sensation in their lower extremities may be provided with seating adaptations to distribute pressure, and/or instructed in a self-management procedures to avoid decubitis ulcers (bed sores) (Bleck & Nagel, 1975; McCubbin, 1983; Thomas, 1977). The regression, deformity, or pain resulting from lack of attention to secondary effects of handicapping conditions can directly or indirectly compromise a student's ability to participate in his or her educational program. In the most severe cases, inattention to these issues can result in the student being absent from school due hospitalization or infirmity, therefore not accessing the educational program. In less severe cases, learning may be impeded if the student's condition causes distraction, frustration, or inhibition.

**Promoting Normal Developmental Sequences**

Normal developmental sequences have been widely applied to educational and therapeutic efforts for students with severe handicaps (Bobath & Bobath, 1984; Connor, Williamson & Siepp, 1978; Finnie, 1975; Stephens, 1977; Sternberg et al, 1986; Uzgiris & Hunt, 1975). Developmental approaches have their origin in Piagetian stages that are assumed to be predictable, hierarchical, and invariate (Piaget, 1929, 1952, 1954; Piaget & Inhelder, 1969). Developmental theory
holds that children sequentially pass through the same stages and that the individual
differences existing among children are limited to rate of development.
Developmental models lead toward typical modes of functioning that are considered
efficient and socially normalizing (e.g. walking for mobility, speaking for
communication).

Some aspects of developmental theory have logical appeal. For example, in order
to walk a person must use the prerequisites of head control, trunk control, and a
variety of balance and coordination skills in a synthesized manner. Emerging
research and analytical review has challenged the invariate nature of developmental
sequences while acknowledging that it is desirable for students to work toward
increasing specialization and sophistication of their behavior (Goetz & Gee, 1987;
Loria, 1980; Reichle & Keogh, 1986).

Predominant opinions in the field hold that developmental models have
perpetuated the use of nonfunctional and chronologically age-inappropriate
materials, activities, and interactions (Baumgart et al, 1982). Use of nonfunctional
and age-inappropriate curricula is unlikely to assist learners in achieving adult,
integrated, community-based outcomes (Brown, Nietupski, & Hamre-Nietupski,
1976; Falvey, 1986; York & Williams, 1977). At the same time, a study by Bates,
Morrow, Panscofar, and Sedlak (1984) indicated that nonfunctional and age-
inappropriate practices are likely to result in persons with severe handicaps being
perceived negatively by nonhandicapped persons. Some fear that a student's
educational achievement may be restricted if professionals choose not to instruct a
child based on the assumption that the learner's failure to progress is due to low
developmental levels or lack of readiness (Baumgart et al, 1982; Brown et al,
York and Williams (1977) suggest that atypical patterns of development in students with severe handicaps, sparsity of data in a variety of relevant curricular areas (i.e. community, leisure, domestic, vocational), variability in normal development, and inattention to functional alternatives (e.g. wheelchair for mobility), logically diminishes the desirability of normal developmental models for identifying curricular content, despite the absence of research on this topic.

Developmental information may be useful in instructional planning. For example, complexity of verbal directions, levels of abstraction on communication boards, reactivity of toys or games, and determination of appropriate adaptations are examples of potential instructional concerns where it could be helpful to know the person's developmental level.

Differences may arise since many allied health professionals such as occupational, physical, and speech/language therapists have been trained to use developmental models, while many teachers have been trained to use ecological approaches that are based on a logic that is contrary to developmental theory (Ottenbacher, 1982; Brown et al, 1979).

Remediation or Restoration of Identified Deficits

Remediation or restoration of identified deficits that impair performance in daily activities is a role that is shared across disciplines (Lansing & Carlsen, 1977; Larsen & Poplin, 1980; Sabari et al, 1983). Campbell (1987b) states that, "... occupational therapy, physical therapy, and speech/language pathology emphasize clinically based assessment and remediation procedures." For example, teaching someone who is nonverbal to speak, or nonambulatory to walk represent remediation
or restoration functions.

Few people would dispute the value of remediation if it can be obtained for an individual. Differences between group members may arise not from the appropriateness of remediation as a role, but rather perceived overemphasis of its use (Shannon, 1977). Some specialists continue to adhere to the notion that they must, "take them (students) and go fix them somewhere" (American Speech-Language-Hearing Association, 1985). Williams and Fox (1980) suggest that the focus should be shifted from an emphasis on remediating normal form (e.g. speech, walking), to exploring augmentations or alternatives as acceptable forms to achieve critical functions. Shifting from remediation to adaptation may represent a point of divergence in perspective between some therapists and educators. Additionally, Zigler & Weintraub (1980) fear that parents who place an overemphasis on remediating deficits may delay the use of appropriate alternatives or waste time, energy, money, and hope in unsubstantiated approaches (i.e. patterning) that claim restorative effects.

Development of Adaptations

Development of adaptations is a widely accepted role of related service professionals (American Occupational Therapy Association, 1983; American Physical Therapy Association, 1985; Campbell, 1987b; Sabari et al, 1983; Stone, 1977; York & Rainforth, 1987). Adaptation "... includes any device or agent that replaces or improves some personal function" (Stieler et al, 1977). Communication specialists can adapt by determining appropriate augmentations to speech such as direct-selection communication boards, manual gestures, eye- gaze
systems, and electronic devices. Occupational therapists may make adaptive
equipment such as hand splints, vocational jigs, and cooking and eating tools to assist
in activities of daily living. Physical therapists may design or select mobility
adaptations, positioning equipment, and orthotic devices to enhance functional
participation. York and Rainforth (1987) offer strategies for developing
individualized adaptations along with numerous examples. Adaptations are believed
to have limited value unless programs are developed to teach students how to use
adaptations in a socially acceptable manner (Stieler et al, 1977).

Adaptations are not limited to the use of specially designed equipment or
necessarily to full participation. Baumgart et al (1982) advanced the principle of
partial participation and individualized adaptations. She and her colleagues explained
that adaptations may extend beyond the utilization or creation of materials and
devices to include, (a) utilization of personal assistance, (b) adaptation of skill
sequences, (c) adaptation of rules, and (d) attitudinal adaptations. Partial
participation affirms the belief that persons with handicapping conditions should be
afforded access to chronologically age-appropriate environments and activities.
Baumgart et al (1982) believe that partial participation, (a) is more advantageous
than exclusion based on all or nothing mentality, (b) should be increased through
direct, systematic instruction, (c) should result in the student being perceived as a
more valuable and contributing member of society, and (d) should be ensured
through systematic, coordinated efforts initiated at a young age.

While providing adaptations is generally accepted as an important role,
disagreement regarding its application can emerge under certain circumstances. For
example, it has been suggested that certain adaptations can be stigmatizing, thus
drawing undue negative attention toward a person with a handicapping condition (Stieler et al., 1977). Group members may express different opinions regarding adaptations depending upon how they view an adaptation's impact on both function and the perceptions of others. Group members may also disagree about whether a student should be directed toward normal modes of functioning through remediative efforts or be provided with an adaptation.

Facilitation of Functional Skills and Activities

Facilitation of functional skills has long been considered a cornerstone for the education of persons with severe handicaps (Brown, Branston et al., 1979; Brown, Nietupski, & Hamre-Nietupski, 1976; Bates, Renzaglia, & Wehman, 1981; Goetz, Guess, & Stremel-Campbell, 1987; Horner, Meyer, & Fredericks, 1986; Williams, Brown, & Certo, 1975). In this context, functional skills refer to activities that have direct practical applications in integrated environments (i.e., home, work, school, and community). A defining condition of functionality is engaging in activities in natural contexts. For example, washing one's hands prior to preparing food is in context, whereas washing hands at 9:50 a.m. in the classroom because it is written on the teacher's schedule, is out of context. Examples of functional activities are making a purchase, playing a game, doing a job, washing dishes, carrying on a conversation with another person, or depositing money in the bank. There appears to be general consensus in the literature that facilitation of functional skills is an appropriate and desirable role for related service personnel (American Occupational Therapy Association, 1987; American Physical Therapy Association, 1985; American Speech and Hearing Association, 1984a; The Association for Persons with
Reciprocal Consultation with Colleagues

Nonspecified forms of consultation have been advocated by professional organizations as an appropriate role for related service specialists working in schools (American Occupational Therapy Association, 1983, 1987; American Physical Therapy Association, 1985, 1987; American Speech and Hearing Association, 1984a, 1985; The Association for Persons with Severe Handicaps, 1986). In its most basic form, consultation represents a three-person chain. Information of various sorts (i.e., techniques) are passed from the consultant, to the consultee, to the client, in this case a student (Frassinelli, Superior, & Meyer, 1980). Since service demands have outpaced the ability of therapists to meet student needs by direct service, consultation (indirect service) provides an effective mechanism to reach more children (Frassinelli, Superior, & Meyer, 1980). Consultation has also been promoted because it allows for provision of service in the natural environment. Frassinelli, Superior, & Meyer (1980) point out that, "By working outside the classroom, the speech-language pathologist will miss chances to elicit and reinforce target responses that occur naturally during the day" (p. 2). Consultation is also believed to serve a preventive function, offer increased flexibility, and more efficient use of time although no data were identified to substantiate these claims (Frassinelli, Superior, & Meyer, 1980; Rainforth & York, 1987; York et al, 1985).

Despite the widespread support for consultation, reportedly few related service or educational personnel have been prepared for consultation by University training programs (Rainforth, 1985; Rainforth & York, 1987; Sears, 1981; Geiger et al,
Since many professionals working in schools have not been grounded in consultative theory or techniques, it is crucial to monitor consultation to ensure appropriate service to students. Bricker (1976) points out the essential nature of making data-based evaluations of consultative services, "... because even the most expert consultant can make a mistake about a remediating procedure...". Recognition of the need for consultative service delivery has resulted in the emergence of consultation preparation at the preservice and inservice levels (Inge & Snell, 1985; Guess, Rues, & Westman, 1984; Thousand et al, 1986).

Conflicts may arise when group members hold varying and potentially contradictory expectations about consultative services, such as the type and directionality of consultation. Expert versus collaborative models represent opposite ends of the consultation spectrum (Conoley & Conoley, 1982; Gresham & Kendell, 1987; Harris & Schutz, 1986). Reciprocal consultation and training is most closely associated with transdisciplinary team models because role release requires mutual, ongoing exchange to provide appropriate indirect service (Hutchinson, 1978; Inge & Snell, 1985; Lyon & Lyon, 1980). Frassinelli, Superior, & Meyer (1980) suggest that the focus on indirect service may represent a major barrier in implementing consultation as role because many therapists have an ingrained disposition toward direct therapy. An additional barrier may be present since some therapists initially may be more satisfied and expert in working with children than consulting with teachers and therefore may not embrace the notion of changing to indirect service delivery models (Magrun & Tigges, 1982). In some group models consultation may be unidirectional, with related service specialists serving as consultants exclusively while parents and teachers exclusively function...
as consultees. Within transdisciplinary models, unidirectional, expert consultation would be viewed as a detraction from the development of teamwork since its unidirectional aspect suggests an unequal valuing of input from group members.

Removal of Barriers to Participation in Frequented Environments

The American Physical Therapy Association (1985) guidelines for the practice of therapy in educational environments states that therapists should, "... modify the educational environment so that exceptional students may benefit from their educational placement" (p. 37). Similarly, the "Principles of Occupational Therapy Ethics" (American Occupational Therapy Association, 1984) states, "Occupational therapists do not only provide direct service to alleviate specific problems with clients, programs, or a community, but in addition, include education of all phases of service which can be provided to the public. This should include education of situations and conditions for which the competency of occupational therapists is recognized to assist in alleviating barriers limiting a person's ability to function socially, emotionally, cognitively, or physically." (p. 801).

"Stieler and colleagues (1977) state that, "Therapists working with the multihandicapped need to take a strong stance in advocating environmental modifications which will avoid the necessity for artificial appliances" (p. 177). A number of barriers to participation in educational environments exist. In part, these include, (a) student skill deficits, (b) attitudinal barriers, (c) environmental barriers, and (d) logistical or organizational barriers. Professionals often focus on student skill deficits based on the notion that these are the primary barriers to participation. This logic assumes that if students learn skills they will no longer
face barriers to participation. While skill deficits may contribute to restricted access, often it is one of multiple barriers.

Potentially, specialists could address environmental barriers by doing an accessibility survey of the physical school plant or other frequented environments and making recommendations for modifications (Orelove & Hanley, 1979). Related service specialists could instruct peers and adults in equipment use such as safe operation of a person's wheelchair. A speech therapist could assist in breaking down communication barriers by teaching nonhandicapped students about a particular student's communication system, or by working with regular education staff in attempt to broaden there perspectives regarding the inclusion of students with handicaps in regular education settings. This framework for viewing removal of barriers to participation seems to be supported in the Code of Federal Regulations (1987, July) which describes one role of related service provision as "Mobilizing school and community resources to enable the child to receive maximum benefit from his or her educational program" (§ 300.13, 11, iv). While most professionals would probably acknowledge the importance of pursuing these and other aspects of barrier removal, current service delivery models that include primarily direct service sessions, accompanied with large itinerant caseloads, offer insufficient time for related service personnel to pursue this role (American Speech and Hearing Association, 1985; Peterson, 1980; Sears, 1981).

Resource and Support to Families

Parent involvement and supports are recognized as important aspects of the
educational program (Benson & Turnbull, 1986; Carney, 1987; Epstein, 1988; Larsen and Poplin, 1980). Mitchell (1977) believes the ideal group of professionals takes the view that the "Family is an integral part of the total system of special education" (p.15). Professionals who adhere to this approach seek to develop effective working relationships with families and to facilitate the development of satisfying parent-child interactions that will positively affect family relationships and the child's progress (Anderson & Hinojosa, 1984). Mitchell (1977) goes on to suggest that professionals often have only a vague appreciation that parents play an important role, while others view parents in a negative light. Anderson and Hinojosa (1984) substantiate this point by saying that, "health professionals have frequently neglected or avoided parents and their needs." (p. 460). Interactions between professionals and families may represent a mismatch of needs (Rainforth & Salisbury, 1988).

Home-school collaboration and family support is generally considered an indicator of quality service delivery (Benson & Turnbull, 1986; Meyer, 1987; The National Regional Resource Panel on Indicators of Effectiveness in Special Education, 1986). Less publicized opinions view support to families by professionals with skepticism. At an interdisciplinary seminar on the health, education, and welfare of children, Mitchell (1977) stated, "... I fear that the quantitative and qualitative increase in services for the handicapped child creates the real risk of parents of handicapped children abdicating their responsibilities. There is a dangerous trend for parents to place their trust in the professional, and, correspondingly, for the professional to perceive himself or herself as having extraordinary, exclusive skills... ; ... this will place barriers between those whose skills should be combined in the interests of children" (p.14). Differences among group members may
surface based on how they view the home-school relationship and the desirability of professional involvement with families.

**Liaison with the Medical Community**

Establishing and maintaining liaisons with physicians has been necessitated because in some states, occupational and physical therapy services can only be provided in school given a physician's prescription (American Physical Therapy Association, 1985; Campbell, 1987b; Martin, 1988). Some students with severe physical handicaps attend regional outpatient clinics for orthopedic follow-up. Conditions or needs identified at such clinics or by private doctors such as dislocated hips, post surgical protocols, or management of specialized equipment like body jackets to control scoliosis, require information exchange between the medical personnel and school staff. Parents often provide this liaison, but at times the information also needs to communicated directly with school staff given a release of information from parents. The lack of emphasis on this role in the literature may suggest that while it is necessary, both logically and officially, it may be a minor role compared to others discussed in this chapter.

**Student Advocacy**

Codes of ethics and standards of practice in human service professions contain directly stated or implicit directives that professionals are responsible to advocate for services that are in the best interest of the persons they are serving (American Occupational Therapy Association, 1984; American Physical Therapy Association, 1987; American Speech-Language-Hearing Association, 1984). For example, the
American Occupational Therapy Association (1984) states, "Under no circumstances should the occupational therapist remain silent when a client, student, or facility's status is in jeopardy." (p. 801). While the concept is simple, the application of advocacy is interwoven in every potential role that professionals serve (Anderson & Hinojosa, 1984; Gaylord-Ross & Holvoet, 1985; Gilfoyle & Hays, 1979). Emphasis on student advocacy by related service providers has received minimal attention in the professional literature. It is speculated advocacy is seen primarily as a parental responsibility, or that of outside advocates.

Criteria Used to Make Related Service Decisions

Presumably, individuals or groups do not make decisions about the provision of related services in random or arbitrary ways. It is believed, although not verified, that group members employ various subjective and/or objective criteria to assist in the decision-making process. It can be argued that the use of decision-making criteria are closely associated with value positions as well as role perceptions. Few models are available to assist groups in making related service decisions, and those that do exist reflect specific value and role orientations. Nonvalidated formulas have been established to rate children as "priorities" for service based on preconceived biases (Effgen, 1984). For example, Effgen's (1984) rating scale for determining school therapy caseload needs is, "... intentionally biased towards the younger, less handicapped child." (p. 16). The Kansas Chapter of the American Physical Therapy Association (1981) also suggests a formula, but qualifies its use by stating that it is not intended as a tool for determining whether a child is eligible for therapy, but
simply as a method of establishing caseloads so that students with varying intensity of need for service are weighted differently when distributing students across caseloads (p. 48).

The American Occupational Therapy Association (1987) has distributed guidelines for setting therapeutic priorities in schools. In the introduction to their suggested rating procedures, the reader is reminded that optimum service delivery in schools requires that all possible resources be available. It is suggested that the reality of not having optimal situations requires professionals to creatively design efficient mechanisms to assure access to a free appropriate public education (p. 9-1). The method of priority setting presented is predicated on a "person-environment fit" that accounts for, "(a) the student's performance, (b) the specific educational environment, and (c) characteristics of adults in the student's educational environment" (p. 9-2). Through the careful examination of 10 parameters, the therapist is encouraged to, "shift the focus away from the student's handicapping condition and toward the student's ability to function within the educational environment" (p. 9-2). These 10 parameters include: (a) health and safety; (b) need for external communication; (c) need for environmental modification; (d) role of sensory, perceptual, and motor functions in the student's educational performance; (e) potential for functional improvement; (f) chronological age; (g) expertise of other persons in the student's environment to assist in the educational process; (h) availability of other persons in the student's environment to assist in the educational process; (i) level of interference of the handicapping condition; (j) availability of space, time, and equipment in the school. The AOTA Guidelines (1987) discusses each of these parameters in greater detail.

Once students have undergone screenings and/or evaluations, decisions regarding
eligibility for service are based, at least in part, on the "clinical judgment" of a registered therapist (American Occupational Therapy Association, 1987; Kansas Chapter American Physical Therapy Association, 1981). The few models for related service decision-making that do exist have focused on decision-making within a single discipline. Descriptive, experimental, and social validation data regarding related service decision-making models that examine the interrelationships among educationally supportive services are completely absent from the professional literature. This absence offers a compelling rationale for the development of cross-disciplinary models, given the fact that decisions are made routinely based on the "clinical" judgment of specialists in isolation from other specialists, educational staff, and families. Similarly to the other topics discussed in this review, decision criteria are almost exclusively applied to practice based on opinion, not evidence.

Biklen (1988) questioned whether decisions made by professionals regarding people with disabilities are truly based on an exercise of clinical judgment. He suggested that influences such as economic factors, service traditions, societal prejudice, and politics have relegated clinical-decision making to "little more than mythology." Certo (1983) suggested that related service delivery has been based on the needs and convenience of staff or administrators, rather than students needs based on sound decision-making models.

Seven criteria were identified that have reportedly been used in related services decision-making on behalf of students with handicapping conditions. These criteria will be discussed in terms of: (a) their current use in decision-making, (b) their relationship to the roles and functions discussed in the previous section, and (c) their points of potential agreement and disagreement among professionals and
consumers.

**Chronological Age**

Chronological age is a factor frequently perceived as an important decision-making criterion. In Effgen's (1984) model for determining school therapy caseloads, a simple formula was employed whereby students were given points for having certain attributes, while points were subtracted for characteristics deemed less or undesirable. In this model, the higher the student's point total, the higher priority they were for receiving therapy as a related service. Effgen identified the "youngest of the served population" as one of four factors that indicated students who were the highest priority for receiving related services. Effgen's (1984) model seems to internally validate its young age bias by later stating, "older children who have plateaued either developmentally or functionally" are a low priority (p.16).

The American Physical Therapy Association (1985) cited the importance of age, but exclusively for purposes of early identification; this is consistent with the early identification mandate of P. L. 94-142 (1975) and the Code of Federal Regulations (1987, July). The American Physical Therapy Association (1985) did not suggest that older students were lower priorities. Ethical standards set forth by the American Occupational Therapy Association (1984) consider it misconduct if an occupational therapist condones practices that result in unjustifiable discrimination on the basis of age and several other personal characteristics of service recipients (p. 802).

The emphasis on early therapeutic intervention is, in part, based on the suspected plasticity of the central nervous system during early childhood that allows
for potential remediation (Bobath, 1967; Bobath & Bobath, 1975, 1984; Eccles, 1972). While support for early therapeutic intervention is popular, there is a lack of conclusive documentation on the effects of early therapeutic intervention (Simeonsson, Cooper, & Scheiner, 1982). Simeonsson, Cooper, and Scheiner's (1982) critical review of 27 early intervention studies indicated that most of the studies failed to meet common standards for scientific research. Parrette and Hourcade's (1984) analysis of 18 studies using occupational and physical therapy to treat young children with cerebral palsy, indicated that as "... research paradigms become more rigorous, support for early therapeutic intervention effectiveness decreased." (p. 462).

An opposing opinion suggests that persons with severe handicaps may appropriately require supportive services throughout their life span Certo (1983). While this opinion is value-based rather than empirically-based, it appears to have a logical foundation. For example, if a student with a life-long condition, such as cerebral palsy, requires therapeutic input to avoid debilitating joint contractures, that need is likely to persist throughout a lifetime, not just early in the school years.

It is speculated that the reliance upon age as a criterion for service provision may support Shannon's (1977) hypothesis that an over emphasis has been placed on remediative or restorative roles since the greatest possibilities for restoration are considered to be present during early childhood. Age appears to be irrelevant to roles such as adaptation, support to families, removal of barriers to participation, consultation, and facilitation of functional skills. In fact, as a person ages, the importance of these roles may become increasingly prominent as a person's needs change. This may be especially true during major life transitions such as when
changing schools, beginning a new job, moving into a new home, or relocating to a new community (American Occupational Therapy Association, 1987). Age as a criterion represents a potential conflict among team members when they disagree about its importance or application in the decision-making process.

**History and Prognosis for Remediation**

A child's history and prognosis for improvement has been identified as a criteria for delivering and discharging students from related therapy services (American Occupational Therapy Association, 1983; American Physical Therapy Association, 1985). While the American Occupational and Physical Therapy Associations mention prognosis, they do not explicitly define its relationship to service delivery.

Effgen's (1984) decision model supports the bias that a student with a favorable history and prognosis for remediation is viewed as higher priority for receiving related services, while those whose prognosis is deemed poor are viewed as lower priorities. Use of history and prognosis for remediation as a decision-making criteria is primarily tied to the roles of remediation and promoting normal developmental sequences. The American Occupational Therapy Association (1984) states that it is, "... incumbent upon occupational therapists to recommend termination of services when established goals have been met, or further services would not produce improved performance" (p. 799). While this guideline alone does not suggest that the goals referred to in the statement must be remediative or restorative in nature, if those are the types of goals therapists are writing, it is conceivable that students could be terminated from service without the consideration of other roles and functions served by therapists that do not rely on history and prognosis for remediation.
Group members who rely exclusively or heavily upon the prognosis for remediation criterion may face conflicts with members who embrace a more expanded view of the roles of service providers, such as adaptation, support to families, removal of barriers to participation, and facilitation of functional skills. Sternat et al (1977) point out the potential inequities related to heavy reliance on prognosis for remediation as a criterion in service delivery if limited student progress leads to reduction of service in favor of those who have "more potential" (p. 264). Shannon (1977) suggested that this phenomenon of overreliance on prognosis for remediation emerged from medicine's reductionist orientations to problem definition and solution. Medicine's focus on acute care, not the chronicity of need represented by persons with severe handicaps, has filtered down to allied health fields. He suggested that the rehabilitation movement became a "dumping ground" for medicine's castoffs. Shannon (1977) suggested that persons with severe, chronic handicaps may pose the greatest challenge and threat to medical professionals because they are the least likely to be "fixed". The potential for disagreement among group members is present since there are different positions regarding the appropriateness and application of history and prognosis for remediation as a criteria.

**Level of Intelligence**

Level of intelligence is a criterion that is used for making decisions, sometimes purposefully, sometimes unconsciously. While documentation was not identified, the writer speculates that societal biases against persons with increasingly severe levels of mental retardation is also reflected in related service decision-making.
Level of intelligence as a criterion may be operationalized in subtle or indirect ways. For example, in Effgen's decision rating scale (1984), students received negative points if they were "unable or unwilling to follow directions or attempt treatment activities" (p. 17). Such an indirect application of intelligence increases the likelihood that persons with the most severe levels of mental retardation and other severe handicapping conditions would have points subtracted from their total, and therefore be deemed a lower priority of related service provision.

In some cases, cognitive levels are systematically applied to related service decision-making. For example, communication specialists frequently are called upon to develop alternative or augmentative communication systems to assist students with severe handicaps. Some respected experts in the communication field have published decision models that base the implementation of communication intervention, in part, on level of cognition. Chapman and Miller (1980) suggest that learners must function at Piaget's Stage 6 (intentional behavior) of the sensorimotor period and Shane (1980) suggests Stage 5 (means/ends), in order for the student to benefit from augmentative communication training. The availability of such opinions may lead communication specialists and others to refrain from augmentative communication intervention based on a student's perceived level of intelligence. Reichle and Keogh (1986) present arguments that such cognitive prerequisites need not deter communication training efforts. While controversy regarding the role of cognition in communication development continues, the relevant point related to this study is that some communication specialists have been trained to use cognitive level as a criterion for making service delivery decisions.
As with the previously mentioned criteria (age and prognosis for remediation), intelligence is an irrelevant factor when referenced to the vast majority of roles potentially served by therapists in school settings. Conflicts that may arise between group members regarding the use of intelligence as a criterion may be more emotionally charged than some other criteria. This may occur because a bias toward higher intelligence may be perceived by some as devaluing the worth of persons with increasingly severe levels of mental retardation, or as an excuse to avoid working with a population that presents immense challenges to our instructional technology. Either scenario may evoke negative reactions from those who advocate on behalf of persons with severe mental retardation.

Severity of Impairment

Severity of impairment refers not only to level of perceived level of intelligence, but also may include of characteristics of the student considered to interfere with learning such as sensory, physical, behavioral, or multiple disabilities. There appear to be three basic ways to view the criterion of "severity of impairment". Some people believe that the more severe the nature of a person's disability, the more important it is for related services to be provided. This perspective is based on the notion that more severe handicapping conditions necessarily present more complex challenges that require the input of specialists (Noie, 1982; Peterson, 1980), whereas challenges presented by students with more mild handicapping conditions can often be managed without the involvement of specialists like occupational, physical, and speech/language therapists (Noie, 1982). Noie (1982) qualifies this opinion by stating, "... however, there are some severely handicapped
children who may require no therapy services." (p. 105).

Conversely, other group members may advocate an opposite approach whereby students with severe handicaps are considered the lowest priority and those with mild handicaps are the highest priority (Effgen, 1984). A third potential opinion is that severity of impairment is not relevant and that students at any range along the severity of disability continuum may be equally appropriate to receive related services, as long as the service is required in order for the student to benefit from special education.

In reference to providing full educational opportunities to all children with handicapping conditions, P. L. 94-142 (1975) explicitly identified two ranked priorities, "... first with respect to handicapped children who are not receiving an education and second with respect to handicapped children, within each disability, with the most severe handicaps who are receiving an inadequate education" (Sect 614, 1C, ii). The New York State Education Department's (1981) guidelines for occupational and physical therapy in schools seems to verify this position, by stating the first priority students to receive occupational and physical therapy are those with orthopedic impairments or multiple handicaps. Conflicts may arise when group members vary on the application of the criterion, "severity of impairment". Differences may polarize teams, especially when one faction of a team advocates greater priority of service provision for students with the most mild handicaps, while another faction advocates for those with the most severe handicaps.

**Benefit to a Student's Educational Program**

Of all of the criteria discussed in this review, related service support to the educational programs of students with handicapping conditions is the only criterion
explicitly identified in P.L. 94-142. The law states that related services are provided, "... as may be required to benefit from special education". The American Physical Therapy Association (1985) supports the educational focus in decision-making by giving priority to, "... children whose school performance depends extensively on therapeutic intervention..." (p.40). The APTA (1985) goes on to state that therapists should, "... make recommendations for increasing a child's ability to participate in educational activities" (p. 37). Currently, decision models that use the educational program as the primary or exclusive criterion for decision-making are rare and none have been documented in widely available professional literature. Based on the consistency of literature on the topic of related services (discussed earlier in this chapter), it appears that there is general agreement in the field that related services, by definition, must consider their relationship to the educational program.

Parental Involvement

When deciding whether, or how extensively, to provide related services to students, should groups consider parent involvement? In Effgen's (1984) decision model, she goes as far as to subtract points in her priority rating formula if there is, "Little or no family support and/or follow-up" or if the, "parent does not attend staffings and/or conferences" (p. 17). Such criteria are apparently based on the notion that without parental involvement, the impact of therapy will be so dramatically reduced that it would not be worthwhile to offer it. There may be many potential reasons for parental nonattendance at school conferences such as transportation barriers, work schedules, other child rearing responsibilities, fear
or dislike of school meetings, lack of response to written invitations to meetings due to illiteracy, and a host of other possibilities. Judging a parent's intent based on behavioral referents that could have many alternative explanations presents numerous opportunities for misinterpretation and subsequent damage to home-school collaboration.

Family specialists are increasingly acknowledging the interrelatedness of family activities that require individualization, therefore it has been suggested that the types and intensity of parental involvement be matched to specific needs of individual families (Benson & Turnbull, 1986). Differences may exist or develop among group members if they adhere to contradictory perspectives regarding the use of "parental involvement" as a criterion for making related service decisions.

Overlap and Access to Other Services

When decisions regarding therapeutic services are made in isolation of each other, based on the professional biases of each group, it is unlikely that the resultant recommendations for service delivery will deploy services efficiently or in a coordinated manner. Occupational therapists are often responsible for feeding programs, but so are speech pathologists. Teachers may be responsible for teaching recreation and social skills, but so are therapists and parents. The overlapping areas of "ownership" are extensive. Inattention to areas of overlap can either result in gaps in needed services or duplication of services. The presence of overlap of services was, in part, the basis for the Supreme Court's decision not to provide Amy Rowley with a sign-language interpreter because the services she needed were already being provided by the classroom teacher (Board of Education v. Rowley, ...
In the American Occupational Therapy Association's (1987) guidelines, the issue of overlap is considered by examining the type of help that is available in the student's school setting. The general theme of the AOTA description is that therapists should provide what is needed, but not more than is needed. This approach is consistent with what Biklen (1986) referred to as "only as special as necessary". This approach acknowledges the importance of certain supportive services as well as the inherent detriments in providing more than is necessary. For example, providing more than is needed can have negative impacts on other students who need services. Additionally, receiving more service than needed can be detrimental to students by creating unnecessary dependencies, and potentially reducing time available for other school activities such as academic work, learning functional skills, and integration with nonhandicapped peers.

Determination of service overlap can facilitate teamwork and group decision-making by assisting in the clarification of roles and responsibilities. In transdisciplinary models, overlap may lead to role release and consultative relationships. Conversely, in multidisciplinary and interdisciplinary models, each discipline is more likely to pursue their separate agendas despite overlap with others. Differences interfering with teamwork may arise when group members disagree regarding the application and territorial boundaries of overlapping services.

Related Service Decision Authority Perceptions

Regardless of what roles or criteria are used in decision-making, someone or
some group must actually make the decisions. Who should have control over such decisions represents a source of potential conflict among group members. There are two basic approaches to decision authority that are manifested in a multitude of variations. The first approach is one where professionals from particular disciplines retain authority about decisions relating to their discipline. This view is based on the notion that specialists have expertise in their field and that others are not qualified to make such decisions. Such an approach relegates team meetings to acts of informing each other what has already been decided in isolation. In an observational study of IEP meetings, it was noted that participation by some group members was perfunctory, yet reported levels of satisfaction with the process were high (Goldstein, Strickland, Turnbull, and Curry, 1980). While the small sample size and the potentially unrepresentative nature of the sample, limits the conclusions that can be drawn from this data, the investigators hypothesized that responsibilities within the group were not clearly defined.

Professionals also argue for maintaining control because they charge that some parents fail to follow through on home programs. Rainforth and Salisbury (1988) believe that home follow through often suffers because parents have frequently been excluded from the decision-making and program design process. When parents are not included they may conclude that the professionals do not consider them to be their equal, and do not believe that parents can make valuable contributions to the team (Foster, Berger, & McLean, 1981). Unequal valuing of input from members based, in part, on differences in perceived status represents a likely source of group conflict and subsequent dysfunction (O'Connor, 1976).

An alternative view of decision-making is that consensus should be reached among professionals and consumers based on input from specialists and the
interrelationship between recommendations (Pfeiffer, 1982). This approach relies on democratic principles of decision-making (Kane, 1975b). Mitchell (1977) asserts the importance and logic of including parents as team members by stating, "... within the total system, the parents should have full and meaningful opportunities to take part in the decision-making process... ; ... the family is the primary socialization agent, therefore to ignore it or work in competition with it can only dilute or subvert the worth of the special education provided in schools" (p. 16). When staff recognize the potential contributions made by parents, parent participation in decision-making can be significantly increased (Brinckerhoff & Vincent, 1986).

Early in the development of P. L. 94-142, the importance of shared decision-making and procedural due process were recognized as crucial to effective service delivery. In a document prepared by the Center for the Study of Families and Children at Vanderbilt University (Futures of Children, 1975), they recommended that, "All federal, state, and community programs that provide funds for services to exceptional children should require that parents (and whenever appropriate, young people themselves) have an effective voice in the design, conduct, and evaluation of the program. Professional and voluntary organizations concerned with exceptional children should make the empowerment of parents a high-priority objective of their program" (p. 30). Conflicts can arise when group members vary in their perceptions about who should make decisions. Searching for a balance between consumer empowerment and professional authority continues to plague group decision-making, and consequently the quality of educational and related services provided to students with handicapping conditions.
Summary of Literature Review

Adequacy of Research

Review of the literature regarding related service decision-making presents a variety of themes that seem to summarize the state-of-the-art. One of the most striking aspects of the literature review was the absence of research on related services for students with severe handicaps. Presumably, students with the most severe and complex challenges would require the greatest diversity and intensity of related service, yet literature related to this topic is dominated by unsubstantiated opinion. The internal validity of cited studies varied widely, ranging from tightly controlled single-subject experiments to coded observations that maintained none of the rigors and controls required of sound qualitative research (Bogdan & Biklen, 1982). If one assumes that the internal validity of the cited studies was adequate in most cases, the problem of external validity remains a serious concern. Given the small numbers of subjects involved in most of the studies and the micro nature of the dependent variables examined, it would be premature to make broad statements with great confidence regarding the generalizability of findings to the field.

While concern regarding internal and external validity of findings is of concern to researchers, the writer speculates that many of the cited studies have been favorably accepted by practitioners because, in large part, they seem to embody intuitive logic. In essence, several of the researchers have attempted to validate common sense notions, such as: (a) if professionals from different disciplines are encouraged and trained together in group process strategies, it will enhance their
interactions (Prasse & Fafard, 1982); (b) if students with motor impairments are positioned to maximize their motor control, they will be more successful at participating in functional tasks such as communication board use (McEwen & Karlan, 1987); or (c) if school staff are trained to combine caretaking and instruction, learner time will be used more efficiently (McCormick, Cooper, & Goldman, 1979). Research that validates common sense ideas is valuable and can provide the impetus to continue guiding practice in a positive direction.

Simultaneously, research that attempts to validate seemingly logical ideas may pose dangers if it fails to strive toward objectivity and leads us to continue practices that seem logical but actually are not. For example, some people may be convinced on logical or intuitive grounds that the more direct, individual therapy a student receives, the more the student will benefit. This logic has, in part, directed our practice and the burgeoning of related services in the schools. Yet, preliminary studies have presented data challenging the more-is-better thinking as a false logic, by suggesting that at least under certain circumstances, less frequent direct services or carefully planned indirect services, can be equal or superior to direct service (Giangreco, 1986b; Miedaner & Renander, 1987; Sommerfeld, Fraser, Hensinger, & Beresford, 1981). The need for more extensive descriptive and experimental research should be assistive in helping professionals and consumers better understand the phenomena that encompass related services and investigate hypotheses in ways that are more convincing than untested opinions.

**Organizational Themes**

The interpretation of related services has been dominated by legislation, regulation, and litigation. Our understanding of what a related service is, and what
it was intended to be, continues to formed in the courts. Given this litigative history and the highly litigious nature of American society, it seems likely that the spiral of cases will continue. The fact that related services are explained and interpreted legally, reminds us that the issues of related service provision extend beyond educational and therapeutic traditions into the macrocosm of societal values and politics.

The groups responsible to work as teams on behalf of students with handicapping conditions have also been studied to a minimal extent, particularly those groups responsible for the education of students with severe handicaps. One of the most prominent deficiencies in the research related to understanding group decision-making for students with severe handicaps has been the minimal study of parents and related service professionals, most notably occupational, physical, and speech/language therapists. These three constituencies represent highly significant and diverse members of the educational team. To date, what we think about how teams operate is far more extensive than what we know about the topic.

Service delivery practices are similarly dominated by opinion and tradition rather than research. One of the interesting ironies of research is how it may be employed to impede change while diverting attention from the status quo. For example, it has been argued that the absence of a body of empirical research supporting transdisciplinary approaches has limited its adoption in schools (Geiger, Bradley, Rock, & Croce, 1986). Simultaneously, there is little evidence that practitioners or researchers are concerned by the fact that there current modes of related service delivery are similarly unvalidated. The basic service delivery question remains unanswered. In what ways can we provide supportive services to
students that will assist their participation and achievement in school while minimizing potentially negative effects of specialized services?

Decision-Making Themes

The consistency of overlap among the regulations, guidelines of national organizations, and the professional literature, suggests relatively high levels of agreement regarding the roles of related service providers. Little data exists, even in the form of social validation, to verify that the expert opinions espoused in the literature are congruent with those of practitioners and consumers.

The absence of decision models to assist professionals and consumers was a dominant theme in the literature, and somewhat surprising, given the high frequency that related service decisions are made by adults on behalf of students with severe handicaps. It would appear from the literature that divergent opinions are present regarding criteria employed in related service decision-making. This area of practice is even less researched than roles, and seems to be controlled in large part by the professional socialization received by educators and specialists.

The subtopical area of this review that yielded the least amount of opinion and no data, is the one that is possibly the most controversial and territorial, namely, who shall retain authority over related service decision-making. The nonexistence of literature on this topic may represent what Argyris (1985) calls an "undiscussible", in other words, a known issue that people avoid talking about.

Authority represents a potentially serious source of conflict among professionals and consumers. It represents the "bottom line" in terms of power and control. Like litigation, authority practices remind us that whether we adhere to democratic
decision-making or defer to expert control, authority practices are political behaviors.

This summary of the literature has focused on themes related to the absence and potential inadequacies of research. While it is suggested that research can play a vital role as a tool to assist humans in discovering, understanding, and validating phenomena, the emphasis regarding its importance must be placed in perspective. It is recommended that research be applied in concert with values and logic within the sociological framework to form a foundation to better understand events that translate into improved educational practices. Clearly, the current level of research on related service decision-making precludes meaningful synthesis with our more highly elaborated values and logic on the topic. Therefore, all types of quantitative and qualitative research should be helpful in advancing and maintaining quality services for students with severe handicaps.

Contribution to the Field

This study will contribute to the field by offering a variety of data that is currently unavailable regarding how parents and professionals who work with students with severe handicaps perceive the roles, criteria, and authority aspects of making related service decisions. Unlike available descriptive data, it includes the perceptions of families and professionals on the same variables and measures. In doing so, it allows for comparisons that may be helpful in locating sources of agreement and disagreement among the primary team members responsible for the planning and implementation of services to students with severe handicaps. While it
is valuable to know how professionals representing individual disciplines perceive themselves, collaboration among disciplines will require knowledge of how different groups perceive the same phenomena. By exploring the variables contained in this study across disciplinary boundaries, avenues may be identified for future transdisciplinary research efforts that will be needed to address the complex issues facing the field (Sobsey & Orelove, 1983).
CHAPTER 3

METHOD

A survey distributed by mail was used to identify potential differences and similarities regarding related service roles, decision-making criteria, and decision authority perceptions of the primary constituency groups responsible for the education of students with severe handicaps.

Research Procedures

Subjects

Subjects included parents, special education teachers, occupational therapists, physical therapists, and communication specialists. Parents included in the study met four conditions. Parent subjects had at least one school-aged child identified as "severely handicapped" (Brown et al, 1983). In part, this definition described students with severe handicaps as functioning intellectually within the lowest 1% of a particular age (see Appendix A, Definition of Terms, for the exact wording provided to subjects). Parents were 21 years of age or older. Their children attended integrated schools. For the purpose of this study, the phrase "integrated school" is descriptive of educational programs where students with severe handicaps receive their education in regular classes and/or self-contained special classes in schools predominantly attended by nonhandicapped students. Finally, identified children of parent subjects received at least two of the three related services addressed in the
study (occupational therapy, physical therapy, and speech/language therapy).

Professional subjects, including special education teachers, occupational therapists, physical therapists, and communication specialists, met three conditions. Professionals worked with students identified as having a severe handicaps (Brown et al, 1983) full-time, or part-time in the case of itinerant therapists. Secondly, professional subjects worked in integrated public schools attended by nonhandicapped students. Finally, professionals were duly certified in their area of specialty and had earned a minimum of a bachelor's degree in their respective field. Therefore, registered occupational and physical therapists were included in the study while paraprofessionals such as certified occupational therapy assistants (COTA) were excluded. Certified special education teachers were included while teacher aides and assistants were excluded. The term communication specialist was used to include master's degree level speech/language pathologists, as well as bachelor degree level speech clinicians, and teachers of students with speech and hearing handicaps.

Surveying parents and professionals who were all involved with students with severe handicaps insured that subsequent data analysis compared groups that each had knowledge of students with severe handicaps. Subjects were limited to parents and professionals associated with integrated public schools for two reasons. First, inclusion of subjects from both integrated and segregated schools would have involved an additional, potentially major, independent variable based upon discussions in the literature of potential differences in the delivery of related services by setting. Secondly, the choice was made to collect data from those persons associated with integrated schools since it is currently considered a "most promising practice" in terms of educational placement for students with severe handicaps (Fox et al, 1987;
Meyer, Eichinger, and Park-Lee, 1987). These rationales were employed to increase the likelihood that the study's findings would have relevance to recommended educational programs now and in the immediate future.

Design

A voluntary sample of subjects was surveyed using a questionnaire distributed through the mail (Borg & Gall, 1983). State Education Department's in two states located in the northeastern quarter of the country assisted in identifying potential study subjects by providing lists of integrated school systems and educational cooperatives in rural, urban, and suburban locations in their respective states. Directors of Special Education for twenty-four school systems or educational cooperatives in the two states were contacted by phone to determine their willingness to distribute the questionnaire to the designated persons associated with their schools. Twenty of those organizations agreed to participate. The nature and procedures of the study were explained to the Director of Special Education or a designee over the phone by the investigator. Participating organizations received Board of Education approval and submitted a written letter of participation and access to subjects. These letters were placed on file with the Syracuse University Institutional Review Board for the Protection of Human Subjects.

Parents and professionals from six urban school districts were included in the study. Community population sizes in these school districts ranged from approximately 35,000 to over 1,600,000. Four of the six urban communities had general populations in excess of 100,000. Parents and professionals from fourteen educational cooperatives representing 249 individual school districts were also
sampled. The Directors of Special Education from these organizations characterized their communities as suburban and/or rural. The educational cooperatives participating in the study operated integrated school programs exclusively or primarily. In systems that operated both integrated and segregated (center-based) programs, local liaisons were asked verbally and in writing to distribute surveys only in integrated schools. Since some of the organizations operated both integrated and segregated models of service delivery, question 1.02 of the survey instrument (see Appendix B) was included to verify that respondents were involved in integrated schools. Surveys were excluded from data analysis if they were returned by individuals who indicated that they were involved in "Center-based schools serving children with handicaps only (including separate sections of schools such as a wing at an Occupational Education Center)".

Instrumentation

A survey questionnaire (see Appendix B) was developed using a four phased procedure including: (a) literature review; (b) interviews with practitioners and parents; (c) interviews with national experts; and (d) pilot-testing. The literature review included sources representing each of the respondent groups (special education, occupational therapy, physical therapy, speech and language therapy, and families) and drew upon identified roles, criteria, and authority issues common to all groups. Based on this review of the literature, semi-structured interviews were conducted with seven individuals representing each of the respondent groups (special education, occupational therapy, physical therapy, speech and language therapy, and families) for a total of 35 interviews. These individuals were selected based on: (a) their status as parents, special education teachers, occupational
therapists, physical therapists, or communication specialists; (b) their current or previous involvement with students with severe handicaps; and (c) their availability within the local calling area of the writer. All persons who were contacted agreed to be interviewed. These interviews included five major components: (a) background information, (b) perceived roles of related service providers working with students with severe handicaps, (c) criteria used to make decisions about the delivery of related services to students with severe handicaps, (d) authority perceptions regarding related service delivery for students with severe handicaps, and (e) open comments related to the topic of related services decision-making for students with severe handicaps.

Subsequently, 10 semi-structured phone interviews were conducted with two individuals from each respondent group who were considered national experts in their field. These individuals were selected based on: (a) their status as parents or family specialists, special education teacher trainers, occupational therapists, physical therapists, or communication specialists; (b) their history of involvement with students with severe handicaps; and (c) their contributions to the professional literature as well as their national presentations on topics related to this study. All persons contacted agreed to be interviewed. These interviews followed the same format used for professionals and parents in the field.

Input gathered from these 45 interviews was used to construct and field-test versions of the survey questionnaire with a convenient sample of 20 persons from the respondent groups. These individuals were selected based on: (a) their status as parents, special education teachers, occupational therapists, physical therapists, or communication specialists; (b) their current or previous involvement with students
with severe handicaps; and (c) their close geographic location to the writer to allow for face-to-face feedback on the early versions of the questionnaire.

The finalized questionnaire distributed to subjects (Appendix B) included the following sections: (a) background information (discrete choice and ranking); (b) related service role perceptions (Likert style scale 1 to 10); (c) decision-making criteria (Likert style scale 1 to 10); (d) decision authority (Likert style scale 1 to 10); and (e) comments (open narrative). The Likert style scale was purposely designed on a scale of 1 through 10 to avoid a midpoint. On the scale, "1" was anchored with the phrase "Strongly Disagree" while "10" was anchored with the phrase "Strongly Agree". Scores of 1 to 5 represented varying levels of disagreement, while scores 6 to 10 indicated increasing levels of agreement.

**Data Collection Method**

Data were collected using the following procedures: (a) Sampling sites were identified as described previously. (b) Initial phone contacts were made to school district officials, followed by the investigator sending a letter of verification and request for number estimates (See Appendix C and Appendix D). (c) School officials provided number estimates of persons matching the subject qualifications in each constituency group. This information was used to determine how many surveys would be sent to each location. The number of surveys sent to the different groups was based on a desire to receive a minimum of 30 usable returns from each group so that the statistical comparison could be applied in a meaningful manner. This was done given the knowledge that a total of 775 surveys were to be distributed. In an attempt to reach a minimum N of 30 in each group, the writer monitored the
number of potential subjects at each sampling site and compared them to the total available surveys as districts agreed to participate. Therefore, due to their relatively low numbers, questionnaires were sent to all available occupational and physical therapists that matched the subject qualifications. Questionnaires were sent to the majority of identified communication specialists. A smaller percentage, but larger number, of questionnaires were sent to special education teachers and parents given their greater abundance compared the other three study groups. Throughout the process of identifying potential subjects, follow-up phone calls were made and correspondence was sent to encourage participation from districts that had not responded in a timely fashion. (d) In late January or early February, 1988 a package of survey materials was sent to the contact person at each participating site with instructions for distribution (See Appendix E). (e) The school contact person was directed to distribute the survey materials to the appropriate personnel. Teachers each were given one additional survey to send home to a randomly selected parent who matched the subject qualifications. Teachers were asked to identify parents who were at least 21 years old, had a child with a severe handicap, and whose child received at least two of the three related services examined in this study (See Appendix A). (f) Respondents were instructed to return the completed questionnaire in the self-addressed stamped envelope that was provided by the researcher.

**Data Analysis Procedures**

Similarities and differences between the subject groups, were explored using a one-way analysis of variance (ANOVA). Given the unequal frequency of subjects in
each group, the General Linear Model (GLM), Type III, was used to calculate the ANOVA using the Statistical Analysis System (SAS, 1985). Post hoc analyses were conducted on all variables related to roles, criteria, and authority using the conservative Scheffe’ test of multiple comparisons. In addition to its conservative nature, the Scheffe’ procedure was selected because it can be used to compare groups of unequal numbers (Kirk, 1982, p.121) and for its usefulness in reducing experimentwise error rate (Glasmapp & Poggio, 1985, p. 477; Winer, 1971, p. 201). Basic descriptive statistics including means, standard deviations, and percentages were used to describe the sample subject groups and examine the targeted variables. Qualitative data from the open comments section of the survey were analyzed using categorical coding (Bogdan & Biklen, 1982). Returned questionnaires were excluded from analysis if they were: (a) returned by persons from nonintegrated school sites; (b) returned by persons not matching subject descriptions such as teacher aides, certified occupational therapy assistants; (c) filled out incompletely; or (d) filled out incorrectly.
CHAPTER 4
RESULTS

This chapter begins by presenting overall response rate data as well as response rates for each subject group. Secondly, descriptive information about each group is offered based on the background information collected from the first page of the study questionnaire (see Appendix B). Next, statistical and qualitative data from each major section of the questionnaire are presented. These areas include: (a) roles of related service providers, (b) criteria used in related service decision-making, (c) authority perceptions, and (d) agreement within teams.

Response Rates
Overall Response Rate

A total of 775 questionnaires were provided to school systems for distribution to parents, special education teachers, occupational therapists, physical therapists, and communication specialists. Due to sampling procedures that relied upon special education administrators to distribute the questionnaires to the subjects of the study, the number of surveys that were actually received by the subjects is unknown. Forty-eight percent (N = 374) of the total number of questionnaires distributed to the districts were returned. Of those returned, 62 surveys were excluded from data analysis for reasons explained in each of the following subsections. A total of 312 questionnaires were ultimately included in data analysis.
Response Rate: Parents of Children with Severe Handicaps

A total of 234 questionnaires were provided to school systems for distribution to parents of children with severe handicaps. Distribution of questionnaires to parents required a two-stage process whereby school administrators gave surveys to special education teachers who, in turn, distributed them to parents. All professional subjects received their questionnaires directly from the school administrator. Due to this sampling procedure that relied on various special education personnel to send surveys to parents, the number of surveys that were received by parents is unknown. Thirty-two percent ($n = 74$) of the total number of questionnaires distributed to the districts for parents were returned. Of those returned, 16 surveys were excluded from data analysis. Of these, six were returned by parents whose children attended segregated schools, seven were incomplete, and three were filled out incorrectly. A total of 58 questionnaires from parents were ultimately included in the data analysis.

Response Rate: Special Education Teachers

A total of 234 questionnaires were provided to school systems for distribution to special education teachers. Fifty-five percent ($n = 129$) of the total number of questionnaires distributed to the districts for special education teachers were returned. Twenty-nine returned surveys were excluded from data analysis. Of these, 14 were returned by teachers who work in segregated schools, three were returned by teacher aides, eight were incomplete, and four were filled out incorrectly. A total of 100 questionnaires from special education teachers were ultimately included in the data analysis.
Response Rate: Occupational Therapists

A total of 78 questionnaires were provided to school systems for distribution to occupational therapists. Sixty-nine percent ($n = 54$) of the total number of questionnaires distributed to the districts for occupational therapists were returned. Eight returned surveys were excluded from data analysis. Of these, one was returned by an occupational therapist who worked in segregated schools, one was filled out incorrectly, and six were returned by certified occupational therapy assistants. A total of 46 questionnaires from occupational therapists were ultimately included in the data analysis.

Response Rate: Physical Therapists

A total of 74 questionnaires were provided to school systems for distribution to physical therapists. Fifty-four percent ($n = 40$) of the total number of questionnaires distributed to the districts for physical therapists were returned. Three returned surveys were excluded from data analysis. Of these, all three were returned by physical therapists who worked in segregated schools. A total of 37 questionnaires from physical therapists were ultimately included in the data analysis.

Response Rate: Communication Specialists

A total of 155 questionnaires were provided to school systems for distribution to communication specialists. Fifty percent ($n = 77$) of the total number of questionnaires distributed to the districts for communication specialists were
Six returned surveys were excluded from data analysis. Of these, five were returned by communication specialists who worked in segregated schools, and one incomplete questionnaire was returned. A total of 71 questionnaires from communication specialists were ultimately included in the data analysis.

**Descriptive Information about Respondents and Service Delivery**

*Descriptive Information: Parents of Children with Severe Handicaps*

Forty percent (n = 23) of respondent parents identified the schools attended by their children as urban, 36% (n = 21) as suburban, and 24% (n = 14) as rural. Fifty percent (n = 29) were parents of elementary school students, while the other half (n = 29) were parents of middle school or secondary students.

Sixty-nine percent (n = 40) of the parents reported that primary mode of service delivery for occupational and physical therapy consisted of individual sessions conducted directly by therapists, while an additional 10% (n = 6) identified group sessions conducted directly by therapists as the primary mode. The remaining 21% (n = 12) indicated that indirect consultation was the primary mode of occupational and physical therapy service delivery. In reference to the delivery of speech/language services, 74% (n = 43) identified individual sessions conducted directly by the specialist as the primary mode of service delivery, while an additional 19% (n = 11) indicated group sessions conducted by therapists as the primary mode. The remaining 7% (n = 4) reported indirect consultation as the primary mode of service delivery for speech/language services.

Seventy-nine percent (n = 46) of the parents indicated that related services in
general were primarily provided to their children in locations that were physically isolated from classroom activities, such as in separate areas of the classroom or other rooms. The remaining 21% ($n = 12$) reported that the related services were offered within classroom activities.

Parents were asked to rank factors that were the most influential in shaping their views regarding the provision of related services. These factors included, (a) formal education, (b) ongoing inservice education, (c) personal values and beliefs, and (d) work experience. Seventy-nine percent ($n = 46$) rated personal values and beliefs first or second. Parents indicated that formal education was the least influential of the factors offered for consideration, as 47% ($n = 27$) rated it lowest.

**Descriptive Information: Special Education Teachers**

Forty-six percent ($n = 46$) of respondent special education teachers identified the schools in which they worked as urban, 34% ($n = 34$) as suburban, and 20% ($n = 20$) as rural. Six percent ($n = 6$) had two or less years of experience with persons with severe handicaps, 23% ($n = 23$) reported having 3 to 5 years of experience, 30% ($n = 30$) had 6 to 10 years of experience, and 41% ($n = 41$) reported having 11 or more years of experience.

Sixty-eight percent ($n = 68$) of the special education teachers reported that primary mode of service delivery for occupational and physical therapy consisted of individual sessions conducted directly by therapists, while an additional 8% ($n = 8$) identified group sessions conducted directly by therapists as the primary mode. The remaining 24% ($n = 24$) indicated that indirect consultation was the primary mode of occupational and physical therapy service delivery. In reference to the delivery of
speech/language services, 53% (n = 53) identified individual sessions conducted
directly by the specialist as the primary mode of service delivery, while an
additional 37% (n = 37) indicated group sessions conducted by therapists were the
primary mode. The remaining 10% (n = 10) reported indirect consultation as the
primary mode of service delivery for speech/language services.

Sixty-five percent (n = 65) of the special education teachers indicated that
related services in general were primarily provided to their students in locations
that were physically isolated from classroom activities, such as in separate areas of
the classroom or other rooms. The remaining 35% (n = 35) reported that the
related services were offered within classroom activities.

Special education teachers were asked to rank factors that were the most
influential in shaping their views regarding the provision of related services. These
factors included, (a) formal education, (b) ongoing inservice education, (c)
personal values and beliefs, and (d) work experience. Eighty-four percent (n = 84)
rated their work experience first or second. Special education teachers indicated
that ongoing inservice education was the least influential of the factors offered for
consideration, as 36% (n = 36) rated it lowest.

**Descriptive Information: Occupational Therapists**

Sixty-one percent (n = 28) of respondent occupational therapists identified the
schools in which they worked as urban, 28% (n = 13) as suburban, and 11% (n = 5) as rural. Twenty percent (n = 9) had two or less years of experience with
persons with severe handicaps, 24% (n = 11) reported having 3 to 5 years of
experience, 35% (n = 16) had 6 to 10 years of experience, and 22% (n = 10)
reported having 11 or more years of experience.

Eighty-three percent (n = 38) of the occupational therapists reported that primary mode of service delivery for occupational and physical therapy consisted of individual sessions conducted directly by therapists, while an additional 9% (n = 4) identified group sessions conducted directly by therapists as the primary mode. The remaining 9% (n = 4) indicated that indirect consultation was the primary mode of occupational and physical therapy service delivery. In reference to the delivery of speech/language services, 44% (n = 20) identified individual sessions conducted directly by the specialist as the primary mode of service delivery, while an additional 52% (n = 24) indicated group sessions conducted by therapists were the primary mode. The remaining 4% (n = 2) reported indirect consultation as the primary mode of service delivery for speech/language services.

Seventy-eight percent (n = 36) of the occupational therapists indicated that related services in general were primarily provided to their students in locations that were physically isolated from classroom activities, such as in separate areas of the classroom or other rooms. The remaining 22% (n = 10) reported that the related services were offered within classroom activities.

Occupational therapists were asked to rank factors that were the most influential in shaping their views regarding the provision of related services. These factors included, (a) formal education, (b) ongoing inservice education, (c) personal values and beliefs, and (d) work experience. Eighty percent (n = 37) rated their work experience first or second. Occupational therapists indicated that personal values and beliefs were the least influential of the factors offered for consideration, as 39% (n = 18) rated it lowest.
Descriptive Information: Physical Therapists

Forty-six percent \((n = 17)\) of respondent physical therapists identified the schools in which they worked as urban, 40.5% \((n = 15)\) as suburban, and 13.5% \((n = 5)\) as rural. Twenty-two percent \((n = 8)\) had two or less years of experience with persons with severe handicaps, 24% \((n = 9)\) reported having 3 to 5 years of experience, 40.5% \((n = 15)\) had 6 to 10 years of experience, and 13.5% \((n = 5)\) reported having 11 or more years of experience.

Eighty-six percent \((n = 32)\) of the physical therapists reported that primary mode of service delivery for occupational and physical therapy consisted of individual sessions conducted directly by therapists, while an additional 3% \((n = 1)\) identified group sessions conducted directly by therapists as the primary mode. The remaining 11% \((n = 4)\) indicated that indirect consultation was the primary mode of occupational and physical therapy service delivery. In reference to the delivery of speech/language services, 65% \((n = 24)\) identified individual sessions conducted directly by the specialist as the primary mode of service delivery, while an additional 27% \((n = 10)\) indicated group sessions conducted by therapists were the primary mode. The remaining 8% \((n = 3)\) reported indirect consultation as the primary mode of service delivery for speech/language services.

Seventy-three percent \((n = 27)\) of the physical therapists indicated that related services in general were primarily provided to their students in locations that were physically isolated from classroom activities, such as in separate areas of the classroom or other rooms. The remaining 27% \((n = 10)\) reported that the related services were offered within classroom activities.

Physical therapists were asked to rank factors that were the most influential in
shaping their views regarding the provision of related services. These factors included, (a) formal education, (b) ongoing inservice education, (c) personal values and beliefs, and (d) work experience. Eighty-three percent ($n = 31$) rated their work experience first or second. Physical therapists indicated that formal education was the least influential of the factors offered for consideration, as 43% ($n = 16$) rated it lowest.

Descriptive Information: Communication Specialists

Forty-five percent ($n = 32$) of respondent communication specialists identified the schools in which they worked as urban, 39% ($n = 28$) as suburban, and 16% ($n = 11$) as rural. Ten percent ($n = 7$) had two or less years of experience with persons with severe handicaps, 28% ($n = 20$) reported having 3 to 5 years of experience, 27% ($n = 19$) had 6 to 10 years of experience, and 35% ($n = 25$) reported having 11 or more years of experience.

Seventy percent ($n = 50$) of the communication specialists reported that primary mode of service delivery for occupational and physical therapy consisted of individual sessions conducted directly by therapists, while an additional 9% ($n = 6$) identified group sessions conducted directly by therapists as the primary mode. The remaining 21% ($n = 15$) indicated that indirect consultation was the primary mode of occupational and physical therapy service delivery. In reference to the delivery of speech/language services, 39% ($n = 28$) identified individual sessions conducted directly by the specialist as the primary mode of service delivery, while an additional 59% ($n = 42$) indicated group sessions conducted by therapists were the primary mode. The remaining 1% ($n = 1$) reported indirect consultation as the
primary mode of service delivery for speech/language services.

Seventy-two percent (n = 51) of the communication specialists indicated that related services in general were primarily provided to their students in locations that were physically isolated from classroom activities, such as in separate areas of the classroom or other rooms. The remaining 28% (n = 20) reported that the related services were offered within classroom activities.

Communication specialists were asked to rank factors that were the most influential in shaping their views regarding the provision of related services. These factors included, (a) formal education, (b) ongoing inservice education, (c) personal values and beliefs, and (d) work experience. Eighty-five percent (n = 60) rated their work experience first or second. Communication specialists indicated that personal values and beliefs were the least influential of the factors offered for consideration, as 38% (n = 27) rated it lowest.

Narrative Comments of Respondents

Overall, 38% (n = 119) of the surveys included in data analysis contained narrative comments written by respondents. Comments were provided in response to the following statement, "The purpose of this section of the survey is to provide an open forum. If you would like to make any comments that you believe would help us to better understand how people make decisions about who gets related services in public schools, how much, what type, etc., you are invited to note them here or attach them to this survey." Within each group, approximately one-third to one-half of the respondents wrote additional comments: physical therapists 49% (n =
18), parents 48% (n = 28), occupational therapists 39% (n = 18), special
education teachers 34% (n = 34), and communication specialists 30% (n = 21).
Comments written by respondents are reported in the subsequent sections based on
their topical categorization.

One-Way Analysis of Variance

Twenty-three separate variables were tested using one-way analysis of variance
to determine if differences existed between the subject groups. Experimentwise
error rate on 23 ANOVAs at the alpha level of .05 suggests that one or two
statistically significant $F$ scores might be expected merely by chance. Twelve of
the 23 ANOVAs had statistically significant $F$ scores at the .05 level, more than would
be expected by chance.

Following post hoc analysis using the Scheffe' multiple comparison procedure to
identify which groups differed and to reduce the experimentwise error rate
(Glasnapp & Poggio, 1985), nine of the 12 significant variables showed at least one
pair-wise difference at the alpha level of .05. Three variables, a) facilitation of
functional skills and activities, b) severity of impairment, and c) within group
agreement regarding authority perceptions had significant $F$ scores, but no pairwise
differences. This may be explained by the fact that it is easier to demonstrate
statistical significance in the overall ANOVA because of the larger degrees of freedom.
When pair-wise comparisons are made the degrees of freedom are necessarily
smaller, thus making it more difficult to obtain statistical significance. This
difficulty was exacerbated because the largest differences on these three variables
existed between parents ($n = 58$) and either physical therapists ($n = 37$) or occupational therapists ($n = 46$). These three groups had smaller group sizes than either communication specialists ($n = 71$) or special education teachers ($n = 100$).

Even if statistical significance had been achieved, the practical significance of any potential pair-wise differences for the variable "facilitation of functional skills and activities" would have been limited because the group means were all high on the 10 point Likert-style scale and the scores were tightly clustered as evidenced by the low standard deviations. Group scores ranged from $M = 8.95$, $SD = 1.39$ (parents) to $M = 9.65$, $SD = 0.68$ (physical therapists). While statistically significant pair-wise differences were not found for the variables "severity of impairment" and "within group agreement regarding authority perceptions" lower mean scores and larger standard deviations warrant close consideration of these variables in future research with larger samples to determine if differences exist.

The following sections report the results regarding each of the study areas, a) roles, b) criteria, c) authority, and d) agreement within teams.

Roles of Related Service Providers

One-way analysis of variance (ANOVA) and 100 pair-wise post hoc analyses using the Scheffe’ test were conducted to identify potential differences among parents, special education teachers, occupational therapists, physical therapists, and communication specialists in reference to 10 potential roles served by related service providers that were presented as research questions in Chapter 1 and discussed in Chapter 2. A summary of these ANOVA results are available in Table
4.1. Table 4.2 presents the Scheffe' tests for significant ANOVA scores. Given the alpha level of .05, five significant differences may be expected by chance -- three statistically significant differences were actually identified. Table 4.3 depicts mean scores and standard deviations ordered by rank for each group as well as overall rankings.

No narrative comments were written by respondents that directly addressed the roles of related service providers that were included on the questionnaire. Two responses were written that referred to role issues. Each pointed out the, "... difficulty separating education related services from clinical based services" and suggested that children who need therapy services, "... for a disability that is not affecting his/her school performance, should receive the therapy at a hospital/clinic setting - not by the school specialist".

**Prevention of Regression, Deformity, or Pain**

In response to the statement, "Within the context of assessment, planning, implementation, and evaluation, an important role for specialists serving students with severe handicaps in public schools is prevention of regression, deformity, and/or pain", no significant differences were found between subject groups, $F (4,307) = 1.61, p < .1715$ (see Table 4.1). Each group agreed that the role of prevention was important. Communications specialists rated prevention lowest ($M = 8.38, SD =1.87$), while physical therapists rated it the highest ($M = 9.24, SD =1.32$). As depicted in Table 4.3, the role of preventing regression was ranked fifth overall ($M = 8.80, SD = 1.76$) compared to all presented roles.
Table 4.1

One-Way Analysis of Variance Data for Roles of Related Service Providers

<table>
<thead>
<tr>
<th>SOURCE</th>
<th>df</th>
<th>SS</th>
<th>MS</th>
<th>F</th>
<th>p&gt;F</th>
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<tr>
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<td></td>
<td></td>
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<tr>
<td>Discipline</td>
<td>4</td>
<td>21.12</td>
<td>5.28</td>
<td>1.61</td>
<td>0.1715</td>
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<tr>
<td>Error</td>
<td>307</td>
<td>1006.80</td>
<td>3.28</td>
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<td>Total</td>
<td>311</td>
<td>1027.92</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Role: Promoting Normal Developmental Sequences</td>
<td></td>
<td></td>
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<td></td>
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<tr>
<td>Discipline</td>
<td>4</td>
<td>40.88</td>
<td>10.21</td>
<td>2.28</td>
<td>0.0606</td>
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<tr>
<td>Error</td>
<td>307</td>
<td>1375.59</td>
<td>4.48</td>
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<tr>
<td>Total</td>
<td>311</td>
<td>1416.46</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>Role: Remediation / Restoration of Identified Deficits</td>
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<td></td>
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<td></td>
<td></td>
</tr>
<tr>
<td>Discipline</td>
<td>4</td>
<td>43.88</td>
<td>10.97</td>
<td>3.76</td>
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<tr>
<td>Error</td>
<td>307</td>
<td>896.12</td>
<td>2.92</td>
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<td>Total</td>
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<td>940.00</td>
<td></td>
<td></td>
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<td>Role: Developing Adaptations and/or Equipment to Encourage Functional Participation</td>
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<td>Discipline</td>
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<td>Error</td>
<td>307</td>
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<tr>
<td>Total</td>
<td>311</td>
<td>319.92</td>
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Table 4.1 (continued)

<table>
<thead>
<tr>
<th>Role: Facilitation of Functional Skills and Activities</th>
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</thead>
<tbody>
<tr>
<td>Discipline</td>
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<tr>
<td>Error</td>
</tr>
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<td>Total</td>
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<table>
<thead>
<tr>
<th>Role: Reciprocal Consultation with Colleagues</th>
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</thead>
<tbody>
<tr>
<td>Discipline</td>
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<tr>
<td>Error</td>
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<table>
<thead>
<tr>
<th>Role: Removing or Modifying Barriers to Participation</th>
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</thead>
<tbody>
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<td>Discipline</td>
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<tr>
<td>Error</td>
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<table>
<thead>
<tr>
<th>Role: Resource and Support to Families</th>
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</thead>
<tbody>
<tr>
<td>Discipline</td>
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<td>Total</td>
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<table>
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<th>Role: Liaison between the Medical Community and the School Team</th>
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</thead>
<tbody>
<tr>
<td>Discipline</td>
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<tr>
<td>Error</td>
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<tr>
<td>Total</td>
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<table>
<thead>
<tr>
<th>Role: Advocate for Students</th>
</tr>
</thead>
<tbody>
<tr>
<td>Discipline</td>
</tr>
<tr>
<td>Error</td>
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<tr>
<td>Total</td>
</tr>
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</table>

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Table 4.2
Results of Scheffe’ Multiple Comparison Procedures for Roles of Related Service Providers

Role: Remediation / Restoration of Identified Deficits

\[
\begin{align*}
\text{ALPHA} &= 0.05 \quad \text{CONFIDENCE} = 0.95 \quad \text{DF} = 307 \quad \text{MSE} = 2.91895 \\
\text{CRITICAL VALUE OF F} &= 2.40 \quad F = 3.76
\end{align*}
\]

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<tbody>
<tr>
<td>n</td>
<td>37</td>
<td>71</td>
<td>100</td>
<td>46</td>
<td>58</td>
</tr>
<tr>
<td>M(SD)</td>
<td>9.22 (0.92)</td>
<td>8.92 (1.25)</td>
<td>8.56 (1.62)</td>
<td>8.26 (2.11)</td>
<td>8.05 (2.27)</td>
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---

Role: Liaison between the Medical Community and the School Team

\[
\begin{align*}
\text{ALPHA} &= 0.05 \quad \text{CONFIDENCE} = 0.95 \quad \text{DF} = 307 \quad \text{MSE} = 5.03364 \\
\text{CRITICAL VALUE OF F} &= 2.40 \quad F = 3.10
\end{align*}
\]

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<tbody>
<tr>
<td>n</td>
<td>37</td>
<td>46</td>
<td>100</td>
<td>71</td>
<td>58</td>
</tr>
<tr>
<td>M(SD)</td>
<td>8.70 (1.63)</td>
<td>7.71 (2.12)</td>
<td>7.55 (2.38)</td>
<td>7.25 (2.31)</td>
<td>7.22 (2.35)</td>
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Table 4.3

Rankings of Roles of Related Service Personnel with Students with Severe Handicaps Based on Mean Scores and Standard Deviations

<table>
<thead>
<tr>
<th>RANK</th>
<th>OVERALL</th>
<th>PARENTS</th>
<th>SPECIAL EDUCATORS</th>
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<th>COMMUNICATION SPECIALISTS</th>
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<td>M (SD)</td>
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<td>FUNCTIONAL SKILLS</td>
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<td>REMOVAL OF BARRIERS</td>
<td>RECIPROCAL CONSULTING</td>
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<td>PREVENTING REGRESSION</td>
<td>REMOVAL OF BARRIERS</td>
<td>PREVENTING REGRESSION</td>
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<td>8.76 (2.00)</td>
<td>9.24 (1.32)</td>
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<td>REMEDIATING FAMILY SUPPORT</td>
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<td>RECIPROCAL CONSULTING</td>
<td>REMOVAL OF BARRIERS</td>
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<tr>
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<td>8.56 (1.62)</td>
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<td>FAMILY SUPPORT</td>
<td>FAMILY SUPPORT</td>
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<td>8.51 (1.86)</td>
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<td>9.03 (1.44)</td>
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<td>NORMAL DEVELOPMENT DEFICITS</td>
<td>REMEDIATING FOR STUDENT</td>
<td>ADVOCATE PREVENTING REGRESSION</td>
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<td>7.80 (2.51)</td>
<td>8.26 (2.11)</td>
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<td>REMEDIATING DEFICITS</td>
<td>ADVOCATE FOR STUDENT</td>
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<td>NORMAL DEVELOPMENT</td>
<td>ADVOCATE FOR STUDENT</td>
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<tr>
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<td>8.12 (1.96)</td>
<td>8.05 (2.27)</td>
<td>7.74 (2.51)</td>
<td>8.09 (2.05)</td>
<td>8.73 (1.84)</td>
<td>7.70 (2.25)</td>
</tr>
<tr>
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<td>LIAISON WITH PHYSICIANS</td>
<td>LIAISON WITH PHYSICIANS</td>
<td>LIAISON WITH PHYSICIANS</td>
<td>LIAISON WITH PHYSICIANS</td>
<td>LIAISON WITH PHYSICIANS</td>
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<tr>
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<td>7.69 (2.16)</td>
<td>7.22 (2.35)</td>
<td>7.55 (2.38)</td>
<td>7.72 (2.12)</td>
<td>8.70 (1.63)</td>
<td>7.26 (2.31)</td>
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</table>

*OVERALL mean scores and standard deviations were calculated by giving equal weighting to each group.*
**Promoting Normal Developmental Sequences**

In response to the statement, "Within the context of assessment, planning, implementation, and evaluation, an important role for specialists serving students with severe handicaps in public schools is promoting normal developmental sequences", no significant differences were found between subject groups, $F(4,307) = 2.28$, $p < .0606$ (see Table 4.1). While each respondent group agreed that the role of promoting developmental sequences was important, this role ranked eighth of the ten presented roles (see Table 4.3). Special education teachers rated promoting developmental sequences lowest ($M = 7.80$, $SD = 2.51$), while physical therapists rated it the highest ($M = 8.73$, $SD = 1.84$).

**Remediation / Restoration of Identified Deficits**

In response to the statement, "Within the context of assessment, planning, implementation, and evaluation, an important role for specialists serving students with severe handicaps in public schools is remediation/restoration of identified deficits", a statistically significant difference was found between the ratings of the physical therapist and parent groups, $F(4,307) = 3.76$, $p < .0053$ (see Table 4.1). Parents rated remediation/restoration of identified deficits lowest ($M = 8.05$, $SD = 2.27$) compared to any group, while physical therapists rated it the highest ($M = 9.22$, $SD = .92$) (see Table 4.2). Despite this difference, ratings by all groups regarding the role of remediation/restoration of identified deficits were in the important range. As depicted in Table 4.3, the role of remediation/restoration of identified deficits was ranked seventh overall ($M = 8.60$, $SD = 1.63$) compared to all presented roles.
Development of Adaptations and/or Equipment to Encourage Functional Participation

In response to the statement, "Within the context of assessment, planning, implementation, and evaluation, an important role for specialists serving students with severe handicaps in public schools is developing adaptations and/or equipment to encourage functional participation", no significant differences were found between subject groups, $F(4,307) = 2.38, p < .052$ (see Table 4.1). Each group agreed that the role of developing adaptations was important. It ranked first overall of the ten presented roles and was ranked first by each group. As depicted in Table 4.3, the role of adaptation was the only role in which the mean score was in excess of nine in each group. Communication specialists rated developing adaptations lowest ($M = 9.34, SD = 0.97$), while physical therapists rated it the highest ($M = 9.78, SD = 0.48$).

Facilitation of Functional Skills and Activities

In response to the statement, "Within the context of assessment, planning, implementation, and evaluation, an important role for specialists serving students with severe handicaps in public schools is facilitation of functional skills and activities", no significant differences were found between subject groups, $F(4,307) = 3.58, p < .0072$ (see Table 4.1). Each group agreed that the role of facilitating functional skills was important. Facilitation of functional skills and activities ranked second overall of the ten presented roles and was ranked second by each group (see Table 4.3). Parents rated facilitation of functional skills lowest ($M = 8.95, SD = 1.39$), while physical therapists rated it the highest ($M = 9.65, SD = 0.68$).
Reciprocal Consultation with Colleagues

In response to the statement, "Within the context of assessment, planning, implementation, and evaluation, an important role for specialists serving students with severe handicaps in public schools is reciprocal consultation with colleagues", no significant differences were found between subject groups, $F (4,307) = 1.76, p < .1373$ (see Table 4.1). Each group agreed that the role of reciprocal consultation was important. Parents rated reciprocal consultation lowest ($M = 8.52, SD = 1.78$), while occupational therapists rated it the highest ($M = 9.20, SD = 1.20$). As depicted in Table 4.3, the role of reciprocal consultation was ranked third overall ($M = 8.93, SD = 1.47$) compared to all presented roles.

Removing or Modifying Barriers to Participation

In response to the statement, "Within the context of assessment, planning, implementation, and evaluation, an important role for specialists serving students with severe handicaps in public schools is removing or modifying barriers to participation", no significant differences were found between subject groups, $F (4,307) = 1.02, p < .3997$ (see Table 4.1). Each group agreed that the role of removing or modifying barriers was important. Communication specialists rated removing or modifying barriers lowest ($M = 8.69, SD = 1.56$), while physical therapists rated it the highest ($M = 9.27, SD = 0.93$). As depicted in Table 4.3, the role of removing or modifying barriers to participation was ranked fourth overall ($M = 8.87, SD = 1.47$) compared to all presented roles.
Resource and Support to Families

In response to the statement, "Within the context of assessment, planning, implementation, and evaluation, an important role for specialists serving students with severe handicaps in public schools is being a resource and support to families", no significant differences were found between subject groups, $F(4, 307) = 1.22, p < .3041$ (see Table 4.1). Each group agreed that the role of being a resource and support to families was important. Occupational therapists rated being a resource and support to families lowest ($M = 8.5, SD = 1.44$), while physical therapists rated it the highest ($M = 9.03, SD = 1.44$). As depicted in Table 4.3, the role of being a resource and support to families was ranked sixth overall ($M = 8.74, SD = 1.58$) compared to all presented roles. Respondent parents ranked being a resource and support to families third ($M = 8.95, SD = 1.66$), behind developing adaptations and facilitating functional skills.

Liaison Between the Medical Community and the School Team

In response to the statement, "Within the context of assessment, planning, implementation, and evaluation, an important role for specialists serving students with severe handicaps in public schools is being a liaison between the medical community and the school team", a statistically significant difference was found between the ratings of physical therapist and communication specialist groups, as well as between physical therapist and parent groups, $F(4, 307) = 3.10, p < .0158$ (see Table 4.1). Parents rated being a liaison between the medical community and the school team lowest ($M = 7.22, SD = 2.35$) compared to other groups, followed closely by communication specialists ($M = 7.25, SD = 2.31$) (see Table 4.2).
Physical therapists rated being a liaison between the medical community and the school team the highest ($M = 8.07, SD = 1.63$). Despite this difference, ratings by all groups regarding the role of being a liaison between the medical community and the school team were in the important range. As depicted in Table 4.3, the role of being a liaison between the medical community and the school team was ranked last overall ($M = 7.69, SD = 2.16$) compared to all presented roles and was ranked last by each respondent group.

Advocate for Students

In response to the statement, "Within the context of assessment, planning, implementation, and evaluation, an important role for specialists serving students with severe handicaps in public schools is serving as an advocate for the student", no significant differences were found between subject groups, $F(4,307) = 2.20, p < .0691$ (see Table 4.1). Each group agreed that the role of serving as an advocate for the student was important. Communication specialists rated serving as an advocate for the student lowest ($M = 7.7, SD = 2.25$), while physical therapists rated it the highest ($M = 8.77, SD = 1.23$). As depicted in Table 4.3, the role of serving as an advocate for the student was ranked ninth overall ($M = 8.12, SD = 1.96$) compared to all presented roles.

Criteria for Related Service Decision-Making

One-way analysis of variance (ANOVA) and 70 pair-wise post hoc analyses using the Scheffe' test were conducted to identify potential differences among parents,
special education teachers, occupational therapists, physical therapists, and communication specialists in reference to seven criteria used in related service decision-making. A summary of these ANOVA results is available in Table 4.4. Table 4.5 presents the Scheffe' tests for significant ANOVA scores. Given the alpha level of .05, 3 or 4 statistically significant differences may be expected by chance -- nine statistically significant differences were actually identified as depicted in Table 4.5. Table 4.6 depicts mean scores and standard deviations ordered by rank for each group as well as overall rankings.

Young Age

In response to the statement, "When making decisions about the provision of related services for a student with a severe handicap such as eligibility for related services, frequency of service, and type (direct by therapist or consultation), the younger the age, the more important it is for the student to receive services", a statistically significant difference was found between the ratings of the occupational therapist and parent groups, $F(4,307) = 3.57, p < .0073$ (see Table 4.4).

Parents rated the criteria of "young age" lowest ($M = 7.22, SD = 3.42$) compared to other groups, while occupational therapists rated young age the highest ($M = 8.78$, $SD = 1.52$) (see Table 4.5). While the mean scores for parents indicated that they agreed that young age was an important criteria, 28% ($n = 16$) responded that they disagreed with the statement by indicating a score between 1 and 5 on the Likert-type scale. Twenty-two percent ($n = 22$) of responding special education teachers similarly reported varying levels of disagreement. As depicted in Table 4.6, the criteria of young age was ranked third overall ($M = 8.05$, $SD = 2.32$) compared to all presented criteria. It was ranked first or second by occupational therapists,
Table 4.4

One-Way Analysis of Variance Data for Criteria Used by Related Service Providers to Make Service Delivery Decisions for Students with Severe Handicaps

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<thead>
<tr>
<th>SOURCE</th>
<th>df</th>
<th>SS</th>
<th>MS</th>
<th>F</th>
<th>p &gt; F</th>
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<td></td>
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<tr>
<td>Criteria: Favorable History and Prognosis for Remediation</td>
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<tr>
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<tr>
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<td></td>
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<tr>
<td>Discipline</td>
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<tr>
<td>Criteria: Greater Probability of Parental Involvement</td>
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Table 4.5

Results of Scheffe’ Multiple Comparison Procedures for Criteria Used to Make Related Service Delivery Decisions for Students with Severe Handicaps

Criteria: Younger Age

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<th>Criteria: Favorable History and Prognosis for Remediation</th>
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<tr>
<td>Criteria: Higher Level of Intelligence</td>
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**M(SD)**

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<tr>
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<td>8.49 (1.71)</td>
<td>8.21 (2.06)</td>
<td>7.57 (2.87)</td>
<td>7.22 (3.42)</td>
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<td><strong>n = 71</strong></td>
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<td>7.17 (2.73)</td>
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<td><strong>n = 46</strong></td>
<td><strong>n = 100</strong></td>
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<td>6.66 (2.70)</td>
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<tr>
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<td><strong>n = 46</strong></td>
<td><strong>n = 100</strong></td>
<td><strong>n = 58</strong></td>
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Table 4.6

Rankings of Criteria Used for Related Service Decision Making with Students with Severe Handicaps Based on Mean Scores and Standard Deviations

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<th>RANK</th>
<th>OVERALL*</th>
<th>PARENTS</th>
<th>SPECIAL EDUCATORS</th>
<th>OCCUPAT. THERAPISTS</th>
<th>PHYSICAL THERAPISTS</th>
<th>COMMUNICATION SPECIALISTS</th>
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<td>n = 100</td>
<td>n = 46</td>
<td>n = 37</td>
<td>n = 71</td>
</tr>
<tr>
<td>M (SD)</td>
<td>M (SD)</td>
<td>M (SD)</td>
<td>M (SD)</td>
<td>M (SD)</td>
<td>M (SD)</td>
<td>M (SD)</td>
</tr>
<tr>
<td>1</td>
<td>EDUCATIONAL PROGRAM</td>
<td>8.57 (1.95)</td>
<td>8.95 (2.11)</td>
<td>8.61 (1.89)</td>
<td>8.76 (1.52)</td>
<td>8.59 (1.89)</td>
</tr>
<tr>
<td>2</td>
<td>ABSENCE OF OVERLAP</td>
<td>8.34 (1.94)</td>
<td>8.59 (2.04)</td>
<td>8.27 (2.10)</td>
<td>8.52 (1.85)</td>
<td>8.49 (1.71)</td>
</tr>
<tr>
<td>3</td>
<td>STUDENT SEVERITY OF AGE</td>
<td>8.05 (2.32)</td>
<td>7.48 (3.34)</td>
<td>7.57 (2.67)</td>
<td>8.48 (1.85)</td>
<td>7.97 (1.76)</td>
</tr>
<tr>
<td>4</td>
<td>SEVERITY OF IMPAIRMENT AGE</td>
<td>6.87 (2.61)</td>
<td>7.22 (3.42)</td>
<td>7.44 (2.65)</td>
<td>7.17 (2.73)</td>
<td>7.97 (2.05)</td>
</tr>
<tr>
<td>5</td>
<td>HISTORY &amp; PROGNOSIS IMPAIRMENT</td>
<td>6.87 (2.67)</td>
<td>5.02 (3.44)</td>
<td>6.30 (3.18)</td>
<td>6.00 (2.42)</td>
<td>6.19 (2.41)</td>
</tr>
<tr>
<td>6</td>
<td>STUDENT INTELLIGENCE INVOLVEMENT</td>
<td>4.83 (2.70)</td>
<td>4.53 (3.39)</td>
<td>4.50 (3.08)</td>
<td>5.17 (3.03)</td>
<td>5.54 (2.18)</td>
</tr>
<tr>
<td>7</td>
<td>PARENTAL INVOLVEMENT INTELLIGENCE</td>
<td>4.65 (2.90)</td>
<td>2.88 (2.72)</td>
<td>3.89 (2.87)</td>
<td>4.22 (2.54)</td>
<td>4.46 (2.55)</td>
</tr>
</tbody>
</table>

*OVERALL mean scores and standard deviations were calculated by giving equal weighting to each group.
physical therapists, and communication specialists.

**Favorable History and Prognosis for Remediation**

In response to the statement, "When making decisions about the provision of related services for a student with a severe handicap such as eligibility for related services, frequency of service, and type (direct by therapist or consultation), the more favorable the history and prognosis for remediation, the more important it is for the student to receive services", four pair-wise differences were statistically significant, $F(4,307) = 11.00, p < .0001$ (see Table 4.4). Parents rated "favorable the history and prognosis for remediation" lowest ($M = 5.02, SD = 3.44$) compared with other groups, with 55% reporting disagreement with the statement by indicating scores between 1 and 5 on the Likert-type scale. As indicated in Table 4.5, parent ratings were statistically different than those of the communication specialist ($M = 7.92, SD = 2.24$), physical therapist ($M = 7.97, SD = 1.76$), and occupational therapist groups ($M = 7.17, SD = 2.73$). Communication specialist ratings also differed significantly from special education teachers ($M = 6.30, SD = 3.18$). As depicted in Table 4.6, the criteria of favorable history and prognosis for remediation ranked fifth of seven overall ($M = 6.87, SD = 2.67$).

Written comments by respondents relating to prognosis were characterized by comparisons between how many resources society spends on persons with severe handicaps and how much society can expect to receive in return; for example, "In a world where there is a finite amount of resources, those available have to be distributed wisely - and where they will have the most realistic effect" and "I feel more mildly handicapped children, with good potential for progress in the area of
communication skills are not receiving adequate services. This is because caseloads are filled with severely handicapped children with very limited potential for change.

**Higher Level of Intelligence**

In response to the statement, "When making decisions about the provision of related services for a student with a severe handicap such as eligibility for related services, frequency of service, and type (direct by therapist or consultation), the higher the level of intelligence, the more important it is for the student to receive services," four statistically significant pair-wise differences were identified, \( F(4,307) = 18.68, p < .0001 \) (see Table 4.4). Parents rated "higher the level of intelligence" lowest (\( M = 2.88, SD = 2.72 \)) compared to other groups, with 81% (\( n = 47 \)) reporting disagreement with the statement by indicating scores between 1 and 5 on the Likert-type scale. As indicated in Table 4.5, parent ratings were statistically different than communication specialist (\( M = 6.66, SD = 2.70 \)), physical therapist (\( M = 5.54, SD = 2.18 \)), and occupational therapist groups (\( M = 5.17, SD = 3.03 \)). Communication specialist ratings also differed significantly from those of special education teachers (\( M = 3.89, SD = 2.87 \)), 66% (\( n = 66 \)) of whom disagreed with the statement. Occupational therapists were split in response to this item with 50% (\( n = 23 \)) in agreement and 50% (\( n = 23 \)) in disagreement. Similarly, physical therapists reported 54% (\( n = 20 \)) in agreement and 46% (\( n = 17 \)) in disagreement. Only the communication specialist group predominantly agreed with the "higher the level of intelligence" criteria statement with 73% (\( n = 52 \)) reporting some level of agreement with the statement.
Severity of Impairment

In response to the statement, "When making decisions about the provision of related services for a student with a severe handicap such as eligibility for related services, frequency of service, and type (direct by therapist or consultation), the more severe the impairment, the more important it is for the student to receive services", no statistically significant pair-wise differences were identified among groups, $F(4,307) = 3.81, p < .0048$ (see Table 4.4). Occupational therapists rated "more severe the impairment" lowest ($M = 6.00, SD = 2.42$) while parents rated it the highest ($M = 7.48, SD = 3.34$). As depicted in Table 4.6, the criteria of "more severe impairment" was ranked fourth overall ($M = 6.87, SD = 2.61$) compared to all presented criteria.

Required to Benefit from Educational Program

In response to the statement, "When making decisions about the provision of related services for a student with a severe handicap such as eligibility for related services, frequency of service, and type (direct by therapist or consultation), the more the related service is required in order for the student to benefit from his/her educational program ..., the more important it is for the student to receive services", no statistically significant pair-wise differences were identified among groups, $F(4,307) = 1.26, p < .2860$ (see Table 4.4). Communication specialists rated the "educational program" criteria lowest ($M = 8.18, SD = 2.00$) while parents rated it the highest ($M = 8.95, SD = 2.11$). There was high agreement that this was an important criteria for related service decision-making. As depicted in Table 4.6,
the criteria of "educational program" was ranked first overall (M = 8.57, SD = 1.95). Levels of agreement with the "educational program" criteria statement ranged from 87% of communication specialists to 94% of occupational therapists.

**Greater Probability of Parental Involvement**

In response to the statement, "When making decisions about the provision of related services for a student with a severe handicap such as eligibility for related services, frequency of service, and type (direct by therapist or consultation), the greater the probability of parental involvement, the more important it is for the student to receive services", no statistically significant pair-wise differences were identified among groups, F (4,307) = 1.88, p < .1142 (see Table 4.4).

Occupational therapists rated the "parental involvement" criteria lowest (M = 4.22, SD = 2.54) while communication specialists rated it the highest (M = 5.52, SD = 2.92). With the exception of communication specialists (44% in disagreement with the statement), the other groups predominantly disagreed with the statement about parental involvement, with disagreement ranging from 60% of the parents to 65% of the occupational and physical therapists. As depicted in Table 4.6, the criteria of "parental involvement" was ranked last overall (M = 4.65, SD = 2.90).

**Absence of Overlap Between Disciplines**

In response to the statement, "When making decisions about the provision of related services for a student with a severe handicap such as eligibility for related services, frequency of service, and type (direct by therapist or consultation), the more a specialist's skills are needed for student support but are not possessed by other team members (absence of skill overlap), the more important it is for the
student to receive services", no statistically significant pair-wise differences were identified among groups, $F(4,307) = 0.65, p < .6292$ (see Table 4.4).

Communication specialists rated the "absence of skill overlap" criteria lowest ($M = 8.37, SD = 1.66$) while parents rated it the highest ($M = 8.59, SD = 2.04$). There was high agreement that this was an important criteria for related service decision-making. As depicted in Table 4.6, the criteria of "absence of overlap" was ranked second overall ($M = 8.34, SD = 1.94$). Levels of agreement with the "absence of overlap" criteria statement ranged from 87% of physical therapists to 97% of communication specialists.

**Narrative Comments Regarding Decision-Making Criteria**

Two primary themes were noted regarding related services decision-making criteria. First, respondents reported a need for more systematic approaches in using decision-making criteria. They perceived current models as "subjective" and "left to judgment calls". One respondent pointed out the lack of consensus regarding decision-making criteria by stating that, "everybody just makes it up, there are no agreed criteria". The reportedly arbitrary nature of decision-making criteria prompted a different respondent to call for, "More standardization... to remove the ever so large gray area". One physical therapist capsulized the comments on this subtopic by stating, "I think there is a need to decide on criteria, as I think this is the most controversial area (greatest amount of disparity in opinions), as well as the most ambiguous".

A second theme that emerged from the comments was that in the absence of well defined and commonly agreed upon decision-making criteria, opportunities for the
misuse of judgment increases. It was reported that student services were controlled, in some cases, by criteria that have no conceptual or empirical basis identified in the professional literature. For example, it was reported that related service personnel, "... miss seeing children or reduce the amount of services a child gets because the child is not pleasant to work with (drooling or smell)". Personal preferences toward or against individual students and recommendations based on "habit" were also implicated as criteria that were employed in the absence of existing decision models. Noninstructional criteria such as limited availability of related service personnel and service costs were also reported to be significant criteria applied to decision-making by school administrators. It was suggested that school "... districts are decreasing services in an effort to save money, leaving needy students without direct service". As another respondent stated, "Our administration is trying its darnedest to get children off therapy (money decision)"

Authority Perceptions

One-way analysis of variance (ANOVA) and 20 post hoc analyses using the Scheffe' test were conducted to identify potential differences among parents, special education teachers, occupational therapists, physical therapists, and communication specialists regarding authority perceptions used in related service decision-making. A summary of these ANOVA results is available in Table 4.7. Table 4.8 presents the Scheffe' tests for significant ANOVA scores. Given the alpha level of .05, one statistically significant difference may be expected by chance -- 12 statistically significant differences were actually identified.
Table 4.7

One-Way Analysis of Variance Data on Decision Making Authority Perceptions Held by Related Service Providers, Parents, and Educators Regarding Students with Severe Handicaps

<table>
<thead>
<tr>
<th>SOURCE</th>
<th>df</th>
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<th>MS</th>
<th>F</th>
<th>p&gt;F</th>
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<tbody>
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<td>Authority Perception: Specialists Should Retain Decision Authority for their Own Discipline</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Discipline</td>
<td>4</td>
<td>949.33</td>
<td>237.33</td>
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<td>0.0001</td>
</tr>
<tr>
<td>Error</td>
<td>307</td>
<td>2133.59</td>
<td>6.95</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>311</td>
<td>3082.92</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

| Authority Perception: Decisions Should be Made Based on Group Consensus |    |      |     |      |      |
| Discipline                    | 4  | 354.41 | 88.60 | 12.05 | 0.0001 |
| Error                         | 307 | 2256.44 | 7.35 |      |      |
| Total                         | 311 | 2610.84 |      |      |      |
Table 4.8

Results of Scheffe' Multiple Comparison Procedures for Authority Perceptions Held by Related Service Providers, Parents and Educators Regarding Students with Severe Handicaps

Authority Perception: Specialists Should Retain Decision Authority for their Own Discipline

<table>
<thead>
<tr>
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<th>Comm. Spec.</th>
<th>OT</th>
<th>Spec. Ed</th>
<th>Parents</th>
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<td>n</td>
<td>37</td>
<td>71</td>
<td>46</td>
<td>100</td>
<td>58</td>
</tr>
<tr>
<td>M(SD)</td>
<td>8.51(1.54)</td>
<td>8.35 (2.42)</td>
<td>8.35 (2.31)</td>
<td>5.77 (3.16)</td>
<td>4.00 (2.68)</td>
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Authority Perception: Decisions Should be Made Based on Group Consensus

<table>
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<tr>
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<tbody>
<tr>
<td>n</td>
<td>58</td>
<td>100</td>
<td>46</td>
<td>71</td>
<td>37</td>
</tr>
<tr>
<td>M(SD)</td>
<td>8.76 (2.19)</td>
<td>7.89 (2.26)</td>
<td>6.67 (3.03)</td>
<td>6.18 (3.20)</td>
<td>5.73 (3.11)</td>
</tr>
</tbody>
</table>

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Professional Retention of Final Decision-Making

In response to the statement, "Specialists should share their recommendations with the team (including family) for their consideration, but specialists should retain final decisions regarding their own disciplines", seven statistically significant pair-wise differences were identified, $F(4,307) = 34.15, p < .0001$ (see Table 4.7). Parents rated "professional retention of authority" lowest ($M = 4.00, SD = 2.68$) compared to other groups, with only 33% ($n = 19$) reporting agreement with the statement by indicating scores between 6 and 10 on the Likert-type scale. As indicated in Table 4.8, parent ratings were statistically different than physical therapist ($M = 8.51, SD = 1.54$), communication specialist ($M = 8.35, SD = 2.42$), occupational therapist ($M = 8.35, SD = 2.31$), and special education teacher groups ($M = 5.77, SD = 3.16$). Special education teachers also differed significantly from physical therapist, communication specialist, and occupational therapist groups. Fifty-three percent ($n = 53$) of special education teachers agreed with the statement supporting professional retention of authority while 47% ($n = 47$) disagreed. Eighty-three percent ($n = 59$) of communication specialists were in agreement with professional retention of authority. Similarly, 87% ($n = 40$) of occupational therapists and 92% ($n = 34$) of physical therapists reported varying levels of agreement supporting professional retention of authority.

Comments offered by related service professionals were consistent with the questionnaire results by indicating the perception that therapists should retain control over decision-making related to their discipline. This claim was consistently based on a claim of professional expertise, as therapists made comments such as, "... a specialist, who does after all, know the most about his/her own field
should have the final say”.

Consensus Decision-Making

In response to the statement, "Specialists and team members (including family) should make recommendations based on group consensus where no one team member has more decision-making power than another", five statistically significant pairwise differences were identified, $F(4,307) = 12.05$, $p < .0001$ (see Table 4.7). Physical therapists rated "consensus decision-making" lowest ($M = 5.73$, $SD = 3.11$) compared to other groups, with 51% ($n = 19$) reporting agreement with the statement by indicating scores between 6 and 10 on the Likert-type scale while 49% ($n = 18$) reported disagreement. As indicated in Table 4.8, physical therapists' ratings were statistically different than special education teacher ($M = 7.89$, $SD = 2.26$) and parent groups ($M = 8.76$, $SD = 2.19$). Communication specialists' ratings ($M = 6.18$, $SD = 3.20$) differed significantly from those of special education teacher and parent groups. Occupational therapist ratings ($M = 6.67$, $SD = 3.03$) differed significantly from those of the parent group. Ninety percent ($n = 52$) of parents and 84% ($n = 84$) of special education teachers were in agreement with the consensus decision-making statement. Sixty-seven percent ($n = 31$) of occupational therapists, 56% ($n = 40$) of communication specialists, and 51% ($n = 19$) of physical therapists reported varying levels of agreement supporting consensus decision-making.

Narrative Comments Regarding Decision-Making Authority

Team members reported dissatisfaction with administrative override of their
individual or collective related service decisions. As one speech pathologist reported, "... I feel very upset when I make a recommendation to the local Committee on Special Education and then they decide if a child actually needs the service".

Occupational and physical therapists reported being, "... hampered by the supreme control of the district physician" who they believe have, "... too much say over which children receive related services and which do not". Decision control by physicians is reportedly of concern to team members because, "the doctor (under contract to the school) does not attend the team meeting and has very little involvement with the student, yet his/her decision is considered sacred ...". Differences regarding decision-making authority were reported to be of greatest concern to therapists when, (a) administrative groups, "... at times don't appear to truly consider therapist recommendations", or (b) "... the district office harasses identified team members when their decision is not to their (administration's) liking".

Another theme that emerged from the comments was that professionals perceived that, "services go to children of aggressive, persistent, informed parents", while "... parents who are less vocal receive less services". Practitioners reported that, "... due to the lobbying efforts of parents, particular students receive 3 and 4 times as many services while other students cannot receive any services due to the lack of time therapists have remaining". Practitioners expressed dissatisfaction when, "... parents of our children are able to veto or override many of the related service decisions made". Therapists reported understanding this, "... if the family wishes against services...", but did not think parents should, "... be able to request more if the specialist does feel it is appropriate."

A final major theme of the comments of respondents indicated that parents,
teachers, and related service professionals all expressed that they felt devalued in the process of related service decision-making. Parents reported that they, "... ought to be considered at least as important as the specialist". Parental inclusion in decision-making was described as perfunctory as parents stated, "Too often we feel like a rubber stamp for the specialists program even if we are intensely involved with our children". Some parents, "... are dismissed as unknowing". As one parent put it, "The professionals I work with always make decisions, they do not listen to parents views, they feel because they have a degree they know it all, which I know is not true". Others reported that professionals resisted focusing on family needs. For example, one parent stated, "We are constantly fighting to get therapists to realize our needs in getting our son to help us help him." Parents consistently reported their opinion that, "... the parent has the ultimate responsibility and decision regardless of the team opinion" or that "Nobody knows our son better than us!".

While parents reported being devalued in the related service decision-making process, so did teachers and therapists. Teachers reported that their "... opinion is felt to be of no value" despite teachers' self-perceptions that they, "... have more insight as to student's needs than a specialist ...". Therapists reported feeling like, "an extra pair of hands" or "an interruption to the schedule". They also reported that their recommendations were, "not seriously considered".

Agreement within Teams

One-way analysis of variance (ANOVA) and 40 post hoc analyses using the Scheffe’ test were conducted to identify potential differences among parents, special education teachers, occupational therapists, physical therapists, and communication
specialists regarding perceived agreement within teams regarding related service decision-making roles, criteria, and authority. A summary of these ANOVA results is available in Table 4.9. Table 4.10 presents the Scheffe’ tests for significant ANOVA scores. Given the alpha level of .05, two statistically significant differences may be expected by chance -- two statistically significant differences were actually identified.

Within Classroom Group Agreement: Roles of Related Service Providers

In response to the statement, "I believe that the team members I work with feel the same as I do (as indicated above) about the roles of related service professionals serving students with severe handicaps", no statistically significant pair-wise differences were identified among groups, $F(4,307) = 1.70, p < .1510$ (see Table 4.9). Occupational therapists rated within team agreement regarding roles lowest ($M = 7.09, SD = 2.47$) while communication specialists rated it the highest ($M = 7.97, SD = 1.91$). There was general agreement that team members perceived that other believed as they did regarding roles. Levels of agreement ranged from 71% of responding parents to 89% of physical therapists.

Within Classroom Group Agreement: Criteria for Related Service Decision-Making

In response to the statement, "I believe that the team members I work with feel the same as I do (as indicated above) about the importance of these factor (referring to decision-making criteria)"; one statistically significant pair-wise difference was identified between communication specialist ($M = 7.65, SD = 1.94$) and parent groups ($M = 5.88, SD = 3.10$), $F(4,307) = 4.86, p < .0008$ (see Tables 4.9 and 4.10). There was mixed agreement that team members perceived that others
Table 4.9

One-Way Analysis of Variance Data on Perceived Agreement within Teams Regarding Roles, Criteria, Authority, and Consensus Perceptions Held by Related Service Providers, Parents, and Educators for Students with Severe Handicaps

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<tr>
<th>SOURCE</th>
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<tr>
<td>Discipline</td>
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<td>Total</td>
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<td>1773.54</td>
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</tbody>
</table>

| Within Classroom Group Agreement: Criteria Used to Make Service Delivery Decisions | | | | | |
| Discipline | 4  | 119.03 | 29.76 | 4.86 | 0.0008  |
| Error     | 307| 1878.56 | 6.12  |      |         |
| Total     | 311| 1997.59 |       |      |         |

| Within Classroom Group Agreement: Authority Perceptions for Decision Making | | | | | |
| Discipline | 4  | 75.31 | 18.83 | 2.65 | 0.0335  |
| Error     | 307| 2182.37 | 7.12  |      |         |
| Total     | 311| 2257.68 |       |      |         |

| Within Classroom Group Agreement: Perception of Actual Consensus | | | | | |
| Discipline | 4  | 126.98 | 31.74 | 3.26 | 0.0122  |
| Error     | 307| 2986.14 | 9.73  |      |         |
| Total     | 311| 3113.16 |       |      |         |
Table 4.10

Results of Scheffe’ Multiple Comparison Procedures for Perceived Agreement within Teams Regarding Criteria and Actual Consensus Perceptions Held by Related Service Providers, Parents and Educators Regarding Students with Severe Handicaps

Within Classroom Group Agreement: Criteria Used to Make Service Delivery Decisions

\[
\text{ALPHA} = 0.05 \quad \text{CONFIDENCE} = 0.95 \quad \text{DF} = 307 \quad \text{MSE} = 6.11909
\]

\[
\text{CRITICAL VALUE OF } F = 2.40 \quad F = 4.86
\]

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<td>M(SD)</td>
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<td>5.88 (3.10)</td>
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Within Classroom Group Agreement: Perception of Actual Consensus

\[
\text{ALPHA} = 0.05 \quad \text{CONFIDENCE} = 0.95 \quad \text{DF} = 307 \quad \text{MSE} = 9.72583
\]

\[
\text{CRITICAL VALUE OF } F = 2.40 \quad F = 3.26
\]

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<td>58</td>
<td>71</td>
<td>37</td>
<td>100</td>
<td>46</td>
</tr>
<tr>
<td>M(SD)</td>
<td>6.71 (3.35)</td>
<td>5.90 (3.01)</td>
<td>5.31 (3.16)</td>
<td>5.30 (3.12)</td>
<td>4.76 (2.87)</td>
</tr>
</tbody>
</table>
believed as they did regarding decision-making criteria. Fifty-five percent ($n = 32$) of parents reported varying levels of agreement with the aforementioned statement. Agreement levels were higher among other groups ranging from 65% of special education teachers to 89% of physical therapists.

**Within Classroom Group Agreement: Authority Perceptions**

In response to the statement, "I believe that the team members I work with feel the same as I do (as indicated above) about decision-making authority", no statistically significant pair-wise differences were identified among groups, $F (4,307) = 2.65$, $p < .0335$ (see Table 4.9). Parents rated within team agreement regarding decision-making authority lowest ($M = 6.09$, $SD = 3.24$) while communication specialists rated it the highest ($M = 7.54$, $SD = 2.37$). There was general low levels of agreement that team members perceived that others believed as they did regarding decision-making authority.

**Within Classroom Group Agreement: Perception of Actual Consensus**

In response to the statement, "In my current situation, decisions are made based on group consensus (including family) where no one team member has more decision-making power than another", one statistically significant pair-wise difference was identified between parents ($M = 6.71$, $SD = 3.35$) and occupational therapists ($M = 4.76$, $SD = 2.87$), $F (4,307) = 3.26$, $p < .0122$ (see Tables 4.9 and 4.10). There was mixed agreement that respondents perceived that consensus decision-making actually occurred in their situations. Sixty-two percent ($n = 36$) of parents and 55% ($n = 39$) of communication specialists reported varying levels
of agreement with the statement indicating that consensus decision-making actually took place in their situations. Meanwhile, 46% (n = 46) of special education teachers, 41% (n = 19) of occupational therapists, and 38% (n = 14) of physical therapists reported that consensus decision-making took place in their situations.

These results of this study identify similarities and differences of varying magnitude between parents, special education teachers and related service professionals. The practical significance of these findings will be discussed in Chapter 5.
CHAPTER 5
DISCUSSION

Results of the present study will be discussed and interpreted within the framework of the research questions posed in Chapter One. Limitations of the study will be presented with particular emphasis given to sampling and generalizability of findings. Secondly, results of statistical and qualitative analysis will be examined within the three categories of questions explored in the study. These categories included, (a) roles of related service providers, (b) criteria used to make related service decisions, and (c) perceived authority for making related service decisions. Next, implications for the delivery of related services to students with severe handicaps in integrated schools will be discussed. The chapter concludes with suggestions for future research.

Limitations of the Study

While the results of this study indicate a number of statistically significant and qualitative differences among parents, special education teachers, occupational therapists, physical therapists, and communication specialists regarding role, criteria, and authority variables, caution should be exercised when interpreting the results given limitations of the study design. Any data based on self-reported perceptions must be interpreted cautiously because readers do not know how these verbal reports relate to actual behavior.

Regional sampling, with all participants located in the northeastern United

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States, may limit the generalizability of these findings to other areas. In addition, representativeness of these data may be challenged due to the moderate return rate and dependence upon unknown selection variables in the distribution and return of surveys.

Distribution of questionnaires required the transfer of documents from the investigator to a school district liaison, and then to the actual subjects. Follow-up phone calls were made in May and June 1988 to six participating school districts, two urban, two suburban, and two rural districts, one each in New York and Pennsylvania. In four of the six districts, the responsibility for the distribution of survey materials to subjects had been delegated by the initial liaison to a different person in the organization. In the case of parents, an additional transfer was required since special education teachers were each given an additional questionnaire to send to a parent. This additional transfer step may partially account for the lower response rate among parents.

Response rates reported in Chapter 4 represented conservative estimates since calculations were based on the number of questionnaires sent out. Given the nature of the sampling procedures, it is impossible to know how many of the questionnaires were actually received by people in each subject group.

While definitions of the target subjects were provided to both the school liaisons via phone conversations and in writing (Appendix E), as well as to the subjects in writing (Appendix A), some surveys were excluded from analysis because they were returned by persons who were not the intended subjects of the study. These individuals included certified occupational therapy assistants (COTAs), other paraprofessional staff, and persons associated with segregated schools. Fewer
responses from nontargeted subjects may have been received if the subject
definitions had not been limited to positive examples (e.g. occupational therapists,
special education teachers), but also included negative examples (e.g. "... this
definition does not include Certified Occupational Therapy Assistants, teacher aides,
or therapy aides).

It is possible that subjects may have assigned various meanings to the
questionnaire items or differentially interpreted them since standard definitions
were not offered for all terminology. Secondly, since the same survey was
purposely sent to both parents and professionals, the readability level of the
questionnaire must be a concern. While professionals who all have obtained at least a
bachelor's degree would be expected to share basic reading abilities, the
heterogeneity of reading ability among parents is likely to be greater. A small
number of responding teachers indicated that they did not send the survey to a parent
because he or she could not read adequately to respond to the survey. It is unknown
how many questionnaires were not offered to parents for this reason or how many
parents chose not to respond because the reading level of the questionnaire was too
difficult.

Analysis of Data

The following subsections present interpretations of findings from the survey
data. The implications of these interpretations will be discussed in the subsequent
section labeled, "Implications for Service Delivery".
Summary of Descriptive Data Regarding the Delivery of Related Services

Respondents from each of the five subject groups reported that occupational therapy, physical therapy, and speech/language services continue to be delivered to students with severe handicaps primarily in a direct manner by therapists, either individually or in small groups. These data, in part, parallel the findings of Campolieto and DeRitter's (1986) survey regarding the utilization of occupational and physical therapy services in New York State. Results of the current study indicated that communication specialists were more likely than occupational or physical therapists to work with students in small groups as a primary mode of service delivery. Consultation lagged far behind direct service as a primary mode of service delivery. Communication specialists were reported to be least likely to employ indirect services as their primary service delivery approach.

Closely corresponding with the tendency to use direct service approaches, each respondent group indicated that isolated environments, such as separate areas of the classroom or other private rooms, represented the primary locations where students with severe handicaps received related services.

When asked to rank factors that were more or less influential in shaping their views regarding the provision of related services, professionals predominantly indicated that work experience was the most influential factor. Professionals varied in terms of ranking the least influential factor among those offered. Communication specialists and occupational therapists generally indicated that personal values and beliefs were the least influential, while special education teachers ranked inservice education and physical therapists ranked their formal education as the least influential factor, respectively. Conversely, parents of children with severe handicaps generally rated their personal values and beliefs as the most influential.
factor shaping their decision-making regarding related services, and rated their formal education as the least influential. Such fundamental differences between parents and professionals may have a significant impact on how people perceive service delivery issues.

Analysis of Data Regarding Roles of Related Service Providers

Two pair-wise statistical differences were identified between groups regarding the roles of "remediation" and "liaison with the medical community". The practical significance of these differences is limited by the fact that all of the mean scores represented varying degrees of agreement that the roles were important when providing educationally related services to students with severe handicaps in integrated public schools.

The statistical differences identified regarding the roles of "remediation / restoration of deficits" and "liaison between the medical community and the school team" (see Table 4.2) appear to have some logical basis. For example, the fact that physical therapists differed from parents on the role of "remediation" may be indicative that physical therapy is closely associated with the medical field. Perhaps, physical therapists are more likely to emphasize remediating or restoring skill deficits as this is consistent with a medical orientation that values "curative" outcomes.

Physical therapists differed from both parents and communication specialists on the role of "liaison with the medical community". Due to the nature of services provided by physical therapists in schools, they may be expected to maintain contacts with pediatricians, orthopedic surgeons, or other medical doctors regarding the
management of specialized equipment (e. g. wheelchairs, braces, orthoses, splints), or school implications of physical disabilities. Communication specialists are expected to contact physicians less frequently, thus potentially explaining their lower rating of this role. Parents scored this role the lowest as a responsibility of related service providers compared to other groups and lowest compared to all other roles. It is possible that parents perceived the "liaison" role as less crucial than some of the other roles. Additionally, some parents offered written comments indicating that they perceived themselves to be the primary liaison with their child's physicians.

Despite apparently logical reasons for statistically significant differences between groups regarding "remediation" and "liaison with the medical community", these findings must be viewed cautiously. As stated in Chapter 4, given the alpha level of .05 applied to 100 pair-wise post hoc comparisons, one would expect to find five statistically significant differences merely by chance. Therefore, it is conceivable that the three pair-wise differences depicted in Table 4.2 were based on chance probability.

Rather than these data highlighting differences among groups regarding roles of occupational therapists, physical therapists, and communication specialists, a more plausible interpretation is that the rankings depicted in Table 4.3 represents an initial validation that parents, special education teachers, occupational therapists, physical therapists, and communication specialists substantively agreed that the listed roles of related service providers are important to varying degrees.

These ranking may be conceptualized by categorizing the agreed upon roles into three levels. Each respondent group strongly rated, (a) developing adaptations...
and/or equipment to encourage functional participation, and (b) facilitation of functional skills and activities as the two most important roles served by related service personnel within the context of assessment, planning, implementation, and evaluation. Both of these roles focus on the outcomes of educational and related service efforts being participation through adaptation and engaging in functional activities. Therefore, it is suggested that the highest level of roles be referred to as "Outcome Roles" and include (a) developing adaptations and/or equipment to encourage functional participation, and (b) facilitation of functional skills and activities.

The second level of roles may be referred to as "Enabling Roles" because they represent roles in which related service personnel engage in order to assist students in attaining the outcomes mentioned in the highest role level. Developing adaptations and/or equipment to encourage functional participation may be considered both an outcome (e.g. equipment to access to participation) as well as an enabling role. Additional enabling roles include: (a) reciprocal consultation with colleagues, (b) removing or modifying barriers to participation, (c) prevention of regression, deformity, and/or pain, and (d) being a resource and support to families.

The third level includes roles that become more or less prominent for individual students based on whether they are possible or needed. These "Discretionary Roles" include: (a) remediation / restoration of identified deficits, (b) promoting normal developmental sequences, (c) serving as an advocate for the student, and (d) being a liaison between the medical community and the school team. For example, most parents and professionals would likely be supportive of remediative, restorative, or normal developmental approaches if they were perceived as vehicles leading toward
participation and functional activities embodied in Outcome Roles. Given the population of persons with severe handicaps, it seems evident that survey respondents believed adaptation and facilitation techniques were higher probability routes to success than these Discretionary Roles. Similarly, roles of advocacy and liaison with physicians may be more or less prominent as a function of the related service provider depending on factors such as the characteristics of the learner, characteristics of the school district, and the roles served by the family or other team members. For example, if the parents are active and effective liaisons between nonschool medical personnel and the school team, it may be less necessary for the related service provider to engage in this role.

Analysis of Data Regarding Criteria Used in Making Related Service Decisions

Professionals and families continuously are faced with opportunities to make decisions such as: (a) Is the student eligible to receive related services? (b) What type of related services are appropriate to provide? (c) How frequently should the related service be provided? and/or (d) Is the related service most appropriately provided directly, indirectly, or in some combination by the specialist and other personnel?

Subject ratings regarding decision-making criteria depicted overall lower mean scores and greater disparity among respondents than was present regarding roles. There were statistically significant differences among groups on three variables: (a) chronological age, (b) history and prognosis for remediation, and (c) level of intelligence. Certain groups were biased toward younger ages, more favorable history and prognosis, and higher levels of intelligence. The differences identified between groups were similar in two respects. First, related service professionals
favored these biases more strongly than either special education teachers or parents (See Table 4.5), who either favored them less strongly or tended to disagree with the direction of the bias. These biases represent basic value differences between the groups in achieving team functioning. It will be difficult for a group of individuals representing diverse disciplines to reach a consensus if members approach the decision-making process from philosophical positions that may be antithetical.

It is interesting to note that no differences were identified among related service disciplines on any role, criteria, or authority variables; instead, the differences that occurred were between professionals in the related service disciplines, teachers, and parents. This absence of differences within the three related service disciplines suggest that these allied health professions share certain common philosophical orientations. The differences between school-based professionals and parents may suggest that approaches taken by professionals continue to be inadequate in their responsiveness to consumers. Have human service professionals been socialized to serve their profession or organization first and the client second?

Secondly, the identified differences regarding criteria related to variables that had significance only when applied to "Discretionary Roles". For example, the criteria of young chronological age, and favorable history and prognosis for remediation might be considerations in deciding whether to pursue Discretionary Roles such as promoting normal developmental sequences or remediating identified deficits. Conversely, these same criteria have little or no impact when considering Outcome or Enabling Roles such as making adaptations, facilitating functional skills, providing reciprocal consultation with colleagues, removing or modifying barriers to participation, or being a resource and support to families.
Additionally, the varying emphasis placed on "level of intelligence" by the different groups may also be an indicator of professional socialization. For example, certain decision models for instituting augmentative communication systems for students with disabilities within the communication sciences suggest that children must be functioning at a certain cognitive level in order for the approach to be viable (Shane, 1980). This may account, in part, for the greater emphasis placed on intelligence by communication specialists in comparison to special education teachers and parents. Based upon their research, Reichle and Keogh (1986) have more recently proposed a communication intervention approach that does not require specific cognitive levels as prerequisites to the initiation of augmentative communication instruction. This recent work may not yet have had an impact upon general training of speech/language pathologists. Occupational and physical therapists were split in their agreement or disagreement regarding the use of intelligence as an important criteria. Parents and special education teachers predominantly disagreed with the bias in favor of higher intelligence as an important decision-making criteria.

The stronger emphasis on criteria like young chronological age, history and prognosis for remediation, and level of intelligence by related service professionals may be an indicator that a disproportionate emphasis has been placed on Discretionary Roles such as promoting normal developmental sequences and remediating identified deficits which are closely associated with traditional medical models. This hypothesis may be further supported by the descriptive data which indicated that related services are still primarily provided in direct modes and in physically isolated environments. Such service delivery models are consistent with
a traditional focus on developmental and remediatve approaches. Conversely, several of the Outcome and Enabling Roles are more logically linked to indirect service delivery. For example, making adaptations, removal or modification of barriers, reciprocal consultation, and support to families may be considered primarily indirect services because they can be accomplished through others without continuous interaction between the learner and the related service specialist. The remainder of the Outcome and Enabling Roles may logically be pursued in either or both direct and indirect modes.

In essence, the data suggest that while therapists, teachers, and parents reported that indirect roles often are the most important for related service personnel to provide to students with severe handicaps, current practice in terms of isolated and direct service delivery do not match these stated positions. This lack of consistency between stated beliefs and reported behavior was also described by Brady and Cunningham (1985) in their ethnography of normalization outcomes. They stressed the importance of identifying discrepancies between beliefs and behaviors through ongoing formal and informal evaluation methods, as well as the application of the information gathered to improve programmatic options for persons with handicapping conditions.

While a number of strong differences appears to be evident among groups regarding criteria used to make related service delivery decisions, the rankings displayed in Table 4.6 also represent considerable agreement among parents, special education teachers, occupational therapists, physical therapists, and communication specialists on three levels of decision-making criteria.

The highest level of criteria, "Essential Criteria", are those that should be
considered in making all related service decisions. These criteria include: (a) that
the related service is required to assist the child in benefitting from his or her
educational program, and (b) consideration of what overlap is present or absent in
terms of services available to the student through existing school services or those to
be subsequently developed. As indicated on Table 4.6, there was a high level of
agreement that considering the impact on the educational program and the overlap
with other services were important criteria. Both of these criteria are embedded in
the definition and litigative history of related services (Code of Federal Regulations,
1987; EHCA, 1975; Board of Education of the Hendrick Hudson Central School

The second level is referred to as "Discretionary Criteria" because these criteria
are primarily useful when applied to Discretionary Roles as discussed in the
previous section. Discretionary Criteria include: (a) age, (b) severity of
impairment, and (c) history and prognosis for remediation. If such criteria were
applied to Discretionary Roles they would represent only a component of the
decision-making process. Use of such criteria in isolation from the Essential
Criteria would be ineffective and potentially discriminatory against certain students.

The final level of criteria, while minimally represented in the literature
(Effgen, 1984), are suspected to have rather widespread applications in the field.
These "Inappropriate Criteria" include: (a) level of intelligence, and (b) probability
of parental involvement. Such criteria can be challenged on ethical and legal
grounds: They may promote discrimination against persons based on (a) the
perceived intelligence of an individual, and/or (b) the socio-economic, cultural, or
personal traits of students or their parents. Each respondent group rated these as
the lowest among the listed criteria (See Table 4.6).
While the aforementioned criteria have been applied in various ways and to varying extents in the field, it remains clear from both the professional literature and the survey data that the selection of criteria for decision-making continues to represent one of the most challenging barriers to effective related service decision-making. To date, there are no adequate related decision-making processes that are widely available to, or used by, educational teams serving students with disabilities. Additionally, no consensus has been reached regarding how related service decisions should be made. This absence of a framework in which to apply decision-making criteria has exacerbated the problems of related service decision-making, resulting in outcomes such as, (a) under-service, (b) over-service, (d) services that do not match student or family needs, (d) perceptions by each of the various team members that their contributions are ignored or not valued, and (e) conflicts among and between professionals and consumers.

Analysis of Data Regarding Perceptions of Decision-Making Authority

At the heart of any group effort is a common understanding and agreement regarding the nature of authority within the group. The results of this study strongly indicated significant differences between related service professionals, special education teachers, and parents regarding authority for related service decision-making. All three related service disciplines' mean scores strongly indicated that while they believed they had a responsibility to share their recommendations with other team members, including parents, they also reported that they should retain final decision authority regarding their own discipline.

Special education teachers were split in their opinion regarding professional
retention of authority. This split placed special education teachers in a position that was significantly different from both the related service professionals as well as parents. Parents predominantly reported that they disagreed with professional retention of authority.

As an internal check on the validity of subject responses, a statement was offered (4.02 in Appendix B) that was designed to be the antithesis of professionals retaining decision-making authority. This statement asked respondents to indicate whether they agreed that specialists and team members, including the family, should make recommendations based on group consensus where no one team member has more decision-making power than another. As would be expected, the pattern of responses to these two items was inverse (See Table 4.8). For example, professional retention of authority was most strongly supported by physical therapists, while they rated consensus decision-making lowest among all groups. Conversely, parents scored professional retention of authority lowest and rated consensus decision-making highest compared to all respondent groups.

While the inverse pattern between professional retention of authority and consensus decision-making remained consistent for all respondent groups, the significance of the differences was smaller in reference to the consensus variable. This occurred because a number of subjects rated both variables high on the Likert scale. This apparent contradiction in responses may be explained in part by subjects intertwining what currently exists with what they would prefer to have exist.

One interpretation of the data is that subjects who rated these two variables in an inverse fashion strongly supported one approach or the other. For example, a subject who responded that professionals should retain authority and also responded
that he or she was not in agreement with consensus decision-making has made his or her position quite clear. Alternately, subjects who rated professional retention of authority and consensus decision-making both high on the agreement scale seem to be contradicting themselves. Such subjects may have been expressing that currently professionals do retain authority, but that consensus decision-making is preferable.

The perception that reaching consensus is not a prominent approach to related service decision-making was depicted in Table 4.10. It indicated that as groups, parents and communication specialists indicated low levels of agreement that consensus decision-making occurred in their current situations. Physical therapists, special education teachers, and occupational therapists generally indicated that decisions were not made based on consensus. A second potential explanation for apparent contradictory responses is that professionals simply have ambivalent feelings about this issue of consensus versus professional decision authority.

In either case, it is clear that a significant number of special education teachers and allied health professionals support a model of related service decision-making that is based on the "professional team", where each discipline makes decisions in isolation of the others based on the claim of expertise and appropriate control within their field. Such groups typically share information with each other and agree to pursue potentially separate and disjointed courses of action -- this approach most closely resembles the interdisciplinary model described in Chapter 2. In this model, the professionals make decisions and then inform parents and other team members of their decisions. Survey results suggest that there are large numbers of parents and special education teachers who are not satisfied with this traditional method of
decision-making, as well as a smaller but substantial number of related service personnel.

While it is suspected that some individuals want to have authority over decision-making simply for purposes of control, others pursue consensus decision-making on logical grounds. The logic underlying consensus decision-making was, in part, expressed by each respondent group when they agreed that an important criterion to consider is the existence or absence of overlap between disciplines. By rating this criterion so highly, respondents support the notion that making appropriate decisions requires the consideration and application of input from all team members. Yet, the responses of professionals regarding the criteria of overlap and the retention of authority appear to be internally inconsistent. Simply sharing isolated decisions, while affording opportunities for meaningful coordination, does not preclude the possibility that professionals will agree to pursue separate, disjointed, and potentially conflicting approaches. Only through exploring the existence or absence of overlap between disciplines within the context of a unified set of goals for a student and consensus decision-making can effective coordination of services be achieved.

Narrative comments indicated that related service personnel, special education teachers, and parents not only have concerns with each other regarding decision-making authority, but also expressed dissatisfaction with administrative control over decision-making. Concerns were voiced when parents or professionals perceived that administrative decision authority was imposed without adequate knowledge of students or for noneducational reasons such as convenience or financial savings at the expense of students.
The area of greatest conflict in perceptions regarding decision-making authority appears to be between professionals and parents. This observation highlights the most potentially difficult issue which groups must face and overcome if they are to function as teams. At the most basic level, decision-making authority represents an issue of control and power. It is currently perceived that some people have that power, while others want it. Interestingly, even those perceived to have decision-making control, such as related service professionals, suggest that they hold little power compared to administrative authorities. The issue of decision-making authority is emotionally charged because it challenges individuals on multiple levels, professionally and personally. Groups of adults who serve the same children will need to reach decisions that both satisfy the needs of the student as well as the needs of the adults involved if they hope to support effective teamwork (Blechert, Christiansen, & Kari, 1987).

Implications for Service Delivery

The introductory chapter of this study proposed that identification of similarities and differences among related service personnel, special education teachers, and parents regarding related service roles, criteria, and authority perceptions could generate data that might be translated and applied in multiple ways both by building on similarities and overcoming differences. Broadly, areas of potential impact included: (a) individual team-level strategies, (b) inservice education and staff development, (c) administrative policies and guidelines, and (d) modifications to university preparation of professionals. The following subsections contain potential
implications relative to each of these areas that can be drawn from the similarities and differences identified in the data. The sequence of their presentation is not meant to suggest order of priority. It is recommended that simultaneous consideration be given to pursuits in each area.

**Modifications to University Preparation of Professionals**

A minor, yet interesting finding of the study was that few respondents identified their formal education as the most influential factor shaping their views regarding the provision of related services for students with severe handicaps. The perception that preservice education was significantly less influential than the other listed factors must raise concerns among higher education curriculum designers and instructors. Similar results on all variables among the allied health professionals with corresponding differences between allied health professionals, special educators, and parents may suggest a number of alternatives designed to improve related service decision-making through changes in preservice education.

First, university preparation programs require modifications if they are to prepare professionals for the requirements of the workplace. Clearly, if professionals are expected to perform major portions of their work as team members, they should begin to learn how to do this at the preservice level. Currently, training programs emphasize primarily direct service skills and may even ignore collaborative or indirect approaches. Therefore, allied health professionals interested in pediatrics should receive preparation in the provision of educationally related services jointly with their special and regular education counterparts. Professionals will require preparation beyond clinical skills in areas
such as teamwork, collaboration, and consultation. While it is suggested that colleges and universities that offer majors in these various fields coordinate their coursework, it may also assist university students to be taught in a cooperative fashion where instructors from various disciplines model teamwork and collaboration through interdependent design and instruction of their courses. Field-based experiences should incorporate opportunities for university students to practice and receive feedback on both their clinical and collaborative skills. This added emphasis on collaborative skills is based on the assumption that even high quality clinical skills will lose some value if they are not deployed within the framework of a coordinated plan that synthesizes the input of other disciplines and consumers.

A major finding of the study was that professionals and parents differed significantly on a number of major variables, most notably on various criteria that might be used when making related service decisions, and disagreement regarding who should retain the authority for related service decision-making. The strong responses, particularly from allied health professionals, regarding their perception that professionals should retain decision authority may represent artificial barriers that have been inadvertently developed through the socialization process of receiving a professional degree. University personnel must remain vigilant so that pride in one's own discipline does not deteriorate to expert chauvinism. Such chauvinism presents an obstacle to collaboration with colleagues and consumers by interfering with an ongoing reflective practice designed to tap the individual and collective creativity and effectiveness of professionals (Schon, 1983). Training experiences that include opportunities for students to interact with families and hear concerns from the family perspective may assist in promoting more constructive
relationships between professionals and consumers.

Parents who responded to the survey were acutely aware that disagreeing with professionals, represented a challenge to their discipline, their education, and their experience. Parents expressed apprehension to challenging professionals, while at the same time expressing the belief that they had much to offer within the decision-making process. If human services are to truly serve the needs of consumers, then professionals must be increasingly socialized to assume roles and postures that allow for constructive challenges by both colleagues and consumers. The need to accept and respond to these challenges in constructive ways, as well as to continuously self-evaluate, may provide valuable opportunities for individuals to develop and for fields of study and service to grow. Therefore, it is suggested that preservice training incorporate both aspects of sensitization to the needs of families as well as the fostering of characteristics that encourage critical self-evaluation. For example, students could be video-taped conducting parent conferences. Performance competencies such as active listening, facilitation of parent input, use of jargon-free language, and individualization among families could then be evaluated by instructors as well as self-evaluated by the student.

Inservice and Staff Development

Descriptive data collected from the survey indicated that each professional group rated their work experience as the most influential factor shaping their views regarding the provision of related services. At the same time, special education teachers indicated that inservice education was the least influential factor among those offered. These data support the contention that professionals may be
significantly influenced by what occurs at work.

Unfortunately, many professionals who have had little preservice, inservice, or ongoing feedback regarding related service decision-making may spend years learning and practicing skills that will interfere with collaboration. Additionally, based on the number of professionals, reporting "11 or more years of experience", it is conceivable that many professionals have not had opportunities for preservice training that emphasized teamwork to meet the needs of students with severe handicaps in integrated settings, since many students with severe handicaps were served in segregated schools during that time period marked by the mid 1970's and before.

Data gathered regarding the similarities and differences between groups regarding decision-making roles, criteria, and authority perceptions may be used to plan an ongoing staff development series. If one accepts Morgan and Bray's (1978) assertion that group functioning is a developmental process, then exploration of the issues addressed in this study could serve as a beginning point to examine and compare perspectives among related service personnel, teachers, and parents. Initial exploration of shared values and belief systems allows opportunities for individuals to attach personal meaning to these issues and potentially to the process of change (Fullan, 1982). Inservice staff development, paired with supportive supervision could provide a mechanism for problem-solving individualized solutions to issues that face school personnel and families.

Administrative Policies and Guidelines

Subjects from each respondent group criticized the nature of involvement offered
by school administrators and blamed them for ignoring their input. Such comments point out that school administrators can exert substantial influence on day-to-day decision-making and practice. While respondents complained that administrators used their power in ways they perceived as inappropriate, this same vested authority could be used for positive purposes by applying some of the information gathered from this study.

Administrators could use the information regarding inappropriate criteria to establish policies designed to ensure equity by eliminating the use of criteria known to embody legal or ethical flaws. Additional guidelines could be established with the input of staff and consumers that incorporate the foundational similarities present among the respondent groups. This might include a listing of various roles appropriately served by related service personnel with accompanying descriptions.

In part, the descriptions could code roles in terms of the mode of service delivery that most closely matches it. For example, reciprocal consultation with colleagues, development of adaptations, removal of barriers to participation, and support to families all represent primarily indirect services. Facilitation of functional skills and prevention of regression, deformity, or pain logically may be pursued in either direct or indirect modes. Once these basic frameworks have been set in place, administrators could use such guidelines in conjunction with other indicators of promising educational practices to evaluate and upgrade services by comparing the stated policies and guidelines with actual practices.

**Individual Team Level Strategies**

While team members may find it helpful to better understand group similarities
and differences between various constituencies, often their most immediate motivation pertains to the specific groups in which they work. Related service issues raised in this study could be used to assist in identifying similarities and differences within individual groups. Deliberation regarding such typically undisussed topics could assist newly forming teams in avoiding obstacles and assist existing teams in identifying obstacles to be overcome.

Discussions could be used to generate agreed upon approaches to employing roles, criteria, and authority within a decision-making process. For example, once a team identified roles appropriately served by various disciplines, the team could first compare those roles specifically to an individual student's annual goals and general curriculum areas to determine if those roles need to be served in order for the student to benefit from his or her instruction. Professionals from each discipline and parents could express their individual opinions from their unique perspectives. At this point such opinions would not be viewed as recommendations, rather, judgment would be deferred so that professionals and parents could compare the areas of overlap and absence between their individual opinions in an attempt to coordinate the pupil's program. Final decisions could then be made by consensus after considering the input of all team members.

Decisions regarding service delivery could be facilitated by matching the roles needed to assist the student benefit from instruction with the appropriate mode of delivery. In each situation, decisions would be based on a collective "best guess". "Correctness" of the best guess could be evaluated based on the educational validity of learner outcomes (Voeltz & Evans, 1983; Evans & Meyer, 1987). Voeltz and Evans (1983) suggest that educational validity is characterized by (a) behavior change that is a function of intervention; (b) intervention that occurs as specified in the
intervention plan; (c) behavior changes that are meaningful to the learner; and (d) learner changes that are valued by other people who are part of the learner’s natural environments. In the true team model, the ultimate success or failure of a consensus decisions are evidenced by the absence or presence of educational validity and are shared by all team members.

Since the data indicated that decision-making authority and consensus building are problematic for many teams, cooperative learning procedures could be employed within meetings to establish an ongoing feedback mechanism to evaluate outcomes and group process (Johnson, Johnson, & Holubec, 1986; Thousand et al., 1986). Where a mutually agreed upon decision-making process is absent, there will be fertile ground for power struggles that have far less potential for meeting learner needs.

In summary, for groups to consciously perform effectively as teams, it is important for members to share a common understanding regarding the roles, criteria, and authority used to make related service decisions. Congruence must be present between the roles, criteria, authority perceptions, and actual practice in order for the decision process to be effective in meeting student needs. While, the noted areas of impact (e.g. preservice, inservice, and administration) are important, the individual team level is ultimately the most important because it is the decisions made at this level that will most directly effect students and families. While team functioning may be enhanced by preservice, inservice, and administrative advancements, such supports do not ensure effective team decision-making regarding related services. Conversely, individual teams have the capability to develop exemplary decision-making in the absence of the aforementioned supports. This point is raised to encourage parents and professionals to be proactive in their
efforts to improve related service delivery for students with handicaps at their individual team levels regardless of the presence or absence of other supports.

Suggestions for Future Research

Related service decision-making has received limited attention in the professional literature, despite the fact that such decisions are made routinely for nearly every student identified as having a severe handicap. It is possible that our current practices regarding related service delivery decision-making have become so commonplace that we have neglected to carefully study how such decisions are made, how we might improve that decision-making, and what impact such decisions have on students, families, and staff. As the nature of service delivery changes to include increasing numbers of students with severe handicaps in regular schools and classes, issues regarding the delivery of related services will undoubtedly arise with increasing frequency. In an effort to address those related service issues, the following recommendations for future research are offered:

1. Due to the sparsity of research data on related service decision-making, foundational descriptive research is needed so that the phenomena may be better understood. Such descriptive research could be conducted using multiple research paradigms.

2. Qualitative research methods may be particularly useful in helping to understand how various constituencies perceive related issues. Qualitative methods could expand the representative nature of the research data by studying parents, including those who are unable to respond to written
surveys because of reading difficulties. Document analysis, interviews, and observational techniques could also be particularly useful in exploring congruence between stated beliefs and actual behavior.

3. Research on the efficacy and outcomes of transdisciplinary preservice training of professionals should be assistive to university personnel as they attempt to design curricular and instructional models that will appropriately prepare professionals for the demands of the collaborative teamwork in integrated settings.

4. Given the nature of related service decision-making, action research offers practitioners with field-based opportunities to develop and evaluate needed related service decision-making models. There is a need to develop and validate practical decision models.

5. As students with severe handicaps increasingly gain access to regular education classrooms as their primary educational placement, research will need to explore approaches to providing related services that both assist individual students in benefitting from instruction and which are consistent with regular education classroom routines.

6. Research should also focus on evaluating the impact and efficacy of decision-making on students, families, and staff.

Additionally, replication of the current study in different geographic locations and with greater numbers of subjects from each respondent group may assist in verifying whether the results of this study are representative of national trends.
Conclusion

The present study provided initial validation that parents, special education teachers, and related service personnel share a common set of perceptions regarding priority roles to be engaged in by occupational therapists, physical therapists, and communication specialists serving students with severe handicaps in integrated public schools. Most notably, (a) developing adaptations and/or equipment to encourage functional participation, and (b) facilitation of functional skills, were identified as the two highest priority roles to be served by related service professionals.

In reference to criteria used to make related service decisions, parents and professionals shared the perception that the anticipated impact of a related service on a student's educational program and consideration of potential overlap or gaps in services were primary criteria that were important to consider when making related service decisions. Conversely, related service professionals and parents disagreed regarding the importance of related service decision-making criteria such as: (a) chronological age, (b) history and prognosis for remediation, and (c) level of intelligence. These differences may be indicative of basic differences in values, socialization, and priorities.

Perhaps the most prominent difference identified in the study indicated that related service professionals, special education teachers, and parents differ quite dramatically regarding who they believe should retain authority over related service decisions. Trends in the data indicated that professionals believed they should retain authority regarding their own discipline, while parents tended to disagree with
professional control in favor of consensus decision-making.

The results of this study offer a beginning point to better understand the phenomena that surround related service decision-making roles, criteria, and decision authority perceptions. Through this study as well as future descriptive and applied research efforts, information can be generated to assist in the development of effective related service decision-making approaches. Development of such approaches will be necessary if professionals hope to provide services that truly meet current student needs as well as assist students succeed in future integrated environments.
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Dear Colleague:

The enclosed survey is part of a study being conducted to learn more about how parents, special education teachers, occupational therapists, physical therapists, and communication specialists make decisions about the provision of "related services" for students with severe handicapping conditions in regular public schools. Hopefully, the results of this study will shed some light on where team members share a common framework and where they differ. This information holds the potential to influence preservice and inservice preparation as well as ongoing team interactions in ways that could improve the quality of services for students with severe handicaps.

If you do decide to participate in this study, definitions of "students with severe handicaps", "related services", and "specialists" have been provided on the reverse side of this letter in an attempt to clarify the questionnaire. Please take about 10 to 15 minutes to complete this survey. All responses will be confidential. When completed, please return the survey in the self-addressed, stamped envelope, at your earliest convenience. THANK YOU!

NOTE: IF YOU ARE A SPECIAL EDUCATION TEACHER YOU HAVE BEEN PROVIDED WITH TWO COPIES OF THE SURVEY. ONE IS FOR YOU AND THE OTHER IS FOR A PARENT OF STUDENT IN YOUR CLASS. THE PARENT MUST BE 21 YEARS OF AGE OR OLDER, HAVE A CHILD WITH A SEVERE HANDICAP, AND THEIR CHILD MUST RECEIVE AT LEAST TWO OF THE THREE MOST COMMON RELATED SERVICES (Occupational Therapy, Physical Therapy, and Speech/Language Therapy). PLEASE SEND THE SURVEY HOME WITH THE STUDENT AND ENCOURAGE THE PARENT TO RESPOND TO THE SURVEY AND RETURN IT DIRECTLY TO ME USING THE ENCLOSED SELF-ADDRESSED STAMPED ENVELOPE.

Sincerely,

Michael F. Giangreco

Michael F. Giangreco
Syracuse University
Definitions of Terms

a) **Students with Severe Handicaps**: Refers to approximately the lowest intellectually functioning 1% of the school-age population. This 1% range includes students who have been ascribed labels such as psychotic, autistic, moderately/severely/profoundly retarded, trainable level retarded, physically handicapped, multiply handicapped, and deaf/blind. Certainly, a student can be ascribed one or more of these labels and still not be referred to as severely handicapped for the purpose here, s/he may not currently be functioning intellectually within the lowest 1% of a particular age.


b) **Related service**: refers to the definition cited in P.L. 94–142 Section 4 (17): "The term 'related services' means transportation, and such developmental, corrective, and other supportive services (including speech pathology and audiology, psychological services, physical and occupational therapy, recreation, and medical and counseling services, except that medical services shall be for diagnostic and evaluation purposes only) as may be required to assist a handicapped child to benefit from special education, and includes the early identification and assessment of handicapping conditions in children."

c) **Specialists**: refers to occupational therapists, physical therapists, and communication specialists (e.g. speech/language pathologists, teachers of the speech and hearing handicapped, speech language clinicians, etc.). Specialists should be duly certified and will have a minimum of a bachelors degree in their respective field. Such specialists are eligible to participate in this study if they currently work with, or within the past calendar year have worked with, students with severe handicaps as defined above.
APPENDIX B
RELATED SERVICES SURVEY REGARDING STUDENTS WITH SEVERE HANDICAPS IN PUBLIC SCHOOLS

NOTE: Space is available at the end of the survey for you to clarify any items of your choosing. Therefore, please circle only one response per item, unless otherwise noted. Thank you!

1.00 BACKGROUND INFORMATION: The purpose of this section is to determine the background experiences or attributes that may affect decision-making processes about the provision of related services for students with severe handicaps in public schools, such as eligibility for related services, frequency of service, and type (direct by therapist or consultation).

1.01 What is your primary relationship to persons with severe handicaps? A) Parent  B) Sp. Ed. Teacher  C) OTR  D) RPT  E) Communication Specialist

1.02 Currently, in what type of school setting are you both involved? A) Regular Schools attended by students who have handicaps and those who are nonhandicapped  B) Center-based schools serving children with handicaps only, (including separate sections of schools such as a wing at an Occupational Education Center)  C) Both A and B

1.03 How would you describe the location of the school? A) Urban  B) Rural  C) Suburban

1.04 How many years of experience do you have with persons who have severe handicaps? A) 2 or less  B) 3 to 5  C) 6 to 10  D) 11 or more

1.05 What is the primary way occupational and physical therapy are delivered by your team(s) for students with severe handicaps? A) Individual – Direct by therapist  B) Groups – Direct by therapist  C) Indirect (Consults by therapist)

1.06 What is the primary way speech and language therapy is delivered by your team(s) for students with severe handicaps? A) Individual – Direct by therapist  B) Groups – Direct by therapist  C) Indirect (Consults by therapist)

1.07 Where is the primary location that related services are delivered to students with severe handicaps by your team(s)? A) Separate area of classroom or other private room or area  B) Classroom, in class activities  C) Community  D) Home

1.08 Please rank the following factors from the most to least influential in shaping your views regarding the provision of related service for students with severe handicaps: A) Formal Education  B) Ongoing Education (in service)  C) Personal Values and Beliefs  D) Work Experiences

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2.00 ROLE: The purpose of this section is to determine how you perceive the role of occupational therapists, physical therapists, and communication specialists working as related service providers with students who experience severe handicaps in public schools.

Please indicate your level of agreement with the following statements regarding potential roles of occupational therapists, physical therapists, and communication specialists, by circling a number on the scale from 1 to 10; where 1 represents strong disagreement and 10 represents strong agreement.

Strongly Disagree Strongly Agree

Within the context of assessment, planning, implementation, and evaluation, an important role for specialists serving students with severe handicaps in public schools is:

2.01 Prevention of regression, deformity, and/or pain..............................................1 2 3 4 5 6 7 8 9 10
2.02 Promoting normal developmental sequences.........................................................1 2 3 4 5 6 7 8 9 10
2.03 Remediation/Restoration of identified deficits..........................................................1 2 3 4 5 6 7 8 9 10
2.04 Developing adaptations and/or equipment to encourage functional participation..........................................................1 2 3 4 5 6 7 8 9 10
2.05 Completing paperwork (e.g. IEPs, progress reports, test reports)..........................1 2 3 4 5 6 7 8 9 10
2.06 Facilitation of functional skills and activities..............................................................1 2 3 4 5 6 7 8 9 10
2.07 Reciprocal consultation with colleagues......................................................................1 2 3 4 5 6 7 8 9 10
2.08 Removing or modifying barriers to participation.........................................................1 2 3 4 5 6 7 8 9 10
2.09 Being a resource and support to families....................................................................1 2 3 4 5 6 7 8 9 10
2.10 Being a liaison between the medical community and the school team........................1 2 3 4 5 6 7 8 9 10
2.11 Serving as an advocate for the student........................................................................1 2 3 4 5 6 7 8 9 10
2.12 I believe that the team members I work with feel the same as I do (as indicated above) about the roles of related service professionals serving students with severe handicaps.................................................................1 2 3 4 5 6 7 8 9 10
3.00 CRITERIA RATINGS: The purpose of this section is to determine your perceptions regarding the relative importance of factors which have been used by teams to make decisions regarding the provision of related services to students with severe handicaps in schools.

Please indicate your level of agreement with the following statements by circling a number on the scale from 1 to 10; where 1 represents strong disagreement and 10 represents strong agreement.

When making decisions about the provision of related services for a student with a severe handicap, such as eligibility for related services, frequency of service, and type (direct by therapist or consultation):

3.01 The younger the age, the more important it is for the student to receive services ................................................................. 1 2 3 4 5 6 7 8 9 10

3.02 The more favorable the history and prognosis for remediation, the more important it is for the student to receive services ............ 1 2 3 4 5 6 7 8 9 10

3.03 The higher the level of intelligence, the more important it is for the student to receive services ................................................. 1 2 3 4 5 6 7 8 9 10

3.04 The more severe the impairment, the more important it is for the student to receive services ................................................... 1 2 3 4 5 6 7 8 9 10

3.05 The more the related service is required in order for the student to benefit from his/her educational program, as defined by the IEP goals, general curriculum, and management needs related to instruction, the more important it is for the student to receive services ................................................................. 1 2 3 4 5 6 7 8 9 10

3.06 The greater the probability of parental involvement, the more important it is for the student to receive services ......................... 1 2 3 4 5 6 7 8 9 10

3.07 The more a specialist's skills are needed for student support but are not possessed by other team members (absence of skill overlap), the more important it is for the student to receive the services of that particular specialist ................................................................. 1 2 3 4 5 6 7 8 9 10

3.08 I believe the team members I work with feel the same as I do (as indicated above) about the importance of these factors........... 1 2 3 4 5 6 7 8 9 10
4.00 PERSONS MAKING RELATED SERVICES RECOMMENDATIONS: The purpose of this section is to determine your perceptions regarding who should be making related service recommendations.

Please rate your level of agreement with the following statements by circling a number on the scale from 1 to 10; where 1 represents strong disagreement and 10 represents strong agreement.

<table>
<thead>
<tr>
<th>Strongly Disagree</th>
<th>Strongly Agree</th>
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4.01 Specialists should share their recommendations with the team (including family) for their consideration, but specialists should retain final decisions regarding their own disciplines...........1 2 3 4 5 6 7 8 9 10

4.02 Specialists and team members (including family) should make recommendations based on group consensus where no one team member has more decision-making power than another....................1 2 3 4 5 6 7 8 9 10

4.03 In my current situation, decisions are made based on group consensus (including family) where no one team member has more decision-making power than another..............................................1 2 3 4 5 6 7 8 9 10

4.04 I believe that the team members I work with feel the same as I do (as indicated above) about decision-making authority.............1 2 3 4 5 6 7 8 9 10

5.00 ADDITIONAL COMMENTS: The purpose of this section of the survey is to provide an open forum. If you would like to make any comments that you believe would help us to better understand how people make decisions about who gets related services in public schools, how much, what type, etc. you are invited to note them here or attach them to this survey.
APPENDIX C

January 13, 1988

Ms. Director of Special Education
Integrated School District
Box 100
Anytown, USA

Dear Ms. Director:

Greetings. As a follow-up to our recent conversation, thank you for your willingness to participate in the survey being conducted to collect information regarding related services (e.g., OT, PT, Speech/Language) for students with severe handicaps in regular public schools. In its current form, the survey includes four sections: Background Information (8 questions), Role Perceptions (12 questions), Decision-Making Criteria (8 questions), and Decision Authority (4 questions). An optional "Comments" section is also available. It takes 10-15 minutes to complete the survey. The study is designed to generate descriptive data; it is not designed to test specific predetermined hypotheses. It is my hope that this study will help us to better understand certain aspects of service delivery and begin to set a direction for addressing some of the issues which currently confront us regarding related services.

It is my intention to forward you a package of materials in January or February 1988. I will include specific directions for the dissemination of the survey. Each person who will be asked to fill out the survey will receive: a) a cover letter explaining the study, b) definitions of terms (e.g., who do we mean when we say "severely handicapped"), c) the survey instrument, and d) a self-addressed stamped envelope. As we discussed, your only responsibility will be to distribute the surveys to the appropriate individuals associated with your system and to encourage them to respond to the survey. These individuals include special education teachers, occupational therapists, physical therapists, communication specialists, and parents who are involved with students who have "severe handicaps" (moderate, severe, or profound mental retardation). Professionals with whom you contract for services, if any, should be included. It is vital that we reach as many therapists as possible since there are relatively so few. Of course, participation is voluntary and all responses will be anonymous.

Syracuse University procedures require me to obtain advance written confirm of your willingness to participate in this study. I would greatly appreciate it if you would send me a brief (one or two sentence) letter at your earliest convenience indicating your willingness to distribute the survey within your school system. Enclosed you will find a brief form which I would ask you to fill out and return along with your letter of participation so that I may send you the proper number of surveys. A self-addressed stamped envelope is enclosed for your convenience. Again thank you for supporting this effort. I look forward to the representation provided through your system. If you have any questions feel free to call me at the office (315) 253-0361 or home (607) 272-6041.

Sincerely,

Michael F. Giangreco
Syracuse University
APPENDIX D

ESTIMATE OF NUMBERS OF SURVEYS TO BE SENT

DIRECTIONS: Please indicate the number of persons represented by each of the groups listed below. Only count those individuals who work with students who have severe handicaps in regular public schools. Some individuals, especially itinerant therapists may work in both regular schools and center-based programs, these individuals should be included. Agency of employment is not a factor, for example if your system contracts for therapy services to be provided in regular public schools, we wish to include those individuals.

For the purposes of this study,

Students with Severe Handicap refers to "approximately the lowest intellectually functioning 1% of the school-age population. This 1% range includes students who have been ascribed labels such as psychotic, autistic, moderately/severely/profoundly retarded, trainable level retarded, physically handicapped, multiply handicapped, and deaf/blind. Certainly, a student can be ascribed one or more of these labels and still not be referred to as severely handicapped for the purpose here, s/he may not currently be functioning intellectually within the lowest 1% of a particular age."


NOTE: For the number of parents, you need not report the total number of parents of children with severe handicaps. Simply write the same number as teachers. We will not attempt to survey all families, only one per teacher.

Name of School System ______________________________________________________
Contact Person ______________________________________________________

Number of persons in your system represented by the following groups who work with students who have severe handicaps in regular public schools:

NUMBER GROUP

_______ Special Education Teachers
_______ Parents (write same number as Special Education Teachers)
_______ Communication Specialists (Speech Pathologists, Clinicians, Therapists, etc.)
_______ Occupational Therapists
_______ Physical Therapists

* Please return in self-addressed stamped envelope at your earliest convenience. Thank you!
APPENDIX E

DIRECTIONS FOR SURVEY ADMINISTRATION

As discussed previously, survey respondents include special education teachers, parents, and related service specialists (occupational therapists, physical therapists, and communication specialists) who work with students who have severe handicaps and attend regular public schools. For the purposes of this study, the definitions of "students with severe handicaps", "related service", and "specialists" are provided on the reverse side of this direction sheet.

The enclosed surveys packets include three components for each respondent, (a) a cover letter with definitions on the reverse side, (b) the survey, and (c) a self-addressed, stamped envelope. Based on the numbers estimates that you provided to me and my attempt to establish a representational balance across regions and groups, I have enclosed a total of ___ surveys for distribution in your district. Survey packets should be distributed as follows:

____ should be distributed among ____ teachers. NOTE that each teacher receives TWO complete packets because they are asked to send one home to a parent (as described in each cover letter).

____ should be distributed to occupational therapists (one packet per person).

____ should be distributed to physical therapists (one packet per person).

____ should be distributed to communication specialists (one packet per person).

NOTE: In some cases fewer surveys have been provided than the number of persons who are available to respond. In such cases, you should randomly select the number of individuals that match the numbers listed above. If there is any question regarding whether or not a person truly qualifies for participation in the study (a borderline case), always select the person who you believe clearly represents the target population (e.g., persons involved with students who have the most severe handicapping conditions).

PROCEDURES FOR DISTRIBUTION

1) Distribute the surveys using the numbers listed above through interoffice mail, a staff meeting, or through any other mechanism convenient to you.

2) Any personal written or verbal efforts to encourage potential respondents to complete the survey would be appreciated, but are certainly optional. Once the survey packets have been distributed to the appropriate persons, your responsibility has been completed.

Any efforts you can make to distribute the packets at your earliest convenience would be greatly appreciated.

Thank you again for your important assistance in obtaining this data.

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Definitions of Terms

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b) **Related services**: refers to the definition cited in P.L. 94–142 Section 4 (17): "The term 'related services' means transportation, and such developmental, corrective, and other supportive services (including speech pathology and audiology, psychological services, physical and occupational therapy, recreation, and medical and counseling services, except that medical services shall be for diagnostic and evaluation purposes only) as may be required to assist a handicapped child to benefit from special education, and includes the early identification and assessment of handicapping conditions in children."

c) **Specialists**: refers to occupational therapists, physical therapists, and communication specialists (e.g. speech/language pathologists, teachers of the speech and hearing handicapped, speech language clinicians, etc.). Specialists should be duly certified and will have a minimum of a bachelors degree in their respective field. Such specialists are eligible to participate in this study if they currently work with, or within the past calendar year have worked with, students with severe handicaps as defined above.
BIBLIOGRAPHIC DATA

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