

Collaborative Teaming to Support Students at Risk and Students With Severe Disabilities in General Education Classrooms

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ABSTRACT: *This study investigated the effectiveness of a general education/special education collaborative teaming process on the academic and social participation of six students in general education classrooms. Three of the students experienced severe disabilities. The other three were considered academically at risk. Each student was supported by an educational team that included general and special education personnel and the students' parents. Each team developed and collaboratively implemented individualized Unified Plans of Support for one student at risk and a classmate with disabilities, consisting of academic adaptations and communication and social supports. The effectiveness of the support plans was evaluated through behavioral observations and team interviews. Intervention outcomes suggested that for each of the six students consistent implementation of the plans of support by team members was associated with increases in academic skills, engagement in classroom activities, interactions with peers, and student-initiated interactions.*

A growing body of research documents that students with significant disabilities can be educated in their neighborhood school along with their typical peers. Inclusive education is postulated upon the following beliefs: (a) All children can learn; (b) all children have the right to be educated with their peers in age-appropriate heterogeneous classrooms within their neighborhood schools; and (c) it is the responsibility of the school community

to meet the diverse educational needs of all its students regardless of their ability levels, national origin, and linguistic, cultural and family background (see Thousand & Villa, 1992).

It is well documented that inclusive education can yield positive outcomes for all of those involved, including the focus students, typical peers, classroom teacher, and school community at large (e.g., Hunt, Doering, Hirose-Hatae, Maier, & Goetz, 2001; Soto, Müller, Hunt, & Goetz, 2001). Among the outcomes for students with severe dis-

abilities, we find (a) increased social participation and access to general education curriculum (Fryxell & Kennedy, 1995; Hunt, Alwell, Farron-Davis, & Goetz, 1996; Staub, Schwartz, Galluci, & Peck, 1994); (b) learning and generalization of new social, sensory, motor, and communication behaviors (e.g., Gee, Graham, Sailor, & Goetz, 1995; Hunt, Staub, Alwell, & Goetz, 1994); and (c) improvement of the overall quality of individualized education program (IEP) objectives (Hunt & Farron-Davis, 1992; Hunt, Farron-Davis, Beckstead, Curtis, & Goetz, 1994). Significant benefits of inclusion have also been reported for class members without disabilities including increased sensitivity, empathy, and acceptance of human differences, as well as increased access to cooperative learning opportunities and assistive technology (Giangreco, Dennis, Cloninger, Edelman, & Schattman, 1993; Peck, Donaldson, & Pezzoli, 1990). More recently, benefits have been identified for the overall classroom program through the use of innovations and instructional strategies that benefited all children (Soto et al.).

Despite these positive outcomes, a considerable body of literature establishes that effective inclusive education for students with significant disabilities requires substantive changes in the structure of the classroom, a different conceptualization of professional roles, and a continuous need for collaborative teaming (e.g., Gee et al., 1995; Giangreco, 2000; Giangreco et al., 1993; Giangreco, Prelock, Reid, Dennis, & Edelman, 1999; Hunt et al. 2001; Rainforth & York-Barr, 1997; Thousand & Villa, 1992; York-Barr, Schultz, Doyle, Kronberg, & Crossett, 1996). Other variables that have emerged as essential to the success of inclusive schooling for students with severe disabilities include the design and implementation of educational supports for diverse learners, parental involvement, support for the development of positive social supports and friendships, implementation of positive behavioral supports for students with challenging behaviors, and a shared inclusionary philosophy by all key stakeholders (Giangreco, 2000; Hunt, Hirose-Hatae, Doering, Karasoff, & Goetz, 2000; Nevin, Thousand, Paolucci-Whitcomb, & Villa, 1990).

The ability of a local school to serve students with disabilities in the general education classroom appears to be related to the ability of that school to provide effective quality education for a heteroge-

neous student body, wherein planning for the education of general as well as special populations is a shared responsibility of the total professional and administrative staff (Hunt et al., 2000; Hunt et al., 2001; Sailor, 1991). When all students are being educated at their local inclusive school, then all educational resources could be used to provide a more individualized and more effective education for everyone. As the student population changes due to changing demographic variables, there is an increased focus on finding ways to improve the performance of students at risk (Sailor). Students are placed at risk because of academic underachievement when they are faced by educational disadvantage associated with poverty, minority racial/ethnic identity, limited English proficiency, and specific family configuration. These at-risk conditions are usually coupled with the realities afflicting urban education, such as high-student teacher ratio, low parental involvement, and overcrowded and poorly funded schools. The needs of students at risk are many, and resources in general education are typically too few. Many of the human resources needed for the educational improvements of at-risk students are locked up in federal categorical and special education programs that are designed to benefit a relative few (Hunt et al., 2000; Hunt et al., 2001; Sailor).

Much discussion has taken place in the literature on resource reallocation whereby inclusive schools redesign the way they allocate educational and material resources to meet the needs of all students. Resource reallocation can only be conducted if teachers and other educational personnel can work together in shared problem-solving (e.g., Hunt et al., 2001; McLaughlin & Versteegen, 1998; Miles & Darling-Hammond, 1998). Despite recent calls for resource reallocation, there is little empirical research aimed at investigating how existing educational resources can be used to provide educational personnel with opportunities to plan and work collaboratively in order to support all students' learning, including those at risk and with special needs (McLaughlin & Versteegen; Miles & Darling-Hammond).

Collaborative teaming provides a vehicle for unifying the historically dual systems of general and special education (Hunt et al., 2001; Nevin et al., 1990; Villa & Thousand, 2000). The collaborative teaming process offers ongoing opportunities for general and special educators and parents to

“share knowledge and skills to generate new and novel methods for individualizing learning, without the need for dual systems of general and special education” (Villa & Thousand, p. 255). According to experts in collaborative teaming, an effective collaborative teaming process involves regular, positive face-to-face interactions, a structure for addressing the issues, performance and monitoring, and clear individual accountability for agreed-upon responsibilities (Nevin et al.; Salisbury, Evans & Palombaro, 1997; Thousand & Villa, 1992; West & Idol, 1990).

The purpose of this study was to empirically investigate the effectiveness of a general education/special education collaborative teaming process in increasing the social and academic participation of elementary students with significant disabilities and students at risk in general education classrooms. This investigation builds upon recommendations for best practices for collaborative teaming in inclusive classrooms outlined in the existing literature. It differs from previous research in that the collaborative process described in this article provides a detailed and simplified process designed to unify and integrate educational and social supports for students with and without disabilities in the general education classroom. The main elements of the Unified Plan of Support (see Hunt et al., 2001) are (a) regularly scheduled team meetings, (b) development of supports to increase the focal student academic and social participation in the general education instructional activities, (c) built-in accountability system, and (d) flexibility to change ineffectual supports. Most importantly, team members collaborate to create and implement individualized instruction and supports needed to increase the academic success and social participation of the focal students. The roles and responsibilities of general and special educators take on the flexibility needed to jointly address the needs of all the students, as the team members share the responsibility for the students' success.

This model of team collaboration was evaluated through multiple data sources including behavioral observations and team interviews. Triangulation of data sources (Patton, 1990) provided the opportunity for the behavioral data describing students' levels of engagement and social participation to be validated by the team members' descriptions of the quality of the students' classroom participation obtained during the interviews.

METHOD

SETTING

This study was conducted at two elementary schools located in two urban school districts in the San Francisco Bay Area. Each school had been including students with severe disabilities in general education classrooms for 6 and 10 years, respectively. Both schools had a total of five students with severe disabilities, one half-time inclusion support teacher, and three instructional assistants. All participating students were members of two general education classrooms. One student at risk and one of her classmates with disabilities were members of a classroom at one school (Classroom A). Two students at risk and two of their classmates with disabilities were members of a classroom at the other school (Classroom B). A full-time instructional assistant was assigned to each classroom, with each classroom including a total of two students with severe disabilities.

PARTICIPANTS

Students: Classroom A. Jerry was a fourth-grade student of African American descent. He experienced severe physical and speech and language impairments due to cerebral palsy. He was ambulatory and walked with an awkward gait. Fine motor tasks, such as writing on paper, were difficult for him to perform. He had some mild visual impairments but often did not wear his corrective lenses at school. His auditory skills appeared to be in the normal range. Jerry communicated primarily through speech. His expressive communication was limited to names and two-word requests and comments. His difficulty with articulation and modulating his vocal volume made him hard to understand. Jerry was severely cognitively delayed, and his academic curriculum focused on basic skill development (e.g., name recognition, identifying letters and sight words, and counting). Jerry learned new skills best through repetitive practice. He could perform some class routines independently with peer assistance. He was a very social child who often greeted students and teachers.

Ashley was a student of African American descent and a classmate of Jerry's. Her academic skills were below grade level in all academic areas. She had difficulty attending to class lessons and needed frequent prompting and assistance from her teacher to perform tasks. Ashley read at a third-grade level and had difficulty decoding words. She

had difficulty with both composition and spelling. Her penmanship was large and resembled that of a first grader. Ashley had not mastered third-grade math concepts and skills. She interacted primarily with one other student, but had a small group of friends.

Students: Classroom B. Francisco was a fourth-grade student diagnosed with autism. Francisco was Latino. Spanish was spoken in his home; however, English was his primary language. Francisco communicated through speech (two- to three-word phrases), gestures, sign language, picture icons, and written words. He often responded to others with echolalic responses and inconsistently expressed choice or answered “yes/no” questions. His visual and auditory abilities appeared to be within the normal range. He had no significant difficulties in fine or gross motor skills. Francisco independently performed most self-care tasks and familiar classroom routines. He relied on prompts and assistance from others in unfamiliar or unstructured situations. Francisco had a large sight word vocabulary and was interested in books with illustrations. He could not independently compose written work but could copy from an example on the board. He often watched and imitated classmates during class routines and activities but did not engage in lengthy interactions with them. He primarily interacted with the instructional assistant.

Pablo was a classmate of Francisco’s. He was of African American, Latino, and Chinese descent. Pablo had difficulty remaining engaged in classroom activities. His academic skills were below grade level across all curricular areas. Pablo read at a second-grade level and had not yet mastered third-grade math skills (e.g., multiplication facts). He did not enjoy writing and produced little written work without adult support. During large and small group instruction, Pablo had difficulty remaining on task without continual reminders and assistance from adults. He did not participate in class discussions. Pablo was a social child who was often distracted by other classmates’ “antics” during lessons and small group activities.

Juan was the second student in the class with severe disabilities. He experienced motor and speech and language impairments due to muscular dystrophy and had moderate cognitive delays. He had stiff, weak muscle tone and tired easily when performing fine motor tasks. His gait was some-

what awkward. His vision and hearing appeared to be in the normal range. Juan spoke both Spanish and English at school and at home. His receptive language skills appeared to be stronger than his expressive language skills. Juan had difficulty answering questions, making predictions, and problem-solving with language tasks. He had difficulty following multiple-step directions and rarely initiated requests for assistance. He read at a second-grade level in both Spanish and English and could write simple sentences with minimal prompts. He was developing first-grade math skills (e.g., simple addition and subtraction). Juan interacted primarily with his instructional assistant.

Alina was a classmate of the three boys described above. She had been retained due to lack of academic progress the previous year. Alina was born in Pakistan and moved here when she was seven. She spoke Urdu at home and received ESL services twice a week at school. Her instructors and parents did not think that her lack of progress was due solely to second language acquisition issues. Alina read at a first-grade level. Her writing consisted of simple sentences with numerous grammatical and spelling errors. Her math skills were at grade-level; however, she had difficulty with word problems that required reading and problem-solving skills. She was a quiet, well-behaved student who followed class routines and small group activities without difficulty. She lost focus during some class discussions and during lectures that she found difficult to follow.

Educational Teams. The educational teams for each student included the general education teacher, the inclusion support teacher, the child’s parents, and the instructional assistant assigned to each classroom. In addition for Classroom B, a speech and language therapist participated as a team member for two of the students, and an assistive technology specialist served as a team member for the other two students. Both inclusion teachers and the general education teacher for Classroom B had 9 or more years experience implementing inclusive education. It was the first year for the teacher in Classroom A.

INTERVENTION: UNIFIED PLANS OF SUPPORT

Unified Plans of Support (UPS; see Hunt et al., 2001; Hunt, Soto, Maier, Müller, & Goetz, 2002) were developed for the three students at risk be-

cause of academic underachievement and the three students with severe disabilities through the collaborative efforts of their educational teams. The teams met once a month for approximately 1 hr 30 min to develop and continue to refine the support plans. Each UPS was an individualized listing of curricular supports for reading, writing, and math (e.g., adapted materials and assistive technology and/or modified instructional content, performance requirements, or teaching methods; cf., Janney & Snell, 2000) and supports to promote classroom participation and interaction with peers (e.g., partner systems, social facilitation by adults, small group instruction, learning centers, conversation books for the students with disabilities, and support from the instructional assistant for the students at risk). Examples of curricular and participation and interaction supports developed and implemented for each of the six students appear in Table 1.

Curricular adaptations and modifications were designed to support the focus students' full participation in academic activity while working at their individual ability levels and to rely less on individual support from the instructional assistant. Participation and interaction supports were developed to decrease periods of nonengagement in classroom activities, increase the students' attempts to initiate communicative interactions in the context of instructional activities (e.g., asking questions, making comments, answering questions), and increase interactions between the focus students and their classmates.

Structure and Organization of the UPS Meetings. The structure of the collaborative process allowed members of the team to share their knowledge, experience, and skills. Each support item was developed through a process that included sharing ideas and building on the suggestions of others. The collaborative problem-solving process included four key elements: (a) identifying the learning and social profile for each of the focal students, (b) developing supports to increase the students' academic success and social participation in classroom activities, (c) collaborative implementation of the plans of support, and (d) a built-in accountability system (Giangreco, Cloninger, Dennis, & Edelman, 1994; Merritt & Culatta, 1998; Salisbury et al., 1997; West & Idol, 1990).

At the beginning of the first UPS meeting for each student, members of the team reviewed

the academic development of the student in the areas of reading, writing, and math. In addition, they described the extent and quality of the child's participation in classroom activities (e.g., contributing to group discussions, working without support from the instructional assistant, participating in large-group instruction, working collaboratively in small group activities, seeking needed assistance); and their interactions with classmates (e.g., initiating and responding to interactions, participating in conversations, providing and receiving assistance, working collaboratively). The initial support plan was built on that assessment information through a "brainstorming" and consensus process. Each item on the UPS was suggested by individual members of the team. The suggestion was followed by discussion of the effectiveness and feasibility of the support strategy. If the team members agreed on the inclusion of the item, it was added to the student's support plan. The UPS form that guided the discussion was a sheet of paper for listing each support item in the curricular areas of reading, writing, and math. Additional areas included general participation in classroom activities and communication and socialization with peers. There was a grid on the right side of the paper used to identify members of the team responsible for implementing each support. The grid also included a rating scale used each month to evaluate the extent to which each support item was being implemented (i.e., "not at all," "somewhat," "moderately well," and "fully"). The monthly rating procedures prompted team members to more rigorously implement items rated as "somewhat" implemented and provided the opportunity for them to discuss items that were "not at all" implemented. These latter items were often revised or deleted from the plan because they were perceived by team members to be ineffectual or impractical to implement.

Based on the team members' experience implementing each UPS, individual items were sometimes refined, expanded upon as learning occurred, dropped, or additional items were added to the plan during subsequent meetings. University members of the research team joined the school teams for monthly UPS meetings but did not participate in the development of the plans of support. They did, however, provide some feedback to members of the team during the days of observation and data collection and provided reminders to team members of meeting dates and times.

TABLE 1
Sample of Items From Each Student's Unified Plans of Support

<i>Student</i>	<i>Students with Severe Disabilities</i>		
	<i>Participation & Interaction</i>	<i>Reading</i>	<i>Writing</i>
<i>Jerry</i>	<ul style="list-style-type: none"> A weekly support group will meet to encourage peers to interact with Jerry and Jerry to interact with his peers. Peers will be placed at Jerry's table who have positive interactions with him. If the teacher asks Jerry a question during class discussions, it will require a "yes" or "no" response—or she will offer him two to three answers from which to choose. 	<ul style="list-style-type: none"> Jerry will be given picture books during sustained, silent reading time to look at with a peer partner. Jerry will be given symbol stories that he will read independently and with a peer partner. 	<ul style="list-style-type: none"> Jerry will use the computer to write his name and identify letters on the keyboard.
<i>Francisco</i>	<ul style="list-style-type: none"> Adults will prompt Francisco to ask a peer for assistance by signing "ask a friend" or "talk to a friend." The inclusion support teacher will make a photo conversation book for Francisco that will assist him to initiate and maintain interactions with peers. Francisco and his lunch buddies, who will be chosen on a weekly basis, will walk from class to the cafeteria and will eat together (without instructional assistant support). 	<ul style="list-style-type: none"> Francisco's parents will find a reading tutor to work with him two times a week after school. Francisco will be given ability-level books to read with a peer during reading time and to read with his family at home. 	<ul style="list-style-type: none"> Francisco will be given a Polaroid camera to photograph things of interest and use the pictures as writing prompts with peer support during writing centers.
<i>Juan</i>	<ul style="list-style-type: none"> Adults will redirect Juan to ask peers for help when he needs assistance. Disposable cameras will be used by Juan and his family to take photos over the weekend to share in conversation with his friends at school. 	<ul style="list-style-type: none"> Juan will be given leveled-reading software (2nd grade) on the computer weekly for both reading and reading comprehension practice. Adults will arrange for Juan to read a story to a peer at least 3 times a week. 	<ul style="list-style-type: none"> Juan will be given the photos he has taken with his family and at school to use as writing prompts when doing writing assignments. Juan will complete some of his writing assignments using an Alphasmart and with support from a peer.
			<i>Math</i>
			<ul style="list-style-type: none"> A number and sentence schedule will be created that Jerry will complete across the day with a partner and review with the partner at the end of the day. With the peer partner for the day Jerry will use computer software to develop basic math skills beginning with matching numbers to items.
			<ul style="list-style-type: none"> With a peer and with adult support Francisco will practice money recognition, time-telling, and simple addition during math time. Francisco will use computer math programs with a peer to practice simple math skills.
			<ul style="list-style-type: none"> Juan will use math software to practice math skills, working independently or with a peer.

TABLE 1 (CONTINUED)
Sample of Items From Each Student's Unified Plans of Support

<i>Student</i>	<i>Students at Risk</i>		
	<i>Participation & Interaction</i>	<i>Reading</i>	<i>Writing</i>
Ashley	<ul style="list-style-type: none"> The special education instructional assistant will support Ashley and/or prompt a peer to assist her. Ashley will work at the computer each day alone or with a peer to further develop academic skills. 	<ul style="list-style-type: none"> Ashley's mom will read with her each day. The teacher will give Ashley's mom a written structure to assist Ashley to write book reports. 	<ul style="list-style-type: none"> Ashley will be given a modified, shortened spelling list to highlight word patterns. The inclusion teacher will work with Ashley on each week's spelling words.
Pablo	<ul style="list-style-type: none"> Seating placement changes will be made for Pablo in small and large group contexts to minimize distractions from peers. The instructional assistant will check in with Pablo to see if he is understanding lessons or needs help. Peer tutoring opportunities will be arranged so that Pablo can tutor other classmates or students in a lower grade. 	<ul style="list-style-type: none"> Pablo will read books at his reading level and talk about the books with his parents on a daily basis. Pablo will read to another student using books at his reading level. 	<ul style="list-style-type: none"> Pablo and a partner will work with multiplication flash cards on a regular basis at school and at home. A classmate will read math directions and explain if necessary when Pablo needs help with math worksheets.
Alina	<ul style="list-style-type: none"> Alina will be encouraged to ask a friend for help whenever she needs it. Alina will be encouraged to tell the teacher when she does not understand something during a large group lesson. 	<ul style="list-style-type: none"> Alina will work with a trained peer partner using "Hooked on Phonics" to practice reading skills on a regular basis. Alina will frequently take a book home to read with her sisters. 	<ul style="list-style-type: none"> Alina will be taught to use both "spell check" and "grammar check" when using word processing programs. Alina will take the Alphasmart home to write stories with her family.
			<ul style="list-style-type: none"> Alina will use multiplication flash cards with a classmate to practice the multiplication tables. A classmate will go over written math directions when Alina needs help on math worksheets.

Development of the UPS for Each Student.

During the first UPS meeting to develop the initial plan of support, the project directors modeled the process. Following the review of the student's ability and needs in each of the areas described above, and in the context of a "brainstorming" discussion, the members of the educational team were asked by the project directors to identify educational and social supports for the students, moving through the categories, of reading, writing, math, interaction with peers, and general participation in classroom activities. In subsequent meetings, the general education or inclusion support teachers led the discussion. The UPS was reviewed, levels of implementation were evaluated, additional items were added, and previous items were refined or deleted. Following the initial UPS meeting, members of the university team observed, but did not contribute to the discussion.

During the first 45 min of the 1 hr 30 min meeting time the team focused on the student with disabilities and was joined by the student's parent(s). During the second 45 min the team focused on the student at risk and was joined by that child's parent(s).

STUDENT PERFORMANCE MEASURES AND DATA COLLECTION PROCEDURES

Design. Student outcome variables were investigated using a combination of data sources including (a) systematic observation of the levels of engagement and interaction patterns of the focus students utilizing a multiple baseline design across pairs of students (i.e., one student at risk and one student with disabilities; see Figures 1-3; Kazdin, 1982), and (b) team interviews to elicit team members' perspectives on the academic growth and social participation of the students. The team interviews were conducted once during baseline (i.e., 1 week before implementation of the intervention) and once at the end of the intervention condition.

Levels of Engagement and Interaction Patterns: Observational Measures. The Interaction and Engagement Scale (IES; Hunt et al., 1996; Hunt, Farron-Davis, Wrenn, Hirose-Hatae, and Goetz, 1997) was designed to measure interaction and engagement variables and utilizes a partial interval recording procedure. Each 10-min observational period consisted of twenty 30-s intervals. Within each interval there was 15 s for observation and 15

s for recording. During each interval the observer noted the *first* communicative interaction that involved the focus student. The identity of the partner in that interaction was noted (e.g., the teacher, another student, or the instructional assistant) as well as the individual who initiated the interaction (i.e., the focus student or the partner). The communicative function of the interaction (i.e., a request, protest, comment, or assistance) was identified as well as the quality of the interaction (i.e., positive, neutral, or negative). Engagement variables were also measured including the level of engagement (i.e., active, passive, or not engaged) and the grouping pattern (i.e., student alone or with a group) that occurred during the majority of each interval. A copy of the Interaction and Engagement Scale is available from the first author.

Each pair of students was observed approximately once a week from November through April during an approximately 2-hr session. Disruptions of this schedule occurred because of holidays, special school events, and student absences. One classmate of the focus students was also observed using the same instrumentation and procedures. Classmate data were used to identify normative patterns for each of the dependent variables. Three participating classmates were selected by the general education teachers who were asked by project staff to identify three students in the class who were "average socially and academically." One of the selected students was observed each session; and the order of observations of each of the three students was rotated across days.

Nine 10-min observations (3 for each focus student and 3 for the classmate) were spaced across an approximately 2-hr session, with each period separated by an approximately 2-min break. The observations were alternated between each of the focus students and his or her classmate. The order of observations (i.e., the first student to be observed) was systematically rotated across sessions. The observational period was scheduled during morning academic activity and did not include recess breaks. Students in the two classrooms quickly adjusted to the presence of the data collectors who were introduced by their teacher as visitors who would be observing in their classroom during the school year.

During baseline and after each UPS was implemented, an independent observer (the senior investigators) joined the data collectors on an average

of 34% of the sessions (33% for Jerry and Ashley, 41% for Francisco and Pablo, and 29% for Juan and Alina). The level of agreement between the primary data collector and the independent observer was calculated by dividing the number of agreements on the occurrence of variables during each observational interval by the total number of agreements plus disagreements, times 100%. The mean percentage of interobserver agreement on the presence of each of the interaction and engagement variables targeted by the Interaction and Engagement Scale was 97.4% (range, 91.7% to 100%); 98.8% for communicative partner (range, 96% to 100%); 96.2% for initiation of an interaction (range, 88% to 100%); 95.5% for acknowledgment of the initiation (range, 83% to 100%); 95.4% for communicative function (range, 78% to 100%); 99.5% for the quality of the interaction (range, 88% to 100%); 96.7% for the level of engagement (range, 83% to 100%); and 100% for student grouping patterns.

Data from the Interaction and Engagement Scale (IES) observations can be analyzed in a variety of ways; however, predicted outcomes for the current study were the following: (a) decreases in the levels of nonengagement in ongoing classroom activities; (b) increases in interactions initiated by the focus students (e.g., making comments, asking questions); and (c) increases in interactions with peers or the classroom teacher that were positive in nature.

The two data collectors were experienced in the procedures for in-class data collection and had used the IES to collect behavioral data in previous studies (i.e., Hunt et al., 2001; Hunt et al., 2002). They had Master's Degrees in Special Education and experience as teachers of students with severe disabilities.

Levels of Engagement, Interaction Patterns, and Academic Progress: Team Interviews. Team members' perceptions of changes in the social/classroom behaviors and the academic progress of the three focus students were assessed through an "open-ended" interview process implemented two times in the course of the study: approximately 1 week before implementation of the UPS and at the end of the intervention condition. The question "How is _____ doing?" was asked across the areas addressed by each UPS (i.e., reading, writing, math, classroom participation, and social interaction with peers). Responses were

audio-taped and transcribed verbatim for later analysis.

INTERVENTION FIDELITY: IMPLEMENTATION OF ITEMS ON THE UPS

The extent to which items on the UPS were implemented (LeLaurin & Wolery, 1992) was evaluated during each monthly UPS meeting that followed development of the original support plan. Team members and university project staff who observed in the classroom were asked to rate the extent to which each item on the support plan was being implemented. Rating options were "not at all," "somewhat," "moderately well," and "fully." A consensus process was used in which each of the educational team members and the university observers reported their rating for each item. All members of the team agreed on an implementation rating for all UPS items across each of the monthly meetings; however, if consensus had not been reached, the majority opinion would have been used to rate an item.

ECOLOGICAL VALIDITY OF THE UPS PROCESS: PARTICIPANTS' PERSPECTIVES

The ecological validity of the UPS process—that is, the extent to which the collaborative teaming process was natural to the existing school culture and useful to the school community (Gaylord-Ross, 1979)—was evaluated through a group interview conducted at the end of the study. Questions were designed to elicit their perceptions of the UPS process for the following topics: (a) benefits of the UPS process, (b) limitations of the UPS process, and (c) recommendations for changes in the UPS process.

The group interview was moderated by a senior investigator. During the interview the moderator probed speakers to clarify their responses or provide more detail. The responses of the team members were audio-taped and transcribed verbatim for later analysis.

DATA ANALYSIS

Behavioral Measures. At the end of each observational session, data collectors summarized for the two focus students and their classmate the percentage of total intervals of observation (there were 3 sets of 20 intervals for each student) in which the following targeted behaviors occurred: nonengagement, focus student-initiated reciprocal interac-

tions (i.e., requests, protests, comments), and reciprocal interactions with other students.

Interviews. The four members of the university team analyzed the transcripts from the two interviews (the first during baseline and the second at the end of the intervention condition) utilizing a group discussion and consensus process. Team members read each transcript from the set of interviews and, using a line-by-line analysis (Strauss & Corbin, 1990), identified themes representing the perceptions of the interviewees within the academic categories of reading, writing, and math and the categories of classroom participation and social interaction with peers. A discussion followed in which agreements and discrepancies in the analyses across team members were discussed. A summary listing of themes within each category for each of the interviews was developed. Finally, team members together reviewed the identified themes, eliminating redundancy, and identifying and interpreting patterns across categories, across interview periods, and across students (Krueger, 1998, Morgan, 1993). The general education teacher, inclusion support teacher, and instructional assistant for each of the teams provided "member checks" of the accuracy of the analysis by reviewing the outcomes and providing feedback (Lincoln & Guba, 1985).

These procedures were also used to analyze the transcripts from the interviews of the three educational teams at the end of the study to establish the ecological validity of the intervention. The categories for the initial analysis corresponded to the structure of the interview questions. "Member checks" of the accuracy of the final analysis were provided by the same members of the educational teams.

RESULTS

STUDENT OUTCOMES: LEVELS OF ENGAGEMENT AND INTERACTION PATTERNS

Observational Outcomes. Before implementation of the UPS for the three students with disabilities and their classmates at risk, the percentage of intervals in which the students were not engaged in classroom activity was substantially higher than the average rates of nonengagement for their classmates (see Figure 1). Following implementation of the targeted academic and social supports, nonengage-

ment levels decreased from an average of 35%, 27%, 40%, 39%, 37%, and 23% for Jerry, Ashley, Francisco, Pablo, Juan, and Alina, respectively, to between .2% to 5% for each of the students. These levels of nonengagement are commensurate with those of their peers.

In addition to the substantial decreases in nonengagement in classroom activities, the students were more often *initiating* interactions with their classmates and teacher after implementation of the UPS (see Figure 2). During baseline sessions, the average percentage of intervals of interaction were .7%, 3%, 5%, 14%, 2%, and 11% for Jerry, Ashley, Francisco, Pablo, Juan, and Alina, respectively. After implementation of the UPS, interactions levels increased to between 18% and 29% for each of the students.

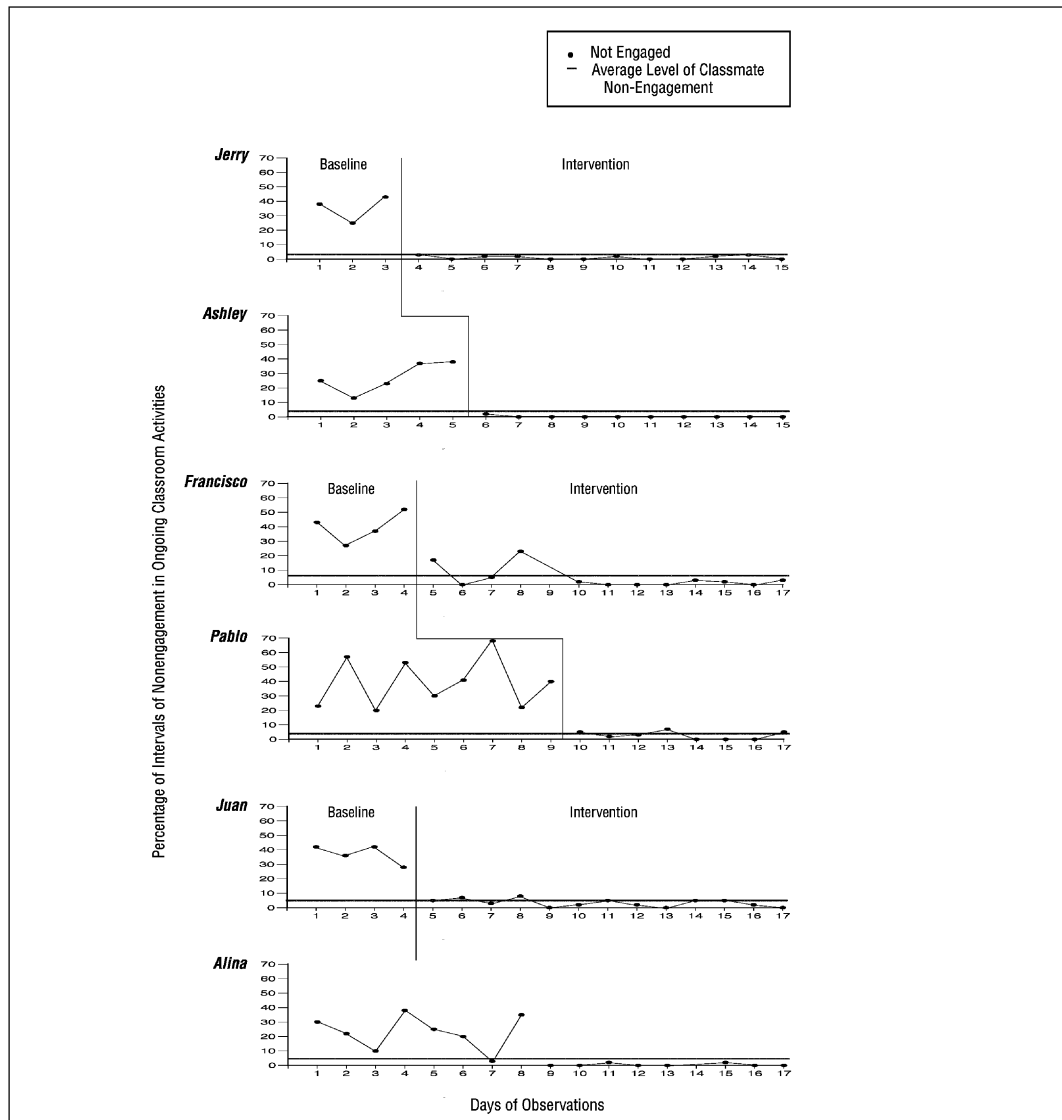
Interactions with another student increased to levels higher than those of their classmates after implementation of the support plan (see Figure 3). During the baseline condition the percentage of intervals of reciprocal interactions with another classmate were .7%, 6%, 3%, 13%, 2%, and 10% for Jerry, Ashley, Francisco, Pablo, Juan, and Alina, respectively. After implementation of the support plan, levels increased to between 32% and 53% for each of the students.

Interview Outcomes. Analysis of the perspectives of educational team members produced themes related to the students' participation in classroom activities and their interaction patterns with their classmates and teacher associated with implementation of the UPS. Patterns of change common across students included the following: (a) increased assertiveness in classroom interactions and offers to take leadership roles during activities (exception, Jerry and Ashley); (b) demonstrations of pride in academic progress; (c) increased positive interactions and collaborative activity with classmates; (d) increased initiation in asking for help (exception, Jerry); and (e) for the students at risk, enjoyment in helping their classmates during some classroom activities.

STUDENT OUTCOMES: ACADEMIC PERFORMANCE

Interview Outcomes. Patterns of change in academic performance described by team members that were

FIGURE 1
Percentage of Intervals of Nonengagement in Ongoing Classroom Activities



present across all students included the following: (a) increased effort to learn and participate in academic activities; (b) increased reliance on peer, rather than adult, support; (c) increased academic productivity; (d) increased persistence to tackle difficult tasks (exception, Jerry); (e) increased motivation to participate in academic activities and decreased distractibility during those activities; (f) demonstration of academic progress at home (exception, Jerry); and (g) for the students at risk and Juan, increased pride in academic accomplish-

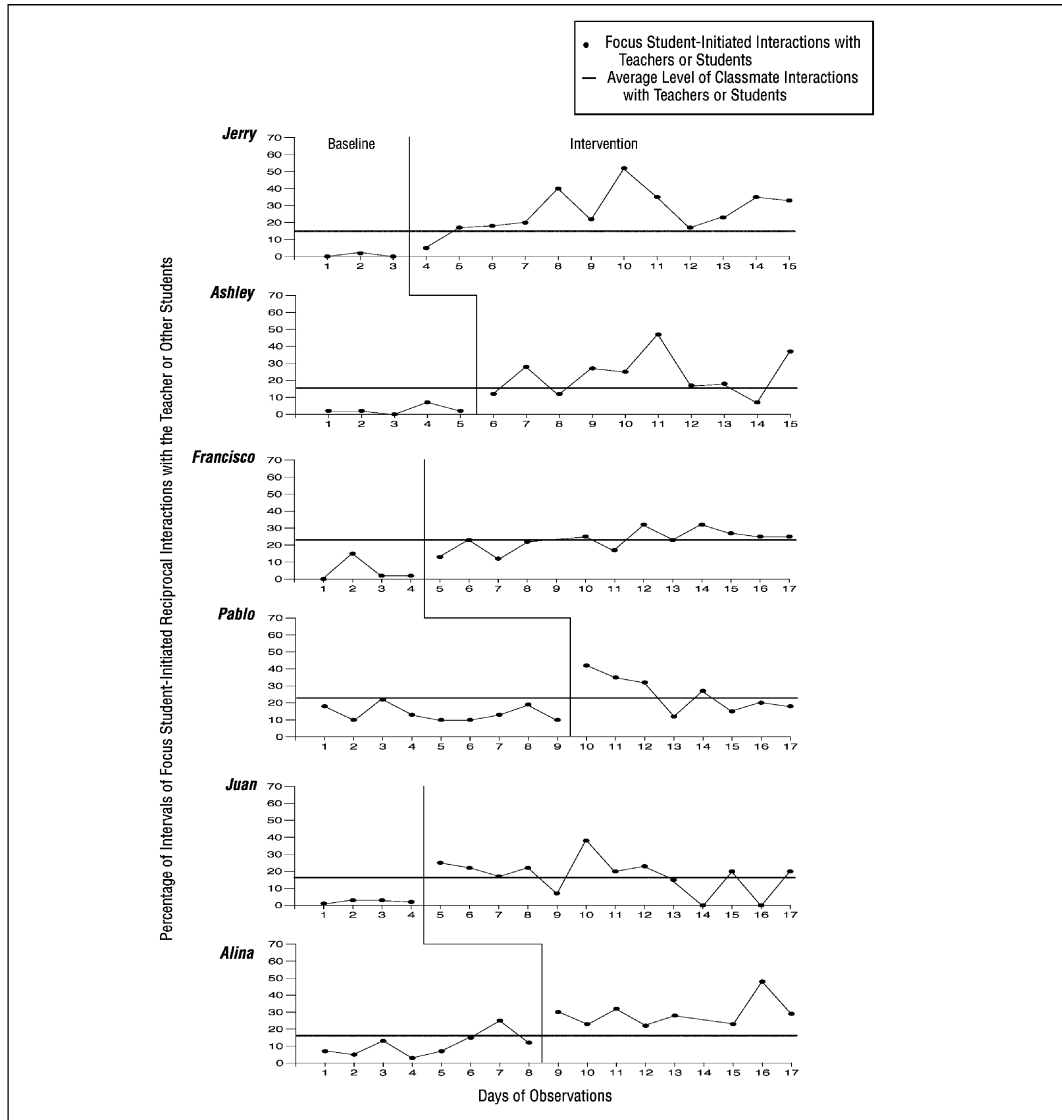
ments. (Tables providing detailed descriptions of changes in the students' engagement levels, interaction patterns, and academic performance are available from the first author upon request.)

INTERVENTION FIDELITY: IMPLEMENTATION OF THE UPS

There were four to five UPS meetings for each of the focus students. Implementation ratings for each item on each student's UPS gathered at the

FIGURE 2

Percentage of Intervals of Focus Student-Initiated Interactions to the Teachers or Other Students



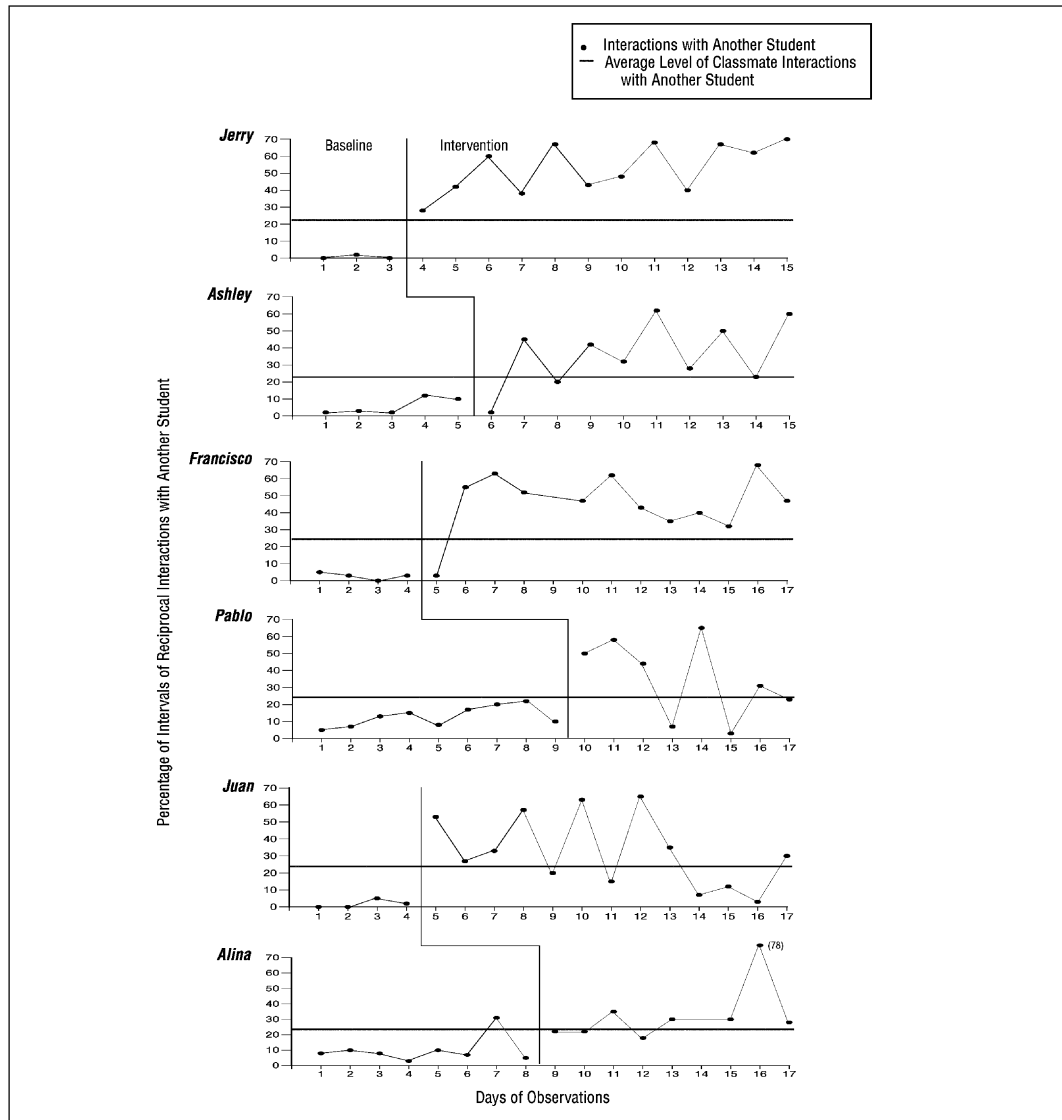
first meeting following its development were the following: (a) 4 of the 6 supports for Jerry were “fully implemented,” 1 was implemented “moderately well,” and 1 was not implemented; (b) 4 of the 7 supports for Ashley were “fully implemented,” 3 were not being implemented; (c) 9 of the 11 supports for Francisco were “fully implemented,” 2 were “somewhat implemented”; (d) all 9 of the supports for Pablo were “fully implemented”; (e) 6 of the 10 supports for Juan were “fully implemented,” 3 were “somewhat imple-

mented,” and 1 was not being implemented; and (f) 8 of the 9 supports for Alina were “fully implemented,” and 1 was implemented “moderately well.”

Implementation ratings of each item on each UPS gathered at the last meeting were the following (note: the number of items on each UPS may have changed from the first meeting because of the additions and revision process): (a) all 12 of the supports for Jerry were “fully implemented”; (b) all 7 of the items for Ashley were “fully implemented”;

FIGURE 3

Percentage of Intervals of Reciprocal Interactions With Classmates in a Group or Individually



(c) all 14 of the items for Francisco were “fully implemented”; (d) 13 of the 14 items for Pablo were “fully implemented,” 1 was implemented “moderately well”; (e) all of the 11 supports for Juan were “fully implemented”; and (f) 10 of the 11 items for Alina were “fully implemented,” and 1 was implemented “somewhat.”

ECOLOGICAL VALIDITY: PARTICIPANT PERSPECTIVES ON THE UPS PROCESS

Analysis of the data from the group interviews conducted at the end of the study generated themes

that were grouped into three categories: (a) benefits of the UPS process identified by each of the three educational teams, (b) benefits identified by teams at either Classroom A or Classroom B, and (c) recommendations for changes in the process.

Benefits of the UPS Process Expressed by Both Teams. Six themes emerged during the analysis process that were common to teams from both schools. First, the team members suggested that the collaborative process allowed participants to share their expertise and experience to support student progress. A classroom teacher commented, “With

these meetings you make sure it's a collaborative effort and that everybody is informed. It's not saying 'the child is not performing'; instead it's about what we can all do to contribute to get this child's needs met."

Second, it was the team members' perspective that the regularly scheduled, interactive meetings provided the opportunity for educators to solicit parent input and expertise to assess the performance and progress of their child and develop appropriate supports to increase their child's success at school and at home. Third, the team members felt supported by other members of their team as they developed and implemented the UPS.

The fourth benefit identified was the effect the UPS had on the academic and social progress of the students. A parent noted, "[The UPS process] helps them socially, and it helps them emotionally, and it helps them cognitively. It helps them feel a part of the class, and I think it builds their self-esteem."

The final two benefits identified by team members were related to the meeting format and use of classroom resources. It was suggested that the regularly scheduled UPS meetings provided opportunities to monitor student progress and revise supports as needed. It was also noted that the expertise of the special education staff was used to effectively support the students at risk, thereby unifying general and special education resources to meet the needs of all students in the classroom.

Benefits Specific to Individual Schools. Six additional benefits were identified by teams at either Classroom A (1 benefit) or Classroom B (5 benefits). Members of Team 1 from Classroom A suggested that, through the UPS process, peers were encouraged to support students with disabilities. This is another example of using existing classroom resources to meet the needs of a diverse population of students.

Two of the benefits discussed by Classroom B teams were related to the expanded role and vision of the specialists on the team (i.e., the speech and language pathologist and the instructional technology technician); specifically, it was the team members' perspective that (a) the UPS meetings gave the specialists a more global view of classroom activities and individual student support needs; and (b) the specialists became a resource to all students in the classroom, rather than only the students on their caseload. One of the specialists

commented, "I think a lot of the time we took ideas that we came up with in the UPS meetings and just started naturally applying them to other kids."

Three additional benefits identified by the Classroom B team members were related to the structure of the UPS process: that is, (a) the UPS structure provided a built-in accountability system; and (b) the structure allowed for ongoing revisions of the support plans to adapt to the students' needs and progress. The final benefit noted by the team members was the nonjudgmental nature of the UPS discussions, which they considered to be an essential component of the collaborative planning meetings.

Modification to the UPS Process. Team 1 from Classroom B suggested including more opportunities for team members to analyze why various supports were effective, an analysis that might inform the development of additional supports and could easily be incorporated into discussions at the monthly UPS meetings.

DISCUSSION

Three school teams consisting of a general education teacher, the inclusion support teacher, an instructional assistant, a specialist (Classroom B teams), and parents developed and implemented support plans for six students whose social participation and academic engagement were substantially compromised. Only three students received special education services. The other three were at risk because of academic underachievement and were not receiving any additional services prior to this study. Our findings, based on behavioral observations within the context of a multiple baseline design, suggest that consistent implementation of the UPS developed through a collaborative teaming process increased the students' engagement in classroom activities (with changes commensurate with the behavior of their peers). Increases in engagement may have been due to increased participation in interactive, collaborative activities with adaptations and support from peers, use of assistive technology with peer partners, and support from special education instructional assistants for the students at risk. There was also an increase in interactions initiated by the focus students. Implementation of the UPS with items including interactive activities, students working in pairs or small

groups, use of technology with peer partners, and students at risk participating as tutors for classmates may have contributed to the change. Finally, interactions with classmates rose to levels substantially above those of their peers. These outcomes may have been due to the extensive use of peer partners and prompting to seek out peer support as elements of the plan of support.

In addition to an analysis of changes in behavioral patterns, we elicited the perceptions of members of the educational teams on changes in student performance. All three teams described gains in self-confidence, assertiveness, and social interactions with classmates that they attributed to implementation of the UPS. They also described the progress the students made in reading, writing, and math after the academic modifications, adaptations, and adult and peer supports were implemented.

The three teams who participated in this study included parents as equal and full partners. Parent participation in the teams was instrumental to the development and implementation of the unified plans of support. The UPS process provided a forum for the parent-professional partnership mandated by federal law and recommended by best practices (e.g., Turnbull & Turnbull, 2001). It is well recognized that the education of children with disabilities can be more effective when parents have meaningful opportunities to participate in the education of their children at school and at home. The collaborative teaming process afforded by the UPS provided the parents with opportunities for shared decision making (Kalyanpur & Harry, 1999). The meetings were conveniently scheduled and occurred at times when parents were able to attend. Interpreter services were available for one of the families. Parents received reminder calls about meeting dates and times 1 to 2 days before each meeting. The parents attended all UPS meetings. This contrasts with the generally accepted belief that parents from nondominant communities have a lower level of participation in the education process of their children. Indeed, all our six focal students belonged to nondominant communities, yet their parents were full partners in the process.

A major limitation of this study is the lack of a fiscal model to provide the financial resources needed for general education/special education collaborative efforts. Implementation of the UPS model schoolwide would require a redesign of staff

roles and responsibilities, budgetary increases to reallocate funds to support across-program collaboration, and the establishment of regularly scheduled team planning meetings to develop, evaluate, and revise the unified plans of support. A second limitation is the small-sample nature of the study. It restricts its investigative focus to three educational teams and six students; and, although it provides insight into the collaborative process, the ability to generalize beyond the small sample is limited. A third limitation is the variability in performance on two of the behavioral measures for Pablo and Juan: initiated interactions and interactions with classmates. During the intervention condition these behaviors fluctuated from above the average rates of their classmates to well below; however, there was a substantial average increase above baseline levels for both students. Finally, it should be noted that the descriptions shared by team members of changes in student performance and their suggestions of causal linkages with implementation of the UPS represent the perceptions of those team members. We are not interpreting their statements as evidence of causality.

CONCLUSIONS

This study investigated the consolidation of human resources available in the classroom to increase the ability of a general education classroom to accommodate a heterogeneous student body. As schools become more diverse in terms of students' national origin, linguistic and cultural backgrounds, family composition, and ability levels, the adult members of the school community must unite around a vision of academic success and full social participation and belonging for all students (Hunt et al., 2000). It has been suggested that a key to successfully meeting the educational needs of all students is the development of collaborative relationships among the school staff, so that expertise may be shared (Villa & Thousand, 2000). Our findings suggest that the UPS teaming process made it possible to focus efforts on those students who required intensive and comprehensive plans of support for success and provided the general education teachers with additional resources to implement the support plans. One possible reason for these positive outcomes may be that members of the collaborative teams had *time to reflect together* on an ongoing basis. The need for compensated

time for regularly scheduled team meetings appears to be an essential component of the collaborative teaming process (Doyle, York-Barr, & Kronberg, 1996; Rainforth & York-Barr, 1997; Snell & Janney, 2000; West & Idol, 1990). It is incumbent upon the school organizational leadership to set an expectation for collaboration and to explicitly create opportunities, incentives, rewards, and training for such collaboration (Nevin et al., 1990). Methods for promoting collaborative teams within schools have been identified and include flexibility in teaching assignments, formation of teaching teams, and job redefinition (Miles & Darling-Hammond, 1998; Nevin et al., 1990). Responding to the educational needs of students at risk and those with disabilities requires schools to unify and reallocate resources.

The collaborative process evaluated here provides only one example of ways in which school programs and faculty can be integrated to meet the needs of all students. Unfortunately, the number of schools implementing across-program collaborative models to meet the needs of diverse populations of students continues to be low (Lipsky & Gartner, 1997; Miles & Darling-Hammond, 1998). Human and financial resources for categorical programs continue to be targeted for specific populations of students and often promote the segregation of students across cultural, language, and ability differences. Although promising new opportunities for coordinating federal education program funds are now available, administrative challenges exist to the widespread implementation of consolidated programs. Research is needed to document the effectiveness of various models of collaborative teaming, but the most powerful catalyst for change will be the commitment of educators and parents to create school communities in which human and financial resources work together to address the needs of all students.

IMPLICATIONS FOR PRACTICE

Our initial thoughts regarding practical implications focus on the need for collaborative teaming between families, general education, and special education staff so that expertise and responsibility for the success of all students can be shared. The UPS teaming model provided the educational teams with a regularly scheduled opportunity to

hear from one another and to engage one another in the process of collaboration. One important feature of the collaborative process was the critical role played by parents in the development and implementation of the plans of support. Another important feature of the UPS process is the flexibility afforded to team members to review the practicality and applicability of suggested supports. Those supports that are found no longer useful are removed from the plan.

Finally, it appears that resource reallocation is critical to the ability of the members of educational teams to support one another and to meet the needs of all students—whether with disabilities or at risk—in the general education classroom. Reallocation is feasible when valuable human and financial resources that are tied to specific categorical programs are creatively shared for the good of all students in the classroom. There are some practical strategies that schools can implement toward this end. For instance, in our study the instructional assistants that were financially tied to a specific student supported the general education teachers in their inclusive efforts and acted as mediators between the focus student and his or her peers. The special education staff—speech and language clinicians, assistive technology specialist—who provided in-classroom intervention for a selected group of focus students acted as resources available to everyone in the classroom by including in their intervention all those children in the classroom who experience language delays or physical access restrictions. In addition to being financially and practically viable, sharing human resources created a strong sense of community in the classrooms where everybody belonged and was supported when needed.

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