

Support Service Decision Making for Students With Multiple Service Needs: Evaluative Data

Michael F. Giangreco and Susan W. Edelman
University of Vermont

Tracy E. Luiselli
Simmons College

Stephanie Z. C. MacFarland
University of Arizona

This quasi-experimental (pretest/posttest) study explored the use of (Vermont Interdependent Services Team Approach) (VISTA) with 11 educational teams serving students with multiple disabilities. Information about VISTA, a process to facilitate consensus decision making about support services (i.e., type, mode, frequency), was obtained by 75 team members through self-study. Following self-study the teams used VISTA to make support service decisions for students with multiple service needs. The findings of this study provide data regarding: (a) changes in team and individual decision making as a result of using VISTA, (b) the extent to which team members perceived that VISTA did what it purported to do (e.g., increase parental and general education involvement, decrease gaps, overlaps, and contradictions), and (c) changes in the teams' level agreement about which support services students need. Implications for future related service decision making are discussed.

DESCRIPTORS: decision making, integrated therapy, multiple disabilities, related services, support services, teaming, transdisciplinary research

To receive an appropriate education, many students with disabilities require related service supports to

Support for the preparation of this manuscript was provided by the United States Department of Education, Office of Special Education and Rehabilitative Services under the funding category, Research Validation and Implementation Projects for Children who are Deaf-Blind, CFDA 84.025S (H025S40003), awarded to The University Affiliated Program of Vermont at the University of Vermont. The contents of this paper reflect the ideas and positions of the authors and do not necessarily reflect the ideas or positions of the U.S. Department of Education; therefore no official endorsement should be inferred.

All correspondence concerning this manuscript and requests for reprints should be addressed to Michael F. Giangreco, The University of Vermont, UAP of Vermont, 499C Waterman Building, Burlington, VT 05405-0160.

augment instruction provided by general and special educators. Support service decision-making issues have potential impact on the appropriateness and quality of a student's education and also raise important fiscal issues in an era when all social services are being increasingly scrutinized. Although the use of related services affects virtually every school in the country and represents a heavily litigated aspect of Individuals with Disabilities Act (IDEA), the research, practice, and policy literature on related services has remained substantively unchanged since the late 1970s when transdisciplinary and integrated therapy models began to be advocated widely for students with multiple service needs (Dunn, 1991; Sternat, Messina, Nietupski, Lyon, & Brown, 1977). The extent to which more contemporary permutations of these approaches have been implemented remains questionable. For example, a national sample of 585 school personnel and parents reported that many practices believed to interfere with the integrated delivery of related services still were widely practiced in their schools (Giangreco, Edelman, & Dennis, 1991).

Since the inception of PL 94-142 in 1975 to the present day, the literature has echoed persistent concerns about territoriality among the disciplines, fragmented and disjointed service provision, physical and programmatic isolation of related services, questions about the educational relevance of related services, and confusion about the roles of related service providers (Dunn, 1991; Giangreco, York, & Rainforth, 1989). Simultaneously, there has been considerable agreement about the importance of the contributions made by each of the many disciplines. More recently, self-advocates and proponents of more naturally occurring supports have begun to question some of the ways services have been practiced traditionally in schools (Giangreco, 1996a; Nisbet, 1992).

An important set of issues remain unresolved pertaining to the ways-related service decisions get made regarding type of service, the relationship of a service

to the educational program, frequency of service, and mode of provision (e.g., direct, consultation). In many cases these decisions are made unilaterally by professionals and then communicated to other team members (Giangreco, 1990; Giangreco et al., 1991). Professionals within some disciplines such as occupational and physical therapy have developed decision-making models to assist therapists with related services decision making (Carr, 1989; Farley, Sarracino, & Howard, 1991; Hall, Robertson, & Turner, 1992). The common limitation of these decision-making models is that each is designed for a therapist to make a decision based on his or her particular discipline, rather than accounting for overlaps and interrelationships among disciplines as a group. Recent data suggest that although attitudes that perpetuate this type of isolated decision making still exist, increasing numbers of related service providers and special educators are favoring consensus decision making in which disciplinary recommendations are open to constructive consideration (Giangreco, Edelman, MacFarland, & Luiselli, in press).

In the late 1980s and early 1990s a support service decision-making process was developed that attempted to address the problems historically associated with related service provision in schools by operationalizing a series of guiding principles in a process called VISTA. An earlier version of VISTA was pilot-tested with six educational planning teams (Giangreco, 1994). In its current form, VISTA is described in a manual that includes sections on the purpose and rationale for the model, current issues in related services, 10 guidelines upon which VISTA is based, as shown in Table 1, and directions and examples for using VISTA. The principles upon which VISTA is based seek to operationalize collaborative teamwork as it pertains to educational support service decision making (Giangreco, 1995; Giangreco et al., in press).

Table 1
Ten Guidelines of VISTA

-
1. Establish and maintain a collaborative team.
 2. Define components of the educational program.
 3. Understand the interaction between program, placement, and services.
 4. Use a value system to guide decision making: "Only-as-special-as-necessary."
 5. Determine functions of service providers and their interrelatedness.
 6. Apply essential criteria when making service recommendations: Educational relevance and necessity.
 7. Determine who has authority for decision making: Consensus.
 8. Match the mode and frequency of service provision to the function served.
 9. Determine the least restrictive location and strategies for service provision.
 10. Engage in ongoing implementation and evaluation of support services.
-

This updated version has undergone review by a group of experts from 12 national organizations representing a variety of related service disciplines, special educators, parent and consumer groups, and general educators (Giangreco, Edelman, Luiselli, & MacFarland, 1996).

The VISTA process includes four major activities: (a) *general preparation* (e.g., forming a team, learning about team members' skills, getting to know the student, reading the VISTA manual), (b) *getting ready for the VISTA Meeting* (e.g., determining the components of the student's educational program), (c) *having the VISTA meeting* (e.g., considering potential support services as a team, evaluating suggestions based on criteria, reaching consensus on educationally necessary services), and (d) *next steps after the VISTA meeting* (e.g., subgroups do more refined planning, implementing team decisions, evaluating the impact of support services) (Giangreco, 1996b).

Teams using VISTA include parents, general education teachers, special educators, and related services providers who work with a student. Teams work toward developing a shared framework, in part, by determining the components of a student's educational program. In doing so, they agree to use family-selected priorities and reach consensus on additional learning outcomes and general supports. Unlike many educational programs in which team members each offer a set of goals from their respective disciplinary orientations, learning outcomes in VISTA are "discipline-free." This means that learning outcomes are based on the educational needs of the student to assist him or her in pursuing valued life outcomes rather than the orientation of the various disciplines. The educational program, which is determined prior to the VISTA meeting, provides a shared focal point for support service decision making by team members.

At the VISTA meeting, a designated team member facilitates a discussion about each educational program component by asking group members a series of questions about who will be responsible for teaching the student, what types of supports members believe are needed, and what functions (e.g., making adaptations) they should serve. The VISTA process provides each team member with opportunities to offer their opinion in a divergent format before the facilitator guides the team to analyze their collective input by: (a) considering the potential interrelationships among disciplinary recommendations, (b) actively exploring for gaps, overlaps, and contradictions among recommendations, and (c) considering the educational relevance and necessity of proposed services.

The facilitator then guides the team through convergent steps to determine what support services are needed, the mode and frequency of the services, where the services should be provided, and when the service provision should be reevaluated. In doing so,

the team is encouraged to recommend services that are "only as special as necessary," by considering natural supports, rather than automatically assigning a specialist. Guiding a team through a VISTA meeting requires a working knowledge of VISTA's principles and competent group facilitation skills (See Giangreco, 1996b, for description).

The purpose of the current investigation was twofold. First, it sought to determine if team members who learned and used VISTA perceived that it did what it purports to do: (a) avoid support service gaps and overlaps, (b) facilitate group versus individual decision making, (c) provide an identifiable process for support service decision making, (d) avoid contradictory service recommendations, (e) base support service decision making on the same educational program components, (f) increase satisfaction with support service decision making, (g) involve general educators in support service decision making, and (h) involve families in support service decision making. Second, the study sought to document changes in actual support service recommendations (e.g., type, mode, frequency) based on use of VISTA. By evaluating these aspects of VISTA use, it is hoped that we can learn improved ways of ensuring that students with disabilities get the support services they require to participate in a meaningful education, that professional services will not be unnecessarily overused, and that human resources are used effectively.

Method

Research Sites

During spring 1995, data were collected from personnel in 11 public school sites in four states (i.e., Connecticut, Massachusetts, Utah, Vermont) where students with disabilities who had multiple service needs were educated in general education classrooms. The students were included in a variety of general education grade levels including preschool (with students without disabilities), kindergarten, and grades 1, 2, 3, 5, and 11 (which was primarily education within integrated community and vocational settings).

The seven female and four male students all were deaf-blind, ranging in age from 4 through 20 years. All of these students also were reported to have significant cognitive delays and additional disabilities such as orthopedic impairments ($n = 10$, 91%), health impairments ($n = 7$, 64%), and behavioral impairments ($n = 4$, 36%).

Study Respondents

A total of 75 educational team members participated in this study, including 68 females (91%) and 7 males (9%). Thirty-three of the respondents were related services providers, including 12 speech/language pathologists, 5 occupational therapists, 4 itinerant teachers

of the blind and visually impaired, 4 itinerant teachers of the deaf and hearing impaired, 2 physical therapists, 2 nurses, 1 deaf-blind specialist, 1 orientation and mobility specialist, 1 employment specialist, and 1 family support consultant. The remaining respondents included 13 special educators, 11 parents (9 mothers, 2 fathers), 6 paraprofessionals, 6 general education teachers, and 6 school administrators.

The respondents reported having an average of 2.7 ($SD = 2.9$) years of experience with one of the 11 students with disabilities at the research sites; an average of 11.68 ($SD = 7.37$) years of experience working with students with disabilities in general; and an average of 6.36 ($SD = 5.99$) years of experience working with students with disabilities in general education classrooms.

Design, Procedures, Data Collection, and Data Analysis

This study primarily was a quasi-experimental pretest/posttest design augmented by a series of interrelated quantitative data analyses. Additional steps were taken to ensure the fidelity of VISTA use. The procedures are described here in chronological order of initiation, although actual onset overlapped because of variation across the 11 teams. Data were collected between October 1994 and June 1995 by a four-person research team who visited each of the 11 sites approximately once per month in an effort to be familiar with the context within which data were being collected. Table 2 offers a chronology of data collection activities for each team.

The research team conducted three types of fidelity checks prior to and during the VISTA meeting to increase the probability that the data collected regarding VISTA accurately reflected the process as described in the VISTA manual.

Fidelity Check 1: Knowledge of VISTA before and after team self-study. A 10-item questionnaire regarding the 10 guidelines in VISTA established that 68 of the 75 study participants had no previous knowledge of VISTA as evidenced by their inability to answer any of the questions. Of the seven study participants who answered at least some of the questions, the number of correct responses ranged from 1 to 8, with a mean score of 2.71 ($SD = 2.75$). This suggests that participants had little or no knowledge about VISTA prior to their participation in this study.

Next, each of the 11 teams engaged in self-study regarding VISTA, consisting of individual review of the VISTA manual and group meeting for 2 to 4 hours across one or two sessions. Although some study participants said they carefully read the entire manual, study participants more commonly reported that they "skimmed" the manual by reading the "Key Points," tables, and sample forms.

After completing self-study of VISTA, all 75 partic-

Table 2
Data Collection During the 1994-1995 School Year

Site	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	
1	F1B			SS			F1C	F2	Pre F3 Post	
2		F1B		SS			F1C	F2	Pre F3 Post	
3		F1B		SS			F1C	F2	Pre F3 Post	
4		F1B		SS			F1C	F2	Pre F3 Post	
5		F1B		SS			F1C	F2	Pre F3 Post	
6		F1B		SS			F1C	F2	Pre F3 Post	
7			F1B	SS			F1C	F2	Pre F3 Post	
8						F1B	SS	F1C	F2	Pre F3 Post
9						F1B	SS	F1C	F2	Pre F3 Post
10						F1B	SS	F1C	F2	Pre F3 Post
11						F1B	SS	F1C	F2	Pre F3 Post

Key: F1B = Fidelity Check 1 began; SS = self-study (individual and group); F1C = Fidelity Check 1 completed; F2 = Fidelity Check 2; Pre = pretesting; F3 = Fidelity Check 3; Post = posttesting.

ipants completed the same questionnaire they had been asked to complete prior to self-study. Following self-study, the average number of correct responses out of 10 was 8.88 ($SD = 1.41$). Calculations before and after self-study were made using the *SAS System* (SAS Institute, 1989). This data indicates that the vast majority of team members had gained basic knowledge about the 10 guidelines of VISTA following self-study, but prior to their use of VISTA.

Fidelity Check 2: Technical assistance developing an individualized "program-at-a-glance." A vital preparatory step in VISTA involves developing a sound educational program documented as a "Program-at-a-Glance." VISTA is most effectively used when the program-at-a-glance meets foundational criteria including: (a) a small set of individualized learning priorities stated as observable behaviors, (b) family-selected priorities, (c) discipline-free learning outcomes, (d) additional learning outcomes that extend beyond the top priorities organized by curricular categories (e.g., communication, socialization, physical education, math), and (e) general supports organized by categories (e.g., physical needs, sensory needs, providing access and opportunities). The usefulness of VISTA is compromised when there are goals for each discipline (e.g., occupational therapy, physical therapy), goals are vaguely stated as broad curricular categories (e.g., improve communication), or exclusively reflect discipline-specific content, that is, "therapy goals." Teams developed a program-at-a-glance for their respective student and sent it to the research team to evaluate its adherence to the aforementioned criteria. If necessary, adjustments were made by the team to the program-at-a-glance based on feedback from the research team prior to the scheduled VISTA meeting.

Fidelity Check 3: Technical assistance facilitating the VISTA meeting. Each team had a meeting in which they used VISTA to arrive at group consensus about which support services were required for each of the student's program-at-a-glance entries. The team's pro-

cess and decisions were documented on *VISTA Worksheet*, *VISTA Team Summary*, and team meeting minutes. The VISTA meeting was facilitated by a team member who had participated in the self-study, was individually selected by their team, but who had never previously used VISTA.

The research team agreed to provide technical assistance during the VISTA meeting on an "as needed" basis. It would not have been ethical to allow teams to fail in their use of VISTA while a person with knowledge and skills regarding the process silently observed. The need for technical assistance was determined in one of two ways: (a) team members could ask for assistance during the meeting; or (b) the research team member could intervene when he or she recognized that the fidelity of VISTA was being compromised. Each of the 11 facilitators needed some level of assistance.

Pretest-Posttest Data Comparing Related Services Decision Making Before and After Use of VISTA

Pretest data were collected by research team members immediately preceding each team's VISTA meeting. Each study participant was provided with a two-part data collection form. Pretest (Part 1) consisted of a full page matrix where the student's program-at-a-glance content was listed vertically down the left side of the page in rows (i.e., learning outcomes, additional learning outcome categories, general support categories); there were typically 15 to 20 rows per student. The student's professional support services (e.g., physical therapy, orientation and mobility, speech/language pathology) were each listed horizontally across the top of the page in columns. Lines separating the columns and rows created a matrix with a box for the intersection of each support service and each program-at-a-glance component. Study participants were provided with written directions for completing this matrix as well as verbal clarification if needed.

For each program-at-a-glance component, participants were asked to provide one of three responses in

reference to each listed support service. They were asked to write a plus (+) if they were "at least 80% confident that the support is needed," a minus (-) if they were "at least 80% confident that the support is not needed," or a question mark (?) if they were "not sure, less than 80% confident in either direction." For team members who themselves were support service providers, this meant giving their opinions about the need for their own service as well as for all other support services. For others (e.g., parent, classroom teacher, administrator), this meant giving their opinions about the need for the various support services.

Each study participant's individual responses (+, -, ?) were explored using item-by-item analysis in which their own responses regarding the need for supports were compared with those of each support service providers regarding his or her own discipline. For example, on an item-by-item basis, a parent's responses regarding physical therapy were compared with the physical therapist's responses about physical therapy. This was repeated by comparing the same parent's responses regarding speech/language pathology to the speech/language pathologist's responses regarding speech/language pathology, and so on. Then the total number of agreements between an individual and all the support service providers on the team was divided by the total number of items and multiplied by 100 to establish a *pre-VISTA reliability score* for each individual; this statistic provided a pre-VISTA indicator of each team members' level of agreement with support service staff about "who should be doing what with the student."

Pretesting (Part 2) consisted of a series of eight statements about the study participants' experiences with support service decision making *prior to* learning about and using VISTA. Statement content was related to issues purportedly addressed in VISTA, including: (a) family involvement in decision making, (b) group versus individual decision making, (c) the existence of a process for support service decision making, (d) avoiding service gaps and overlaps, (e) avoiding contradictory service recommendations, (f) involving general educators in decision making, (g) having the same information about components of the student's educational program, and (h) satisfaction with the team's support service decision-making methods. Each statement was followed by a Likert-style scale where 1 was anchored with the phrase "strongly disagree" and 10 was anchored with the phrase "strongly agree." A "comments" section was available for study participants to explain their responses.

VISTA meetings culminated with team members reaching consensus regarding which support services were needed in reference to their student's program-at-a-glance. They signed a statement on the *VISTA Team Summary* form to document their consensus. Therefore, successful completion of the VISTA meet-

ing meant team members had reached 100% agreement regarding which support services were needed and not needed in relation to each program-at-a-glance entry.

Posttest (Part 1) responses were used to establish a *post-VISTA reliability score* for each participant using the same formula as *pre-VISTA reliability scores*. This statistic provided an indicator of the level of agreement about "who should be doing what with the student" after having used VISTA. A paired *t* test was conducted to ascertain the difference between *pre-* and *post-VISTA reliability scores*.

A second type of analysis compared the pre-VISTA responses of support services providers regarding their own discipline with their post-VISTA responses regarding their own discipline. For example, which program-at-a-glance components did the physical therapist indicate she thought she needed to support before using VISTA compared with which components she and the team agreed to after using VISTA. The percentage of agreement was subtracted from 100 to establish a *prepost intradiscipline difference score*, which was calculated for each of the related services providers in the sample. Statistics were calculated using the *SAS System* (SAS Institute, 1989).

Posttesting (Part 2) consisted of a series of the same eight statements posed in pretesting regarding the study participants' experiences with support service decision making, but now they were asked to respond to the statements *after* learning about and using VISTA. As in pretesting, each statement was followed by a Likert-style scale where 1 was anchored with the phrase "strongly disagree" and 10 was anchored with the phrase "strongly agree." A "comments" section was available for study participants to explain responses.

A series of paired *t* tests were used to compare pretest and posttest responses on these eight variables using the *SAS System* (SAS Institute, 1989). To control for experiment-wise error rate, a significance level of .01 was divided by 8 (the number of variables on which *t* tests were conducted); this established a more stringent significance level of .00125.

Three separate analyses were conducted to determine the directionality of related service changes and time differences in related service recommendations. First, the total number of plus (+), minus (-), and question mark (?) scores were counted from pretest and posttest data to compare possible quantity shifts in each category (i.e., +, -, ?) before and after VISTA use. Next, each student's individualized education plan (IEP) from the 1994-1995 school year was compared with the recommendations generated by the team at the VISTA meeting in the late spring of 1995 on two parameters; (a) changes in direct and indirect service provision and (b) changes in the number of hours of related services provision for those services represented at the VISTA meeting.

Results

Pre-VISTA reliability scores averaged 61.61% ($SD = 15.81$), demonstrating that team members did not share high levels of agreement about what services were needed to support students' education prior to using VISTA. *Post-VISTA reliability scores* were all 100%. This occurred because a VISTA meeting is not complete until the team reaches and documents explicit agreement about which services are required to support each educational program component for a student. The comparison of these pretest/posttest scores demonstrates that a significant difference, $t(74) = 21.02$, $p < .0001$, was achieved in the team members' knowledge and agreement about which services were required to support each students' educational program components based on the use of VISTA.

Intradiscipline differences between what service providers reported about their respective disciplinary involvement before and after VISTA changed an average of 44% ($SD = 20$). For example, during pretesting (Part 1), a speech/language pathologist reviewing her student's program-at-a-glance would determine where she felt her services were required from her individual perspective for each of 20 items using the "+, -, ?" scoring system. After going through VISTA with the team, this same speech/language pathologist changed 8 or 9 of her 20 responses (44%). This finding clearly demonstrates that the decisions professionals make independently differ noticeably from those they make by consensus with other team members using VISTA.

A detailed analysis of the changes in team members' use of "+, -, ?" scores during pretesting and posttesting depicted a clear pattern. During pretesting, team members used "+" scores (to indicate the need for a service) nearly 60% ($n = 2,754$) of the time; "?" scores (to indicate uncertainty about the need for service) nearly 9% ($n = 416$) of the time; and "-" scores (to indicate a service is *not* needed) about 31% ($n = 1472$) of the time. This suggests that team members believed that support services were needed to address approximately 60–70% of their students' educational program components. After completing the VISTA meeting, the number of "?" scores dropped to zero; "+" scores dropped from 60% to 39% ($n = 1812$); and "-" scores jumped up from 31% to nearly 61% ($n = 2830$). This pretest/posttest pattern of score disbursement was consistent for supports recommended by 31 of the 33 related services providers and 11 of the 13 special educators. In cases involving two speech/language pathologists and two special educators, their teams agreed that their involvement needed to be increased slightly. The general shifting pattern suggests, that in regard to over 91% of the support services, VISTA assisted teams in narrowing the focus of support service involvement; rather than needing

specialized services to support 60% to 70% of the student's educational program, team averages dropped to about 40%.

A pretest/posttest comparison of the use of direct and indirect services also showed a distinct pattern. When comparing the students' related services as documented on the 1994–95 IEP with those on the *VISTA Team Summary* (depicting team decisions), direct services did not increase for any of the 33 related services across the sample; in 14 cases the amount of direct service remained the same, and in 19 cases the amount of direct service decreased. Conversely, the amount of indirect service decreased for only three of the related services, whereas it stayed the same in 10 instances and increased in 20.

Despite narrowing their focus to a smaller set of educational program components to be supported and generally shifting from direct toward indirect service provision, the total amount of time the related services were recommended for use based on VISTA remained virtually unchanged from the amounts listed on the IEP from the previous year. This time comparison can only be estimated because of some missing information on the 1994–95 IEPs. Based on data that were available, it can be said that the amount of service for 3 of the 11 students remained unchanged. Support service amounts increased by a total of approximately 2.5 hours per week for 3 other students; and support service amounts decreased by a total of approximately 1.5 hours per week for the 5 remaining students. One area not included in these findings is the change in the amount of support provided by the special educators on the teams. Although two of the students received inclusionary educational services in a preschool where the teacher for all the children was a certified special educator, and one high school student was taught primarily in integrated community and vocational settings, the other eight students were in traditional style general education classes with a classroom teacher.

When students are in a general education class, the extent and nature of special education support involvement is open to wide variation. Prior to VISTA use, only 3 of the 11 students' IEPs indicated the amount of time that a special education teacher would support the student with disabilities, and none of the IEPs documented the mode of special education service provision (i.e., direct, indirect) or which aspects of the students' educational program required special education support. VISTA was used to document the mode of special education provision (e.g., indirect/direct), the frequency of services (i.e., number of hours per week), and the specific program-at-a-glance entries to be supported by both related services personnel and special educators. This added clarity represents a change in the documentation of specialized support services when students with disabilities are educated in typical classrooms.

As shown in Table 3, the pretest/posttest variables (Part 2) addressing study participants' perceptions of various service provision decision-making issues before and after use of VISTA are presented in descending order based on the magnitude of *t* values. Pretest mean scores ranging from 5.05 to 6.79 on a 10-point scale and standard deviations ranging from 2.05 to 2.62 depict generally low levels of confidence and wide variation among team members regarding their existing related services decision-making practices prior to VISTA use. The one notable exception to this was the data collected about variable 8, "Our support service decision-making involved the family." The higher mean score of 8.44 (*SD* = 2.21) suggests that many team members felt that they were already involving families. This may, in part, be attributed to increasing parental involvement in educational planning. As one father stated in his written comments, "We (parents) tend to stay on top of our daughter's education whatever system is used." Although this higher mean score generally reflects that pattern of responses given by team members, analysis of outliers can be revealing. For example, during pretesting on the family involvement variable, the special educator and speech/language pathologist from a team rated the team's family involvement as 10, the highest score on the scale. Meanwhile, the occupational therapist on the same team rated it as 3, and the parent gave it the lowest score on the scale, 1. After VISTA use, each of these four study participants rated the family involvement variable "10." A vision specialist from another team summarized her feelings by saying, "I didn't feel the team communicated well before using VISTA." This highlights the caution to avoid over generalization of important trends one can draw from central tendency measures to the specific situations.

As depicted on Table 3, there were virtually no

missing data for variables 1 through 6. Variable 7 had more missing data during both pretest and posttest and consequently lower *t* values than the other variables despite a similar pretest/posttest mean differences. Comments written on the data collection forms explained two reasons for the missing data. First, three of the situations were nontraditional (e.g., integrated preschool taught by a special educator; high school integrated community-based learning). Second, in two additional cases, the general education teacher was not physically present at the VISTA meeting, so some team members felt it inappropriate to comment on their level of involvement. Variable 8 had no missing data during pretesting, but 10 people did not answer this question in posttesting because in two cases parents could not attend the actual VISTA meeting for personal reasons. In both cases, the team made tentative decisions that were later confirmed.

Posttest mean scores ranging from 8.61 to 9.78 with standard deviations more tightly clustered between 0.96 and 1.99 depict consistently higher levels of confidence among team members that after use of VISTA they: (a) avoided gaps and overlaps, (b) made decisions together, (c) had an identified process to make support service decisions, (d) avoided contradictory service recommendations, (e) shared common information about the student educational program components, (f) involved general educators in decision making, and (g) involved families in decision making.

A mother wrote in the comments section, "The VISTA approach definitely provided much needed structure to the decision process." A principal commented, "The worksheet provided us with opportunities to get into specific areas and avoided overlaps and gaps!" Overall, study participants gave VISTA a high satisfaction rating of 9.28 (*SD* = 1.18) on a 10-point scale. A vision specialist commented, "I think VISTA

Table 3
Experiences with Support Services Decision Making Before and After VISTA

Variable	Pretest			Posttest			<i>t</i>
	<i>n</i>	<i>M</i>	(<i>SD</i>)	<i>n</i>	<i>M</i>	(<i>SD</i>)	
1. Our team's method for making support service decisions deliberately avoided gaps and overlaps.	74	5.05	(2.05)	75	8.61	(2.27)	11.64*
2. Support service providers made decisions together with each other and other team members, rather than making individual decisions that were simply shared with others.	75	6.40	(2.56)	75	9.55	(0.96)	10.36*
3. Our team had an identifiable process for making support service decisions.	75	6.00	(2.65)	75	9.21	(1.38)	9.92*
4. Our team's method for making support service decisions deliberately avoided contradictory service recommendations.	75	5.94	(2.48)	75	8.94	(1.86)	9.18*
5. Our team's method for making support service decisions provided each team member with the same information about the components of the student's educational program.	75	6.79	(2.36)	75	9.46	(0.97)	8.94*
6. Our team's method for making support service decisions was satisfactory.	75	6.52	(2.54)	75	9.28	(1.18)	8.50*
7. Our team's method for making support service decisions deliberately involved general education personnel in determining support needs.	61	6.30	(2.62)	57	8.79	(1.99)	5.67*
8. Our support service decision making involved the family.	75	8.44	(2.21)	65	9.78	(0.62)	4.87*

* $p < .0001$

was a big help in role clarification. The process helped us work together as a team." This sense of satisfaction extended to some team members who previously felt excluded as team members. As one paraprofessional commented, participating in VISTA was, "... the first time that my opinion and input as a paraprofessional was respected and encouraged!"

This pattern of higher scores during posttesting (Part 2) was explored using an item-by-item comparison to ascertain the extent to which it remained consistent across individual participants' responses on each of the eight variables. Given eight variables for 75 respondents, there were 600 pairings to consider. Forty of the 600 responses (6.66%) were lower during posttesting than pretesting. This documents that over 90% of the individual responses were consistent with the pattern of higher posttest scores has shown in Table 3. No significant patterns were identified in the distribution of these outliers by discipline or variable. It was interesting to note that half of the outliers came from a single team, suggesting something that may have been idiosyncratic to that particular team.

Discussion

The findings of this study provide encouraging data suggesting that for the group studied: (a) the support service decisions made on behalf of students changed as a result of using VISTA (e.g., narrowed focus, shift toward indirect services); (b) specialists made different decisions pertaining to their discipline's involvement as a result of using VISTA; (c) VISTA did what it purported to do (e.g., increased parental and general education involvement, decreased gaps, overlaps, and contradictions); and (d) team members increased their level of agreement about which support services a student needed. Although maturation is a common threat to validity associated with one-group, pretest/posttest designs, maturational effects were minimized by the short time interval between pretesting and posttesting. Additionally, a study such as the current investigation, which introduces participants to a new procedure, can be subject to the Hawthorne effect, whereby participants may be favorably influenced merely by being part of the study. These effects can be minimized in future research by collecting longitudinal data (Borg & Gall, 1983).

A significant limitation of this study represents an area for future development. In all 11 cases, the first-time facilitators of VISTA required assistance from a research team member to maintain the fidelity of the process during the VISTA meeting. Anytime people are learning something new, especially something that has multiple parts and steps, it is not unusual for first-time efforts to require support. The ability of teams to engage in self-study, and subsequently apply what they have learned, is vital so that team improvement is not reliant on access to external training.

Future self-study procedures should be expanded to: (a) establish agreed upon team norms for preparation (e.g., ensure that everyone has read the same information and understands it); (b) establish opportunities for team members to practice the steps in VISTA and provide each other with feedback or seek feedback from someone who is competent in the use of VISTA; (c) highlight the existing directions in VISTA that encourage team members to assist each other in facilitating the VISTA meeting even though one team member assumes primary responsibility for that function; (d) consider more intensive, differential self-study and practice experiences for those facilitating VISTA; (e) establish a team self-review procedure to evaluate if their actual use of VISTA was consistent with its underlying principles and how future use can be improved, and (f) encourage learning in locations and at times when the day-to-day routines of public school are not a distraction.

One of the key findings of this study pertains to the shifts and clarification regarding what services are needed to support a student's education. Pretest data suggested that team members had an expansive view of support service involvement that was narrowed as a result of using VISTA. This suggests that the questions addressed by the team during the VISTA meeting prompted members to think differently about the need for support services.

The *pre-VISTA reliability score* of nearly 62% depicting limited agreement among team members was 10% higher than the same measure in the pilot study (Giangreco, 1994). This is likely attributable to one of two factors. It could be that this difference represents normal variation given the standard deviations of 8.7 and 15.81 in the two investigations, respectively. If the difference is significant, it may be a training/self-study effect. In the pilot study, reliability pretesting was conducted immediately before a brief orientation about VISTA; this was participants' first exposure to the content. During the current investigation, the reliability pretesting (Part 1) occurred before the VISTA meeting but after self-study. Therefore, members may have been applying some of what they learned in self-study.

Reported change in *pre/post-VISTA reliability scores* may relate to variations in question-asking strategies. Often, prior to VISTA use, team members ask themselves the question, "Where *can* a discipline be involved?" Such a question is likely to result in an extensive list since the possibilities for involvement are vast. Conversely, if one asks, "Where are services absolutely required, such that their absence would interfere with the student's access to or participation in her individualized educational program?" team members are challenged to differentiate between what *could* be offered versus what they believe to be truly essential. It remains to be seen whether or not the

narrowing of focus prompted by use of VISTA will continue to be narrowed further over time as the impact of support services is more closely evaluated. The fact that the frequency of service provision remained unchanged even though members consistently agreed on narrowing the focus of their involvement begs the question, "While team members are willing to publicly agree that their roles should change, are they reluctant to change the time allotment?" It may be psychologically easier to agree to changes in one's type of involvement if the same frequency of service provision can be retained. It is also worth asking, "Do teams truly exert control over how much service provision time they provide to students or are such decisions artificially controlled by contractual interagency arrangements, or other existing policies, practices, or conditions apart from individual student needs?" "Do teams really base decisions on educational relevance and necessity or are such decisions influenced by contextual factors such as availability of specialists, historical patterns of service provision, or perceived time availability?" Only longitudinal use of the principles and procedures outlined in VISTA will shed light on whether or not changes in time allotments are forthcoming.

The present investigation resulted in substantial *intradiscipline difference scores*, averaging 44%; this was only slightly lower than the 48% differences in the pilot study. This replicated finding is testament to the power of group decision making. Unfortunately, far too many support service decisions continue to be made in isolation or within perfunctory group discussions. Use of VISTA consistently has resulted in group decisions that are different from those that specialists determine in isolation. Our field needs a new standard whereby all team members recognize that only when members address the interrelationships among their discipline in reference to a common set of student goals can support services be determined appropriately.

An unexpected, but important bit of data that emerged from this study was the lack of clarity and documentation about the roles and functions of special educators when students with disabilities are placed in general education classrooms. In some cases special educators have virtually relinquished their role as teachers in favor of a case management role. Although this is an important function, it appears that the role of special educators needs to be clarified as a support person to the general education teacher. The data from this study did not yield potential solutions to this dilemma, but clearly highlighted it as a need identified in this sample.

As students with increasingly severe and multiple disabilities access general education classrooms in their neighborhood schools, the need to clarify the educational relevance and necessity of related services is

of paramount concern both in terms the quality and appropriateness of students' educational programs as well as the economic impact of resource utilization. Concurrent qualitative research (i.e., document review, observations, interviews) has been conducted by the research team in an effort to understand more fully some of the more intricate issues involved in related service decision making, implementation, and evaluation such as self-study patterns, professional socialization, false consensus, interpersonal dynamics, and contextual variables (Giangreco, Edelman, Luiselli, & MacFarland, in press). Most importantly, the current investigation sets the stage to consider the impact of VISTA use on students, their families, and the professionals who serve them. Existing data suggest that VISTA currently can provide a flexible mechanism that assists teams in moving beyond the rhetoric of cross-disciplinary collaboration and family involvement in decision making toward substantive change.

References

- Borg, W., & Gall, M. (1983). *Educational Research* (4th edition). New York: Longman.
- Carr, S. H. (1989). Louisiana's criteria of eligibility for occupational therapy services in the public school system. *American Journal of Occupational Therapy*, 43, 503-508.
- Dunn, W. (1991). Integrated related services. In L. Meyer, C. Peck, & L. Brown (Eds.), *Critical issues in the lives of people with severe disabilities* (pp. 353-377). Baltimore: Paul H. Brookes.
- Farley, S., Sarracino, T., & Howard, P. (1991). Development of a treatment rating in school systems: Service determination through objective measurement. *American Journal of Occupational Therapy*, 45, 898-906.
- Giangreco, M. F. (1990). Making related service decisions for students with severe disabilities: Roles, criteria, and authority. *Journal of The Association for Persons with Severe Handicaps*, 15, 22-31.
- Giangreco, M. F. (1994). Effects of a consensus-building process on team decision-making: Preliminary data. *Physical Disabilities: Education and Related Services*, 13(1), 41-56.
- Giangreco, M. F. (1995). Related services decision-making: A foundational component of effective education for students with disabilities. *Physical and Occupational Therapy in Pediatrics*, 15(2), 47-67.
- Giangreco, M. F. (1996a). "The stairs didn't go anywhere!": A self-advocate's reflections on specialized services and their impact on people with disabilities. *Physical Disabilities: Education and Related Services*, 14(2), 1-12.
- Giangreco, M. F. (1996b). *Vermont interdependent services team approach (VISTA): A guide to coordinating educational support services*. Baltimore: Paul H. Brookes.
- Giangreco, M. F., Edelman, S., & Dennis, R. (1991). Common professional practices that interfere with the integrated delivery of related services. *Remedial and Special Education*, 15, 288-296.
- Giangreco, M. F., Edelman, S. W., Luiselli, T. E., & MacFarland, S. Z. (1996). Review of VISTA by representatives of national organizations. Burlington, VT: University of Vermont, University Affiliated Program of Vermont. ERIC Document Reproduction No. pending.
- Giangreco, M. F., Edelman, S. W., Luiselli, T. E., & MacFarland, S. Z. (in press). Reaching consensus about

- educationally necessary support services: A qualitative evaluation of VISTA. *Special Services in the Schools*.
- Giangreco, M. F., Edelman, S., MacFarland, S. Z., & Luiselli, T. E. (in press). Attitudes about educational and related services provision for students with deaf-blindness and multiple disabilities. *Exceptional Children*.
- Giangreco, M. F., York, J., & Rainforth, B. (1989). Providing related services to learners with severe handicaps in educational settings: Pursuing the least restrictive option. *Pediatric Physical Therapy, 1*(2), 55-63.
- Hall, L., Robertson, W., & Turner, M. (1992). Clinical reasoning process for service provision in the public schools. *American Journal of Occupational Therapy, 46*, 927-936.
- Nisbet, J. (1992). *Natural supports at home, school, and in the community for people with severe disabilities*. Baltimore: Paul H. Brookes.
- SAS Institute, Inc. (1989). *SAS System, Version 6.09*. Cary, NC: Author.
- Sternat, J., Messina, R., Nietupski, J., Lyon, S., & Brown, L. (1977). Occupational and physical therapy services for severely handicapped students: Toward a naturalized public school service delivery model. In E. Sontag, J. Smith, & N. Certo (Eds.), *Educational programming for the severely and profoundly handicapped* (pp. 263-278). Reston, VA: Council for Exceptional Children—Division of Mental Retardation.

Received: September 29, 1995
Final Acceptance: May 28, 1996
Editor in Charge: Joe Reichle