# Access to the Core Curriculum

*Critical Ingredients for Student Success*

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ABSTRACT

Access to the core curriculum for students with disabilities has been a goal of many practitioners and a focus of much research. The purposes of this study were to describe the ways in which students with significant disabilities accessed the core curriculum and to identify the services and supports necessary for participation in general education classrooms. The experiences of three students with significant disabilities (one elementary, one middle school, and one high school) who had been members of general education classrooms in urban schools for at least 3 years are described. Four themes emerged: (a) individualized, content-specific accommodations and modifications; (b) collaboration among the teaching team, (c) involvement of peers; and (d) a disconnect between the IEP and curriculum and instruction. Implications for instructional design and teacher roles are discussed.

IN MANY DISTRICTS, EDUCATING STUDENTS WITH DISabilities in separate buildings is a thing of the past. Many students with disabilities attend schools geographically close to their homes, and large numbers of these children attend the school they would attend if they were not disabled (U.S. Department of Education, 1997). A growing number of general and special education teachers have gained experience and appreciation for expanding interactions among students with and without disabilities (Jorgensen, 1998; Kennedy & Itkonen, 1994). Children with significant disabilities can now experience the full range of interactions and friendships with their peers when attending inclusive schools (Meyer, Park, Grenot-Scheyer, Schwartz, & Harry, 1998).

However, the mere physical placement of students in general education classrooms and the assigning of an aide to them does not comprehensively address the needs, supports, and accommodations required by law and common sense (Fryxell & Kennedy, 1995). Federal law no longer limits the discussion of least restrictive environment (LRE) to physical placement in the general classroom. Current revisions to the law indicate that students with disabilities must have access to the core general education curriculum. Further, if students with disabilities are to participate in the standards-based reform movement, access to the core curriculum is increasingly essential (McDonnell, McLaughlin, & Morison, 1997; Roach, 1996).

Access to the core curriculum for students with disabilities has been a goal of many practitioners, a focus of much research (e.g., Buswell, Schaffner, & Seyler, 1999; McGregor & Vogelsberg, 1998; Udvari-Solner, 1996), and a critical addition to the Individuals with Disabilities Education Act (IDEA) Amendments of 1997. Baumgart et al. (1982) were among the first to propose a comprehensive method for considering the curriculum accommodations and modifications necessary for students with significant disabilities to participate in general education classes. The principle of partial participation was a response to four frequently cited reasons for maintaining restrictive settings: the developmental age hypothesis, the all-or-nothing hypothesis, the independent performance hypothesis, and the prerequisite skills hypothesis. The principle of partial participation was introduced to circumvent these paradigms, which held personal achievement in abeyance. Baumgart et al. advocated a wide range of school and community experiences for all persons with disabilities, beginning at a young age and progressing through valued, age-appropriate experiences and environments. They further identified a process to individualize adaptations that


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allow students "to participate at least partially in a particular chronological age-appropriate and functional activity" (p. 20). This principle was revisited in 1991 (Ferguson & Baumgart, 1991), and specific recommendations were made to ensure that opportunities for participation were not missed. Specifically, Ferguson and Baumgart advocated for meaningful participation in curriculum activities for students with significant disabilities.

Over the past 2 decades, several research reports and books have been written that provide further information on the process for creating curriculum adaptations (Janney & Snell, 1997; Jorgensen, 1998; Udvari-Solner & Thousand, 1996). Udvari-Solner (1995) developed a decision-making process for curriculum adaptations. This process included the identification of goals and objectives, articulation of the expectations for the student's performance, determination of the content to be taught and instructional strategies used, selection of specific adaptations, and evaluation of the effectiveness of the adaptations.

Several professional resources have been developed to explain the process of curriculum design and accommodation (e.g., Falvey, 1995; Fisher, Sax, & Pumpian, 1999; Jorgensen, 1998; Villa & Thousand, 1995). Research on accommodations and modifications for students with mild disabilities is generally available (Schumm & Vaughn, 1995; Waldron & McLeskey, 1998). However, research is just beginning to emerge related to the implementation of curriculum accommodations and modifications for students with significant disabilities. For example, Ryndak, Morrison, and Sommerstein (1999) provided a case study of an adolescent woman with a significant disability who accessed literacy instruction in a general education classroom. They described the curriculum process used to support this student and how her experiences in the general education classroom changed over time.

Remarkably few studies address the issue of access to the core curriculum for students with significant disabilities. Some question the wisdom of an inclusive approach, and others wonder if students require additional instruction that is not available in the general education classroom (e.g., Fuchs & Fuchs, 1995; Shanker, 1995). The present study focuses on the ways in which students with significant cognitive disabilities have accessed the core curriculum in general education classrooms.

## Method

### Approach

Although traditional, quantitative approaches to measurement are appropriate for evaluating activities and behaviors that can be counted or measured, they are less effective for analyzing complex, multidimensional characteristics of a phenomenon (Janesick, 1994). For this reason, a grounded-theory qualitative approach was selected to study access to the core curriculum for students with disabilities (see Glaser & Strauss, 1967, for a discussion of grounded theory). Focusing the study in this way made it possible to directly record the experiences of students, teachers, and family members regarding the benefits and limitations of service delivery systems, formal and informal support, and resource use.

### Participants

Nine special education teachers with experience in inclusive education from nine urban schools (three high schools, three middle schools, and three elementary schools) in two states were asked to nominate students with significant disabilities who received their special education services in general education classes. From the potential pool of 182 students, 3 students were selected: 1 from elementary school, 1 from middle school, and 1 from high school. Of these 3 students, 2 were female and 1 was male. Parent permission was obtained for each student. This selection process ensured that a cross-section of ages was represented. During the time of the observations, Lillian (see Note) was in 3rd through 5th grades in Florida, Marshawn was in 6th through 8th grades in California, and Heather was in 10th through 12th grades in California. Each of these students had been identified under federal definitions as having a significant cognitive disability (severe to profound mental retardation) and was a full-time member of general education classes.

**Lillian.** Lillian was 8 years old, White, and in third grade at the start of this study. Lillian had a rare migratory brain disorder that affected her speech and language, motor skills, and cognition. She communicated mostly through gestures and expressions. Because of her significant cognitive disability, she met the federal definition of having a severe disability. Lillian had limited experience with general education classes until the middle of her third-grade year. Prior to third grade, Lillian had been in special day classes with other students who had significant cognitive disabilities and challenging behaviors. During her third-grade Individualized Education Program (IEP) meeting, Lillian's mother requested full-time placement in general education for her daughter. At that point, Lillian's mother could no longer reconcile the segregated school day but integrated life that Lillian led. As a result of this IEP meeting, Lillian became the first student with a significant disability to be educated in general education classes at her K–3 school. At that time 1,200 students attended the school, and 18% of them received special education services due to the regional nature of the service delivery model.

The following school year, Lillian and all the others in her class moved to the Grades 4–6 school in the neighborhood. Eight hundred students attended this urban intermediate-level school, and 11% of them received special education services. Several students with significant disabilities were educated in general education classes at this school. The spe-



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cial education teacher's role in the school was that of curriculum designer and coordinator of supports. Grade-level teams designed thematic units, and teachers assisted one another in both curriculum and instruction. In addition to classroom activities, all students in the school attended science labs, computer labs, and discovery classes such as art, music, and physical education. Lillian participated in each of these activities with her peers. Her IEP goals and objectives during her fifth-grade year included becoming oriented to and increasing mobility on the school campus; requesting assistance; improving sight reading; interacting socially with peers and adults; and using computers, IntelliKeys™, and picture schedules to communicate.

**Marshawn.** Marshawn was 12 years old, African American, and in sixth grade at a local middle school at the start of this study. He had 3 years of experience in general education classes prior to transitioning to the middle school in sixth grade. His middle school had 1,400 students, and 9.5% of them received special education services. Students at this school spoke 17 languages, and no ethnic majority existed. Marshawn's inclusion began when his mother attended a local conference on inclusive education sponsored by San Diego State University. One of the presenters was a special education teacher who explained the ways in which she modified the curriculum for students with disabilities in her role as an itinerant teacher. At the end of the workshop, Marshawn's mother talked with the special education teacher and learned how to access the general education environment for her son. Marshawn had been educated in general education classes since then. Marshawn attended seven classes per day with his peers throughout his 3 years at this middle school. He communicated with others by making eye contact with pictures or by using a switch-operated voice output device. Marshawn had very little volitional movement, used a wheelchair, and required assistance with mobility and eating. Similarly to Lillian, Marshawn was identified as having a significant cognitive disability and had once been in a special school for students with significant disabilities. His IEP objectives during eighth grade included making choices with his eyes, completing class assignments, improving his range of motion, effectively using his speech output device, and initiating conversations.

**Heather.** Heather was 15 years old, Filipino, and in 10th grade at the start of this study. She had had 1 year of experience in high school general education classes. Heather had cognitive disabilities, and she was legally blind but could see large images and print. Heather was shy but had one close friend from her neighborhood. During ninth grade (Heather's first year of inclusion), these two girls were able to take a class together for the first time.

Prior to her high school experience, Heather was in a special education class for students with multiple and severe cognitive disabilities. Beginning with her first day of ninth grade, Heather attended all general education classes due to the service delivery system that existed at her local high school (her middle school had been in a different school district). More than 2,000 students attended this school, and all 26 students with significant disabilities were educated in general education classrooms. Heather's mother was willing to "try out inclusion for a few weeks" before Heather's intake IEP meeting was scheduled in October of her 9th-grade year. During the initial IEP meeting, Heather's mother expressed satisfaction with the process thus far. She approved of inclusion for a year, but wanted to reserve the right to remove her daughter if her functional skills deteriorated. Heather attended general education classes throughout all 4 of her high school years, including classes in English, geography, algebra, biology, physical education, and 3-D art and animation. Her IEP goals during her 12th-grade year included becoming oriented and increasing her mobility (getting home on the public bus), presenting her senior project (a career exploration project on childcare), completing a job application and an interview, and learning 50 new sight words.

### *Data Sources*

**Observations.** Classroom observations were conducted at random and in a variety of subject areas (e.g., language arts, English, math, social studies, art). Data collection averaged just over 2 days per month, and a total of 60 visits were made. Classroom observation times were not scheduled and typically lasted 20 to 55 minutes per classroom. The researchers used a standard format that included space for observations, quotes, and notes to follow up during interviews. The format also included space for coding the data during successive reviews (LeCompte & Preissle, 1993). Although they were unable to record all the events in the classroom, the researchers aimed their recording of information at interactions with the focus student. This translated to more than 450 pages of data during the 1996–1999 school years.

**Interviews.** Interviews were added during the third year of the study. As researchers, we realized that teachers, parents, and peers held a great deal of information about the ways in which the focus students accessed the core curriculum in their general education classes that might not be accessed through direct observation. For each focus student, individual interviews were conducted with the students' parents, two general education teachers, a special education teacher, and three peers. The interviews started with, "Tell me about [name's] typical day at school." This gave the interviewee an opportunity to describe his or her experiences with the focus student and allowed the interviewer to ask several follow-up questions. For example, we asked:

- How does [name] complete his/her class assignments?



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- What supports were provided in the general education classrooms?
- How did you know that [name] was understanding the class?
- Can you provide an example of some class activities and how [name] participated?
- Who helped to make sure things worked out?
- What are the IEP goals and objectives?
- Do these IEP goals and objectives really get used?

Interviews lasted between 20 minutes (usually for the peers) and 75 minutes (typically for the parents). The interviews were tape recorded and later transcribed, translating into more than 380 pages of data.

### *Data Analysis*

Data analysis was accomplished in many steps. The researchers had personally transcribed each of the interviews and observations, and they were very familiar with the data. The researchers independently analyzed the data for themes (LeCompte & Preissle, 1993). Each researcher independently categorized the data into broad areas and highlighted quotes and examples that supported each category. Themes emerged during this process of data analysis, specifically surrounding the supports and systems in place to ensure that students with disabilities had access to the core curriculum (Bogdan & Biklen, 1992). Discussion on each theme continued until consensus was reached on each item. Each of the themes was then named, explained, and exemplified with quotes from transcripts or student records. The researchers agreed on the selection of final themes and representative quotes.

A concern in a qualitative study such as this is whether the investigators have presented the social world of the actor as the actor himself or herself sees it (Neuman, 1997). In other words, there is some criticism that the researchers may not represent the focus individuals in ways that the participants intended. To address this problem, the findings were shared with three teachers who each had experience with inclusive education, who had nominated students for this study, and whose students had been selected for participation. These teachers were purposely selected to represent elementary and secondary education. The teachers were provided with a draft copy of the findings section of this article and asked to review it. Phone interviews were scheduled with each of these teachers, and during each phone call, the researchers asked if the findings from this study reflected their teaching experience. The teachers quickly agreed that the information was reflective of their experiences and spent the next 45 minutes discussing actions they wanted to initiate and areas for future study. Thus, the teacher member check did not result in changes to the content, but it did contribute greatly to the discussion section and recommendations in this article.

## FINDINGS

The purpose of this study was to identify the ways in which students with significant disabilities accessed the core curriculum. The findings clustered into four broad themes:

1. Individualized, content-specific accommodations and modifications;
2. Collaboration among the teaching team;
3. Involving peers; and
4. A disconnect between the IEP process and classroom implementation of curriculum and instruction.

Each of these themes is described, and then specific examples of the ways in which this occurred for each of the focus students—Lillian, Marshawn, and Heather—are provided.

### *Individualized, Content-Specific Accommodations and Modifications*

Each of the focus students had access to curriculum accommodations and modifications that were specific to the lesson or activity in which the class was engaged. The Appendix contains a summary of the ways teachers provided accommodations and modifications. Although the general strategies used to create accommodations and modifications were similar, the specific accommodations and modifications often did not apply across lessons. Teachers were observed creating lessons and planning specific accommodations and modifications for students.

**Lillian.** In her fifth-grade class, Lillian was involved in a social studies unit on U.S. history. The teacher had organized the class content around the theme of amusement parks. The entire class was engaged in a problem-based learning activity (Delisle, 1997) in which students had to design an area of the park based on an aspect of history. The whole class studied all aspects of U.S. history, and each group was assigned an era in which to become expert. Lillian's group was assigned westward movement. The group read *Sarah, Plain and Tall* (McLachlan, 1985) and also read information/factual books and watched films about westward expansion. In addition, the classroom library contained picture books, and students accessed information via the World Wide Web. Lillian's accommodations included reading a number of picture books on the topic with a partner, listening to *Sarah, Plain and Tall* at a listening station, and reading a picture com-



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munication symbol version of the textbook chapter. In addition, her special education teacher added to the picture cards used in Lillian's speech output device cards for wagons and frontier themes so that Lillian could participate in class discussions. When her group received the assignment to create an amusement park ride based on the information they had gathered thus far, Lillian ran to the classroom library and grabbed a book about wagons. She pointed to a specific wagon in the book, the Conestoga. Paulo, a member of the group, added that they could make bumper cars that looked like Conestoga wagons. When asked how this fit into U.S. history, Paulo said, "Everybody knows that you had to travel across the land in a wagon; it was too far to walk. And on the trail, you bumped into lots of things." In sum, the majority of Lillian's assignments were completed with accommodations that allowed her to access the curriculum.

**Marshawn.** Marshawn's seventh-grade science class began to study the periodic table of the elements as part of a larger unit on classification systems. Given the range of reading fluency that existed in the school that Marshawn attended, most teachers read aloud from texts daily. Marshawn's science teacher read from the textbook every day and asked a number of questions of her students during this time. The type of questions varied from those requiring yes/no responses to those asking for factual information or inferential and personal responses. The teacher consistently asked Marshawn questions in a yes/no format that he could independently answer with his eyes. The teacher also required students to respond to a number of questions related to the class topic at the end of each day. Marshawn's had fewer questions, with fewer possible choices (same, only less). These questions were asked aloud by a peer or teacher's assistant (accommodation). Marshawn was provided with a number of pictures from which to choose the correct answer (infused objective).

One group assignment was to create a classification system similar to the periodic table of the elements that focused on some other phenomenon. Marshawn's group decided to classify fruits and vegetables. The system the group used included fruit or vegetable, the edibility of the skin or peel, weight, and color. Marshawn used his voice output device to answer questions about each fruit and vegetable (accommodation). His final paper for the class was an outline of an essay (same, only less) that was typed in his word processing class (curriculum overlapping). In sum, the majority of Marshawn's assignments focused on what the class was studying and allowed him to meet his IEP objectives.

**Heather.** When Heather was a 10th-grade student, her English class was asked to write an essay in response to the Langston Hughes poem "A Dream Deferred." The objective of the essay was to describe the theme of the poem in relationship to one of the following topics: prejudice, justice, or racism. While the students read the poem, Heather listened to a tape recording of the poem, which had been made the night before by another student in the class. The students met in pairs to discuss the poem. Groups of students were then asked to write an essay that explained how the poem illustrated their chosen topics. Heather and her team identified the themes of prejudice and racism in the poem. Her team's assignment was modified to include a pictorial essay as well as the written essay (streamline). Heather and a partner looked through magazines for pictures that Heather believed illustrated the points the poem brought to light. When Heather saw a picture she thought was appropriate, her partner would cut it out (accommodation). Heather helped glue the pictures on the construction paper, and the result was a pictorial essay that complemented the team's written essay. The teacher eventually submitted this pictorial essay (and not the written one) to the school's newspaper, and it was subsequently published.

### *Collaboration Within the Teaching Team*

The teaming structures at each school were quite unique, but each seemed to create time for special education teachers to develop and modify the curriculum. At Lillian's school, the special education teacher supported 11 students in four different fifth-grade classrooms (a different special educator supported fourth grade, and so on). At Marshawn's school, each special education teacher was assigned to an academic family of 4 content teachers and 125 students, 15 of whom had identified disabilities. At Heather's school, each special education teacher was responsible for the curriculum support in an academic department for all the students with disabilities who were enrolled in classes within that department. For example, the special educator who supported the science department created curriculum accommodations and modifications for 63 students per semester. None of these special educators divided their time with a self-contained special education class. They were available full time to the teachers and students they supported. Thus, each student had access to both general and special education teachers throughout the day. Obviously, the special educators could not be full time with any one student or classroom, but each coordinated a support system that included teaching assistants, related services professionals, and peers. As one special educator said,

> When I tried to do both [self-contained and inclusion support], inclusion always lost out to the work I had to do in the special education room. Now all students have access to me and my time based on what they need. When I first started supporting students with significant disabilities in regular classes, one of my special education colleagues told me it was a pipe dream to think that these kids could get the content. I think we've been able to demonstrate the possibilities.



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These three special education teachers created curriculum modifications and accommodations, and each of them was on several occasions observed influencing the general education curriculum. For example, the special education teacher at Heather's school conducted a class discussion on circles of friends while the students were reading *Of Mice and Men* (Steinbeck, 1937) and created a science class project that involved developing an adapted chair for a student with multiple disabilities. Lillian's special and general education teachers created the amusement park idea together after reading about problem-based learning and discussing the opening of a new amusement park in the state. Marshawn's special education teacher provided the humanities teacher with a lesson plan that included reading *Petey* (Mikaelsen, 1998; the story of a boy with cerebral palsy who grows up in a residential institution), an open discussion about institutionalization, and an assignment in which students wrote letters about their friendships with senior citizens. As a 10th-grade English teacher said,

> Being the only adult in my classroom can be stagnating. I mean, I get a lot of good ideas when there is another teacher in the room. We can talk about curriculum ideas or ways to support students. Many times we talk about students who aren't receiving special education services. I think that the collaboration and resources that special education provides have made me a better teacher and my class more interesting.

An elementary special education teacher reported,

> If I didn't get to spend a lot of time in regular classrooms, I wouldn't know as much about the curriculum. I think the accommodations and modifications that I design have integrity because I know what the teacher is trying to do.

Over time, the roles and responsibilities of each of these teachers became blurred, and they abandoned the individualism that has been documented elsewhere (Bauwens, Hourcade, & Friend, 1989; Redditt, 1991). These teachers also became more reflective regarding their practices, discussing things they felt comfortable doing and areas in which they needed additional information, resources, or support. Consistent with previous research, the teachers in this study changed their practices based on the students enrolled in their classes (Fisher, Sax, Rodifer, & Pumpian, 1999). Many of the lessons we were able to observe did not require significant amounts of accommodation or modification. Instead, similarly to in the work of Jorgensen (1998), we observed lessons that were planned in advance with the full range of students' needs considered. In addition, a number of techniques for differentiating instruction (e.g., Tomlinson, 1999) were employed. For example, in Lillian's classroom, the teachers consistently used learning centers, multiple texts on the same theme, and flexible grouping patterns.

### Involving Peers

Students without disabilities offered a wealth of information, experience, and insights regarding the participation of students with disabilities in general education classes. Regardless of the types of supports and services required by the focus student, classmates were as likely as professionals to provide ideas for curriculum accommodations and modifications. As a seventh grader said,

> I've know Marshawn for 3 years. I know how he learns and how he answers questions. We have a computer program that has lots of pictures in it that Marshawn uses [BoardMaker™]. In our science class, Marshawn was having a hard time with the squid lab. I went over to the computer and printed out a few more pictures for him so he'd know what our group was doing.

Heather completed a chemistry class research project that included both a written paper and an oral presentation on a vitamin or mineral. Heather was very interested in childcare and wanted to become a nanny. She selected Vitamin A for her project when she heard in class that this vitamin was important for pregnant women. Heather's assignment included both accommodations and modifications. She was asked to find 6 facts about the vitamin, rather than 10, and to write a speech outline rather than an eight-page research paper. Heather's classmate Jamie suggested that Heather use six large pieces of construction paper to illustrate her facts. On the front of each of these large pages, Heather used pictures from magazines to provide visual prompts for the information she reported orally. For example, on one piece of construction paper she glued several pictures of mothers and babies. On the back of this piece of construction paper, she taped a list of ideas she wanted to share about mothers who were nursing and how important Vitamin A was for them. Heather typed this list on the computer and enlarged it so that she could easily read the facts when she was reporting to the class. During her oral report, when showing the pictures of mothers and babies, she said, "Mothers that are nursing their babies need a lot of Vitamin A."

During this project, Jamie provided Heather with feedback about the selected facts, the congruence of the pictures and the facts, and the layout of each poster. In turn, Heather selected some pictures for Jamie's presentation on Vitamin C, such as oranges and people with colds. During the actual presentation, Jamie assisted Heather in keeping her materials together, ordering the posters, and keeping note of the time. During Jamie's presentation, Heather held up cards indicating the number of minutes left for the presentation and changed the overheads when Jamie asked her to.



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The week following these presentations, Jamie was asked about Heather's educational experiences. Jamie said,

> Heather was shy and nerdy in ninth grade. She didn't dress like other kids, kept her head down, and talked in a low voice most of the time. She's totally different now. She fits in, talks in the class, talks to us, raises her hand in class, and has clothes that are more like ours.

Peer assistance during presentations was also evident in Lillian's fifth-grade class. Lillian's classmates planned their group presentation based on what each person in the group was good at. Each 5- to 12-minute group presentation focused on the era of U.S. history that the group had studied and the group's experience with the yearlong theme. These presentations included a discussion on the part of the park they created and was conducted during open house one evening in June. As the five students in Lillian's group discussed parts of the presentation, they noted that Paulo was really good at drawing and demonstrating how the bumper cars worked. Kayla had demonstrated her skill in creating computer-assisted presentations, so the group assigned her that task. Lillian had demonstrated a new skill of typing on her IntelliKeys™, and she was asked to input information. During the presentation, Lillian introduced each of the presenters because she had learned to say their names during the time they worked together. Lillian also used a switch to advance the computer presentation pages when Paulo pointed to her.

### *The Disconnect Between the IEP and Classroom Curriculum and Instruction*

While reading the IEP documents for these three focus students, the researchers noticed that the goals and objectives reflected academic outcomes, contact with peers, and few isolated skills. However, the IEP was often not referenced by any of the interviewees, and we did not observe any teacher use the IEP document to determine accommodations or modifications. When asked, parents and special education teachers reported that the IEP meeting was a way of ensuring that the supports and services would be available. Special education teachers and parents agreed that the objectives identified on the IEP were most often not consistent with the actual practices in an inclusive environment. As one of the parents said, "To me, the IEP is a means to an end. If it means that we have to sit and fill out paperwork each year to get Lillian what she needs, then I'm willing to do it. I just wish I didn't have to."

Heather's special education teacher reported that she had difficulty writing 1-year objectives that were consistent with the district standards but also included the supports necessary for Heather to be successful. She indicated that the IEP was required by law, but that in general education classes she had to continually adjust the level of support to continue to challenge and support Heather. This special education teacher reported being questioned by the site administrator about the appropriateness of Heather's enrollment in English. She said,

> During an IEP meeting, I was once accused of being in denial about Heather's disability. I know she has a significant cognitive disability, but that doesn't mean that she isn't getting something out of the curriculum. That's the problem with the IEP. The administrators see it as a useful way of describing student needs; I don't.

When asked to explain this further, the special education teacher said,

> Mr. Drew, our vice principal, asked me how I knew if Heather was getting anything out of listening to a tape recording of a book. I told him that I knew she was learning because she demonstrated her knowledge on assessments. I told him I also knew because her peers talked about her responses when they met in small groups. I told him that I also knew because her mother would tell me about connections Heather was beginning to make between the school curriculum and things the family did at home. After that conversation, I wondered how I could ever put that on the IEP.

Another point raised during the interviews about the IEP process focused on the static nature of the IEP document. Marshawn's science teacher said,

> The IEP process requires that we identify specific accommodations and modifications that Marshawn will use throughout the following year. The problem is, the document can't take into account the different teaching styles of all his teachers, the fact that he learns things along the way and may need different types of adaptations as the year progresses, and the varying involvement he will have with peers in each class.

This teacher believed that supports and curriculum modifications needed to change with different teachers, with different curricula, and at different times during the school year.

Heather's special education teacher also addressed the fixed nature of the IEP document:

> Can you imagine how many times I'd have to schedule staffing meetings for Heather if her IEP reflected her actual program needs? We didn't used to use books on tape, but I found they work. Do I need another meeting? In science I found that she does well with peer support, but in 3-D



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art she uses the existing natural support. Do I have to have a meeting each time she changes classes to determine the support we will provide in her classes?

## Discussion

Before discussing the implications of this study and directions for future research, it is appropriate to comment on some possible limitations. First, the findings and recommendations in this study are based on the experiences of three students. Although we have extensive data on these three students, generalizations to a broader population must be made with caution. Second, we studied students who attended schools that had successful long-term experiences with inclusive education. Thus, the findings from this study may not be representative of schools in which inclusive education has been implemented differently or in schools with less experience with inclusive education, innovation, or change. Third, the focus of our research was on the ways in which students with significant disabilities accessed the core curriculum, and we analyzed our data accordingly. We did not find examples within the data that student needs were not being met, nor did interviewees tell us so. However, it is possible that we were not aware of specific student needs and that we were not told of them.

### *Practical Implications*

The findings from this study indicated that students with significant disabilities can and do access the core curriculum with appropriate accommodations and modifications. This adds to the growing body of evidence that students with significant disabilities should receive their special education services within general education classrooms. Thus, one implication is that students must be included to access these types of curricula and curriculum supports.

The students in this study also had natural peer support networks that allowed them to participate in their general education classes. Instructional and assistive technology was also used within the classrooms to increase the participation of students with and without disabilities, create connections among curriculum areas, and increase the communication options of students with significant disabilities. Thus, to succeed in general education classrooms, students with disabilities must also have access to personal supports and technology supports (Fisher, Frey, & Sax, 1999).

The repertoire of the teaching staff was one of the most remarkable features of our research in these schools. The general education teachers developed interesting and motivating lessons for their students. The special education teachers understood the curriculum in the general education classes so well that they easily identified appropriate accommodations and modifications for students with disabilities. When general and special educators met to discuss lessons, the result was consistently improved content and instructional delivery processes for all students. Schools that want to implement inclusive schooling practices would be well advised to ensure that general and special education teachers have access to planning time if they expect innovations in curriculum to take hold.

One unexpected yet admirable finding was the amount of responsibility that was shared with students. We did not observe significant amounts of whole-class teacher-led instruction in any of the classrooms. Instead, we observed a great deal of cooperative learning, partner activities, learning centers, and individual instruction. Clearly, students were expected to complete their assignments, solve problems, and ensure that others in their group were supported to learn. Schools moving toward inclusive practices may want to engage in activities that require students to give assistance to and receive assistance from other students, not based on a perceived ability level.

The data from this study also supported the work of Baumgart et al. (1982) and Udvari-Solner (1996), which found that teachers must develop and implement a process for modifying curriculum and evaluating the outcomes. Our data indicated that curriculum accommodations and modifications must be incorporated into daily routines and generalized across environments if they are to be successful for the student as well as for the teacher. Success for the student was demonstrated in this study by the students with disabilities gaining access to the general education curriculum. Success for the teacher was demonstrated in this study by the teachers' not disrupting their routines or lowering their expectations to incorporate support strategies for specific students.

One concern we identified during the course of this study involved the IEP objectives that were developed for students. Over the 3 years of the study, the focus of the IEP objectives remained essentially the same. Although the IEP objectives were of reasonable quality in terms of age appropriateness, functionality, and potential for generalization to other natural environments (Hunt, Goetz, & Anderson, 1986), they were not based on the content or performance standards for the other students in the class. In other words, each state and district had articulated expectations for students per grade level and content area. The IEP objectives should list the access skills that the student may have (e.g., reading sight words, using the restroom during recess, learning Braille), and they should be referenced to the district and/or state standards. As Hock (2000) noted, "A standards framework provides a map for developing IEPs that links IEP goals and objectives to classroom goals and objectives, which are the goals and objectives that are considered important for all students" (p. 211). In other words, if students with disabilities are going to access the core curriculum, their IEP objectives should be based on the same expectations (or standards) as those for other students in the class. Similarly, the IEP process may need to be revised to reflect the changing



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support needs that students have during the year of implementation.

### Directions for Future Research

Over the next several years we expect to learn more about access to the core curriculum and the impact that standards-based reform has on students with disabilities. We also expect to learn about writing IEP goals and objectives that are high quality and that are based on the content and performance standards for all students. Inclusive education and meaningful access to the curriculum are possible for students with significant disabilities, provided that appropriate supports, including well-prepared teachers, are available.

We would like to study the changes that teachers, students, and schools experience as they move from self-contained, segregated service delivery systems to inclusive education, while also addressing the core curriculum. Additional questions that guide our future work include,

- In what ways other than already discovered and discussed in this article can students with significant disabilities access the core curriculum?
- Can students access rigorous core curricula in segregated self-contained special education classrooms?
- What impact do new statewide assessment and accountability systems have on students with disabilities and their access to the core curriculum and thus to inclusive schooling?
- Do other students with high-incidence disabilities access the core curriculum in ways similar to those of the students in this study?
- In what ways do the roles of students, special and general educators, administrators, and parents change when IEPs are referenced to the core curriculum?
- Does access to the core curriculum in general education classes improve the educational outcomes for students with significant disabilities?

Further research on these and other questions will likely influence the educational and placement-related decisions made with and for students with significant disabilities. It is clear that these students can access the core curriculum and that this access is influenced by their membership in general education classrooms. Given that access to the core curriculum is the hallmark of a public education, higher expectations for all students, including those with significant disabilities, must be considered. ■

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#### NOTE

The names of students in this article have been changed to protect their privacy.

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## APPENDIX

### *Accommodations and Modifications to the Core Curriculum*

An **accommodation** is a change made to the teaching or testing procedures in order to provide a student with access to information and to create an equal opportunity to demonstrate knowledge and skills. Accommodations do not change the instructional level, content, or performance criteria for meeting the standards. Examples of accommodations include enlarging the print, providing oral versions of tests and using calculators.

A **modification** is a change in what a student is expected to learn and/or demonstrate. A student may be working on modified course content, but the subject area remains the same as for the rest of the class. If the decision is made to modify the curriculum, it is done in a variety of ways, for a variety of reasons, with a variety of outcomes. Again, modifications vary according to the situation, lesson, or activity. Modifications can be provided in several ways. The four most common ways are listed here:

**Same, only less**—The assignment remains the same except that the number of items is reduced. The items selected should be representative areas of the curriculum. For example, a history test consisted of multiple-choice questions, each with five possible answers. This test was modified for a specific student so that the number of possible answers for each question was reduced to two.

**Streamline the curriculum**—The assignment is reduced in size, breadth, or focus to emphasize the key points. For example, in language arts, the students were required to produce an essay on *Charlotte's Web* (White, 1952). This assignment was modified for a specific student so that it included a character web of Wilbur and illustrations from the beginning, middle, and end of the book.

**Same activity with infused objective**—The assignment remains the same, but additional components, such as IEP objectives or skills, are incorporated. This is often done in conjunction with other accommodations and/or modifications to ensure that all IEP objectives are addressed. For example, a specific student has an IEP objective to answer yes/no questions by using his eyes to locate the words on a lap tray. In his health class, the teacher and other students in the class remembered to phrase questions in a yes/no format so that this student could practice this skill in a natural setting.

**Curriculum overlapping**—The assignment for one class may be completed in another class. Students may experience difficulty grasping the connections between the different subjects. In addition, some students work slowly and need additional time to complete assignments. This strategy is especially helpful for both of these situations. For example, in a word processing class, students typed assignments for English class and submitted them to the word processing teacher for the typing grade and to the English teacher for the essay grade.




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