“Adrift” in the Educational Mainstream: The Need to Structure Communicative Interactions Between Students with Down Syndrome and their Nondisabled Peers

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The premise of this article is that educational mainstreaming could become far more productive for students with Down syndrome and their nondisabled classmates if teachers learned how to apply structured student-student communicative interactions effectively. Study findings reviewed, which featured the use of cooperative and tutorial interaction structuring, showed significant communicative benefits accruing to both students with Down syndrome and those without disabilities. A set of implications for the further improvement of mainstreaming concludes the article.

When the Education for All Handicapped Children Act (PL 94-142) was passed in 1975, parents of school-age children with Down syndrome were overjoyed. For the first time in history their sons and daughters were guaranteed a public education. Adding to their delight, the education was to be offered in the least restrictive environment that was feasible and appropriate. Seizing upon the least restrictive environment wording, parents whose children had Down syndrome or other types of disabilities moved quickly to have school officials regard the least restrictive environment and the regular education setting as one and the same. The mainstreaming movement was born.

At first, parents of children with Down syndrome were satisfied to simply have their sons and daughters rub shoulders with nondisabled children in a regular education setting. Soon, though, they raised their sights, aspiring to see more substantial mainstreaming benefits for their children such as the development of positive heterogeneous interactions and relationships (child-with-Down-syndrome and child-without-a-disability), and possibly even friendships. Moreover, in a short while they came to expect that the regular education curriculum and the influence of nondisabled schoolmates would further the literacy growth of their children.

During this formative period of the mainstreaming movement, parents of nondisabled students had expectations too. At first, strongly attracted for humanitarian and altruistic reasons, some of them began to worry after a while that their children might receive a “watered down” curriculum and a disproportionately small part of the regular educator’s individualized attention — particularly in the area of academics — due to the presence of children with Down syndrome in the mainstream setting.

Today, parents of children with Down syndrome and parents of nondisabled children alike continue to press educators to fulfill the original promises of mainstreaming, but seem less sure of how to help bring the promises to fruition. At the same time, regular education teachers in mainstream settings frequently feel unprepared to operate successfully in a mainstream classroom. In fact, a recent newspaper article revealed that in the 1996-97 school year, a period during which 46 percent of our country’s 5.9 million students with special needs spent the majority of their schooling days in regular classes, a survey of the regular education teachers working in these mainstream classes revealed that four out of five of them felt ill-prepared to instruct students with special needs (Minneapolis Star-Tribune, April 12, 2000).

Even among special education teacher trainees, considerable doubt has been voiced about implementing effective integration strategies. For example, a survey of 231 special education trainees from two colleges of education, one in Scotland and one in Ireland, revealed that 96% of them felt that their professional training did not prepare them to meet the challenges of integrating children with Down syndrome successfully (Wishart & Manning, 1996). Perhaps these statistics reflect the “jitters” that prospective teachers experience on the brink of their first teaching job. But maybe the problem is deeper than that. Perhaps, at this juncture, the mainstreaming movement, encountering obstacles, has lost its momentum in the “backwaters” of uncertainty, especially in the eyes of teachers. And, the recipients of its promise, that is, students with Down syndrome and their nondisabled schoolmates, may have become increasingly “adrift” in the mainstream. Children with Down syndrome will not “sink” in the mainstream; federal laws will prevent that. Moreover, bright spots of mainstreaming accomplishment occur often enough to create optimism about its future. However, there is certainly a need to assist educators to regain the momentum and improve the effectiveness of mainstreaming.

The goal of this article will be to provide regular and special educators with methods through which to access more of the communicative benefits potentially available in mainstream programs. The purposes of the article will be to: 1) Give teachers an accurate representation of the communicative abilities of school-age students with Down syndrome, 2) provide examples of how structuring heterogeneous student–communicative interactions can significantly enhance the success of mainstream programming, and 3) illustrate how the mainstream environment can be enhanced while also

1 Preparation of this paper was supported in part through a federal grant to the University of Minnesota, Research and Training Center on Community Integration (NIDRR Cooperative Agreement No. #133B80048). Content and opinions do not necessarily reflect the position or policy of the funding agencies, and no official endorsement should be inferred.

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strengthening the communicative skills of students with Down syndrome. The term “mainstream” will be featured throughout this article because it is in common use among education personnel. However, the terms “integration” and “inclusion” would be suitable equivalents.

Students with Down Syndrome as Potential Interaction Partners in the Mainstream: Focus on Verbal, Nonverbal and Social Abilities

Communicative interactions with nondisabled peers in a mainstream setting can provide students with Down syndrome a vital context in which to learn the challenges and pleasures of communication, e.g., ordering a cheeseburger at the school cafeteria from the menu and eating it with a heterogeneous group of classmates while talking about a popular movie. Moreover, when students with Down syndrome leave school as young adults many of them will find jobs in the service sector where good communicative interaction abilities will be expected. Hence, it is important for mainstream teachers to know the likely communicative strengths of students with Down syndrome in order to maximize their success. Because of space limitations, our review of the communicative proficiency of students with Down syndrome will be limited to highlighting pertinent findings of a small number of recent major research reviews and/or studies.

Verbal Communication

A major study by Sigman and Ruskin (1999) of 93 children with Down syndrome found that they were relatively weak in expressive language, but relatively unimpaired in receptive language. This could lead a teacher or classmate to address students with Down syndrome in language that is unnecessarily below their ability to understand. Equally important, the finding of relative strength in receptive language could be misleading to the teacher because children with Down syndrome frequently have auditory processing problems. For example, they often have hearing impairments (Roizen, 1997) and short-term memory deficits (Buckley, 1995) that undermine the development of a good foundation for communication.

Many children with Down syndrome have speech production problems. For instance, problems associated with articulation are common. Moreover, anatomical differences, such as central nervous system anomalies may be associated with production problems. Additionally, differences in speech structures such as the vocal cords, oral cavity and facial muscles may restrict speech production (Miller, Leddy, Miolo & Sedey, 1995; Rondal, 1995).

Fowler, Doherty, and Boynton (1995), based on their own work and an extensive review of the literature, hypothesize that the difficulty that many individuals with Down syndrome experience in mastering the morphosyntax of English (forming words into grammatically well-formed sentences) may be linked to basic difficulties at the phonological level (the level at which sounds are combined to form words) which serves and supports the sentence structuring process.

Nonverbal Communication

In contrast with their weak expressive verbal language skills, students with Down syndrome have relatively strong gestural skills (Franco & Wishart, 1995). These skills develop early and act to compensate for the lack of verbal ability. As with nondisabled children, gestures continue as a part of the communicative repertoire, even after verbal language is established.

Some interesting work has been done in the area of augmentative communication. For example, Miller, Leddy, Miolo and Sedey (1995) provide evidence that children with Down syndrome readily learn manual signing and that increases in sign vocabulary expand their total oral vocabularies. In a similar vein, Buckley (1995), observed that children with Down syndrome who were signing would also fill in meaning with pantomime where their signed vocabulary was not well established.

A recurring theme in early clinical descriptions of persons with Down syndrome was that they have particular (perhaps even unique) strengths in imitative behavior. Currently, there is no compelling empirical support for the theme. However, Sarimsik (1982), in an observational learning study in which children with Down syndrome and children with other forms of mental retardation watched a videotape of an adult model who constructed two toys from specially designed blocks, found that both groups benefited in early phases of the task. However, the children with Down syndrome continued to gain from modeling in subsequent trials while the other groups did not. Thus, a unique imitative strength hypothesis is not supported; but, the ability of children with Down syndrome to benefit from modeling over a longer period certainly has important implications for learning to communicate.

Social Communication

Dykens, Hodapp and Evans (1994), after an extensive literature review which looked at the socialization characteristics of individuals with Down syndrome, concluded that school-age children with Down syndrome generally project a comparatively sociable, people-oriented personality type. Conversely, as compared with children who have other types of mental retardation, they found that children with Down syndrome show lesser amounts of serious maladaptive behavior.

Pueschel, Bernier and Pezzulo (1991) assessed the behavioral characteristics of children with Down syndrome, as compared with their nondisabled siblings, using the Achenbach Child Behavior Checklist (1983), which was completed by teachers as well as by parents. The externalizing scores of the Achenbach (scores which reflect aggressive, antisocial and uncontrolled behaviors) for the group with Down syndrome were due mainly to higher “hyperactive” category ratings which in turn reflected descriptors such as “acts too young for
his age,” “can’t concentrate,” “impulsive,” and in particular the heavily weighted item “speech problems.” Relatedly, many parents felt that their child with Down syndrome often exhibited stubborn, sullen or irritable behavior.

Stubbornness, as a common personality descriptor of children with Down syndrome, has been established in a number of studies (Rynders, 1996). In Carr’s (1994) extensive longitudinal study, 75-90% of parents of youngsters with Down syndrome spoke fondly of their children as being thoughtful, kind, affectionate, etc. However, 50-60% of the sample also described their children as stubborn.

In closing out this section, let us look briefly at a study that focused on how nondisabled peers reacted to being in a mainstream classroom with students who have Down syndrome, providing an important additional perspective on the communicative compatibility of nondisabled peers who were interacting with peers who have Down syndrome.

Laws, Taylor, Bennie and Buckley (1996) administered a questionnaire to elementary-age nondisabled students whose same-age classmates had Down syndrome. Responses to items on the questionnaire, designed to be reflective of popularity and acceptance, revealed that students with Down syndrome appeared most often in the average acceptance group, with only a small number appearing either in the low or high acceptance group. This produced the same popularity distribution as that of nondisabled students rating their nondisabled peers. Interestingly, although the children with Down syndrome showed significantly higher levels of actual problem behavior than their nondisabled classmates, their nondisabled classmates did not reject them. The opposite was true for nondisabled children in regard to their nondisabled peers; a strong correlation was found for behavior problems and peer rejection. A possible interpretation of this finding, as pointed out by the authors of this study, is that nondisabled peers in the mainstream setting are learning to be supportive of classmates with Down syndrome.

In sum, it is clear, based on findings outlined briefly in this section, that school-age students with Down syndrome bring both communication strengths and weaknesses to a mainstream setting and, potentially, have much to gain from interacting with nondisabled peers. Hence, the way is paved for teachers to take fuller advantage of the educational possibilities inherent in having students with Down syndrome and nondisabled students in the same classroom. To activate these possibilities, teachers will want to know how to structure student–student interactions. That is the subject of the section which follows.

**Structuring Heterogeneous Student-Student Communicative Interactions for Mainstreaming Benefits**

Teachers who wish to be successful in structuring communicative interactions in a mainstream setting need to be able to utilize structuring methods that have proven efficacy. Researchers who have focused on structuring communicative interactions between students with Down syndrome and their nondisabled classmates have often employed one of two methods: (1) cooperative structuring, or (2) tutorial structuring.

Before looking at the results of studies on structuring for cooperative or tutorial interactions, let us ask, “Why is structuring necessary? Can’t the school’s educational planning team simply place a student with Down syndrome in a classroom with nondisabled students and expect that good things will happen?”

Unfortunately, simply arranging for students with Down syndrome and nondisabled students to be in physical proximity with one another does not ensure that positive interaction and interpersonal attraction will result (Rynders, Johnson, Johnson, & Schmidt, 1980). Instead, the research literature suggests that if interactions are deliberately structured, more optimal results can occur.

To find articles on interaction structuring, a comprehensive approach was used to identify data-based studies that would yield information about effective strategies for students with Down syndrome. Our search revealed relatively few articles that involve students with Down syndrome. This probably is a result of the fact that mainstreaming blurs etiological distinctions (e.g., studies on cooperative learning for students with disabilities, did not specify whether those students had Down syndrome). The search was limited to studies published after 1975, the year that PL94-142 (the Education for All Handicapped Children Act) was passed and mainstreaming came to the forefront of education philosophy and policy.

**Research on Cooperative Structuring**

Roger Johnson and David Johnson (1984) have provided the conceptual context, which has guided much of our work, including the two studies that follow. The Johnsons describe cooperative learning as a teaching strategy that embodies four basic elements. The first element is “positive interdependence” which requires that group members work together to accomplish a goal. Methods for promoting positive interdependence consist in setting mutual goals, establishing divisions of labor, dividing materials, resources, or information among group members, assigning students differing roles, and giving joint rewards. Second, “face-to-face interaction” with verbal interaction or other forms of communication must occur. Third, students are held “individually accountable” for mastering the assigned material and contributing to the group’s efforts. (The “hitchhiking” phenomenon, where one student does most of the work and the others get a “free ride” is minimized in properly structured cooperative activities). Fourth, students are expected to use “appropriate interpersonal and small-group skills.”

Rynders, Johnson, Johnson, and Schmidt (1980), three faculty members from the University of Minnesota and a director of physical education at a
special school, conducted a study to help contribute to the integration of children with Down syndrome in an urban school district. In that era, students with Down syndrome were generally placed in special schools and in segregated classrooms which were labeled “trainable.”

Participants in the study were 30 junior high school students (12 students with Down syndrome from a segregated public school, 9 nondisabled students from a public junior high school, and 9 nondisabled students from a private Catholic school). The 30 students, all novice bowlers, were assigned randomly to three conditions (cooperative, competitive, individualistic) so that each condition contained 10 students (6 nonhandicapped students, 4 students with Down syndrome). In the cooperative condition students were instructed each week to maximize their group bowling score to meet a set criterion (improvement of the group’s score by 50 pins over the previous week) and to offer each other game-related encouragement and assistance (e.g., help in handling a ball) when it was needed. In the competitive condition students were instructed to maximize their own score so as to outperform the other students in their group, concentrating on their own bowling skills. In the individualistic condition students were instructed to maximize their individual score to meet a set criterion (improvement by 10 pins over their score of the previous week), concentrating on improving their personal bowling performance. At the outset of the eight-week study, all participants were told that prizes would be awarded for bowling performance improvement consistent with their group’s structure. At the conclusion of the study, all participants received prizes, according to their bowling performance. Basic bowling instruction was identical for all three conditions and was provided equally to participants in all conditions throughout the study.

The first variable of interest was the frequency of three kinds of interactions: 1) Positive interactions (e.g., “receiving encouragement before bowling”), 2) neutral interactions (e.g., “comments without affect,” “questions without affect”), and 3) negative interactions (e.g., “ridicule,” “cheering when someone did poorly”). A standard observation format was followed that began when each bowler stepped up to the alley to take his or her turn. At that point, using a frame-by-frame recording sheet, observers categorized all intelligible verbal interactions between the bowler and the other students on a continuous basis until the bowler stepped down from the alley. The second and third variables of interest were bowling achievement (scores) and interpersonal attraction assessed through a sociometric measure.

Results revealed that the number of positive heterogeneous interactions in the cooperative condition differed significantly from those in either the competitive or individualistic condition. On average, each student with Down syndrome interacted positively with nonhandicapped peers 29 times per hour in the cooperative condition. Comparatively, there was an average of 2 positive interactions per hour in the competitive condition and 4 positive interactions per hour in the individualistic condition. Furthermore, in the cooperative condition, children with Down syndrome and children without disabilities alike initiated many more positive interactions than participants in the competitive and the individualistic conditions.

With regard to the possible effects of interaction structuring on peer relationships, nonhandicapped students in the cooperative condition, looking at photographs of peers, ranked bowlers with Down syndrome significantly higher than the nonhandicapped students rated them in either the competitive or individualistic condition. Furthermore, bowlers with Down syndrome in the cooperative condition ranked their nonhandicapped peers significantly higher than in either the competitive or individualistic conditions. Also, the bowlers without disabilities in the cooperative condition ranked peers with Down syndrome significantly higher than in the other conditions.

Group bowling scores were not significantly different across the three conditions; however, as expected, nonhandicapped students bowled considerably better than did bowlers with Down syndrome, irrespective of condition.

In a second study, Putnam, Rynders, Johnson and Johnson (1989), working in a regular elementary school, involved 16 fifth grade students with mental retardation from special classes (five had Down syndrome), and 32 nondisabled students from fifth grade regular classrooms. Half of each group was assigned on a random stratification basis to two groups: 1) un instructed by teacher in collaborative skills (but given task instruction and feedback) and 2) instructed by teacher in collaborative skills (e.g., instructed in how to share materials, participate, checking to see if everyone agrees to answers). Students worked in heterogeneous triads on science units. For example, students in heterogeneous groupings of three, experimented with objects of different shapes, sizes, densities to determine which ones floated, which sank, and why. These types of activities were scripted and organized to promote cooperation through an emphasis on positive interdependence and all-member participation.

Social interactions were observed using a modified version of the Social Interaction Observation System (SIOS) (Voeltz, Kishi & Brennan, 1981). Statistically significant differences were found between the instructed and noninstructed groups in several categories, including the “cooperative” (e.g., engaging in activity with student who has a disability) category. The number of undesirable behaviors recorded was extremely low in both conditions, with no instances of “negative comment” directed toward students with disabilities or “talks about” students with disabilities.

Research on Tutorial Structuring

As mentioned in the previous section, cooperative structuring features
the age matching of peers, promotion of socialization, turn-taking and interaction reciprocity, and encourages contributions to tasks by all parties. Interactions within this structure approximate interactions between friends. In contrast, tutorial structuring, features creation of interaction pairs where the partner without a disability is often considerably older (often twice as old or more), is oriented to promote a vertical relationship with one person functioning as the tutor and the other as the tutee, and does not create an expectation for relatively equal communicative status. Interactions within this structure approximate traditional teaching (direct instruction). Furthermore, tutorial structuring is generally offered across-school, in order to take advantage of age differences across grades, rather than within a classroom as would be generally true of cooperative structuring. For example, tutors might be nondisabled eighth graders who would tutor third graders with Down syndrome.

Cooke, Heron, Heward and Test (1982) integrated a seven-year-old child (Joanne) with Down syndrome into a mainstream first grade class as a participant in a classwide peer-tutoring program at a regular elementary school. A first grade classmate (Maryann) was selected as the tutor. Daily tutoring sessions consisted of three components: tutor huddle, practice, and testing, all of which occurred for about 30 minutes each day, for a total of 89 peer tutoring sessions over a five-month period. At the beginning of each peer tutoring session Maryann picked up Joanne’s folder containing words for Joanne from the Dolch sight-word reading list (Dolch, 1955). Each tutor huddle, comprised of three or four tutors, met for five minutes during which time Maryann read the words aloud that Joanne was to learn. If Maryann read the words correctly, members of the huddle group would reinforce her with the word “yes.” If Maryann said one of the words incorrectly, the other tutors would try to say the word correctly for her. If the whole huddle had a problem, members held up their hands for teacher help. Following the huddle, Joanne and Maryann sat on the floor together and Maryann presented a set of word cards as often as possible in the time allowed, using a standard prompting procedure if Joanne made a mistake (e.g., “try again”), followed by modeling the word if Joanne still didn’t respond correctly (e.g., “say yellow”). Tutors were also encouraged to use social praise on an intermittent basis. At the conclusion of the five-minute practice session, Joanne was tested on the set of words she had practiced, with Maryann indicating success on each word by placing the word on top of a large smiling face sticker, and nonsuccess by placing the missed word on a large X. Maintenance was assessed by having Maryann review all the words with Joanne that were read correctly. Over a five month period, Joanne’s sight word recognition achievement increased significantly: 4 words recognized correctly on a pre-test to 77 words recognized correctly on the post-test. Additionally, Joanne’s tutor, Maryann, increased her sight word recognition achievement too, showing substantial improvement on a pre- and post test basis.

The previous example is a somewhat different approach to the tutorial structure in that the tutor and tutee were approximately the same age. The following example uses a more typical tutorial approach inasmuch as the tutor is considerably older than the tutee.

Martella, Marchand-Martella, Young and Macfarlane (1995) evaluated the impact of training nondisabled peers to provide, Dan, a 14-year-old boy with Down syndrome, severe intellectual disabilities, and hyperactive behavior, with training from two peer tutors (nondisabled high school seniors) who had been trained to provide specific praise statements (e.g., “Dan that was great! You said the word ‘blue’”), as well as to decrease negative statements (e.g., “No, Dan that was wrong. You’re guessing”). Furthermore, suggestions on alternatives to negative statements were provided (e.g., “That was a nice try, Dan. The word is ‘blue!’”). Results showed that the peer tutors learned to provide appropriate commands and specific praise and to reduce their negative statements. Most important, though, as a collateral effect of the training program, Dan’s inappropriate verbalizations, foot stamping, and other noncompliance behaviors decreased and his compliance to requests increased. This is typical of other research on communication intervention for inappropriate behavior (Reichle & Wacker, 1993). As participants increase the use of more acceptable communication, less acceptable forms of communication decrease.

In sum, looking across the four studies in this section, important and substantial verbal, nonverbal and social growth in the communicative abilities of students with Down syndrome through cooperative and tutorial structuring took place. Important, also, is the positive behavioral and attitudinal change that occurred in nondisabled participants through interacting with peers with Down syndrome. That being said, how can teachers build on and extend the benefits of these types of communicative structures in their mainstream classrooms?

**Building on and Extending the Benefits of Student-Student Communicative Interactions through the Mainstream Environment**

Interpersonal communicative growth that is achieved through structured cooperative or tutorial interactions can be augmented through teacher’s efforts to strengthen the child with Down syndrome’s general verbal, nonverbal and social communication skills. What follows are a list of suggestions from the research literature that relate to methods of structuring the mainstream environment, including the delivery of instruction.

**Strengthening the “Swimming” Skills of Students with Down Syndrome for Better Communicative Interactions in the Mainstream Setting**

Buckley (1995) set out to improve
the language skills of a group of teenagers with Down syndrome who were non-readers. Students repeated sentences given verbally by the teacher. Students that were given picture cards with printed sentences on them did better than those who had pictures only. The teens learned much faster with the printed sentences. The sentences acted as visual supports for weaknesses in short term auditory memory.

In a related vein, Meyers (1994) reports that with the use of a “talking” computer, children with Down syndrome can by-pass the difficulty they often experience in decoding written texts. In fact, in one of her studies she helped teenagers with Down syndrome learn to speak in sentences through using the computer’s speech output capability. Remarkably, after 10 computer sessions, students with Down syndrome also improved their writing, using three times as many spontaneous grammatical sentences as compared with their baseline performance.

The relative gestural strength of children with Down syndrome can be put to good use in the form of “total communication,” which combines manual signs or gestures and speech (Freeman & Hodapp, 2000) that the teacher and/or nondisabled peers could model. When effective communication is desired, augmentative type aids are sometimes necessary. In the case of a student with an aptitude for learning signs, a classroom interpreter could be employed. In the case of a student who learns easily understood gestures or pantomimes, the teacher and classmates could tailor a communication system that meets the student’s needs. The use of augmentative type aids has been known to stimulate verbal development (Miller, Liddy, Miolo, & Sedgey, 1995).

Socially appropriate communication, an area which poses challenges for a sizeable number of students with Down syndrome, can be brought under instructional control through the use of behavioral methods (Cuskelly & Gunn, 1997). For instance, controlling task complexity reduces student frustration by focusing on the most important aspects to be learned and minimizing other aspects (e.g., a creative writing assignment that is dictated for the student in order to avoid frustration with spelling and punctuation). The use of errorless learning procedures also reduces student frustration by minimizing mistakes. Furthermore, this procedure appears to be particularly important for teaching new material to students with Down syndrome (e.g., discrimination learning tasks) (Duffy & Wishart, 1997; Duffy & Wishart, 1998). These students learn, retain, and use the information more accurately. For an in depth look at this topic we recommend the books by Nadal and Rosenthal (1995), and Pueschel and Sustrova (1997).

**Deepening the Mainstream “Channel”**

Having pointed out earlier in this article what teachers can do to improve the micro-environment of the mainstream setting through structured student-student interaction sessions, a great deal more can be done to also improve the macro-environment – the climate/milieu/organization of the mainstream setting itself.

To illustrate how this possibility can take form, we turn to an article by Kliwer (1998), who took an ethological approach to studying the school literacy experiences of 10 students with Down syndrome across 12 classrooms, over a two-year period. After extensive teacher interviewing and the generation of field notes based on participant observations, he arrived at the following literacy-related conclusions. First, he concluded that two broad interpretations of literacy were evident in classroom settings. The first interpretation conceptualized literacy as one strand of a linear curriculum requiring student conformity to an objectively identifiable sequence of skills or concepts. The other interpretation conceptualized literacy as the construction of meaning in an evolving web of relationships connecting students, teachers and classroom materials. The second conceptualization appeared to be advantageous for students with Down syndrome because they became a part of a web (a culture) of constructed relationships where they were recognized as symbol users, where written language was recognized as a useful symbolic tool for enhancing student-student relationships. For example, a nine-year old student with Down syndrome who attended a second grade mainstream class and had moderate mental retardation had been taught by the teacher to use a computer keyboard for expressive communication purposes. When an argument occurred with a nondisabled classmate, the student with Down syndrome claimed he was not at fault, not through the use of verbal communication but through the use of the computer keyboard that produced his words of defense on the monitor. Kliwer ends his article by quoting from an article by Cunningham and Allington (1994): “Children who are successful at becoming literate view reading and writing as authentic activities from which to get information and pleasure and by which they communicate with others” (p.21).

The importance of viewing communication as a very broad and interrelated constellation of processes and skills has powerful consequences for students with Down syndrome. This is brought out in a compelling way in Kliwer’s study. As to whether every teacher would want to (or could) operate a mainstream classroom in the manner he calls the “Instruction of meaning in an evolving set of relationships...” on an ongoing basis is a professional decision he leaves open. Nonetheless, a teacher who doesn’t extensively use this wholistic communication approach might try using it for a small portion of his/her language arts time. If it produces favorable results for the student with Down syndrome he/she may increase the time for this type of activity.

Dramatic arts, another interactive classroom activity, has also been used by teachers in language arts lessons to encourage creative content and promote student writing through a “real-life” connection. An example of this is one of a series of studies (Rynders, Schleien,
Meyer, Vandercook, Mustonen, Colond, & Olson, 1993) that focuses on the dramatic arts as a vehicle for enhancing communicative interactions. Miller, Rynders, and Schleien (1993) compared the interaction patterns of two integrated groupings of elementary education students drawn from two regular fifth-grade classrooms and two special education classrooms serving students of the same age with mental retardation. One of the integrated groupings participated in cooperative siodrama activities; the second group participated in cooperative games. The cooperative siodrama intervention consisted of improvisational acting exercises devised by Spolin (1963), drawn directly from her book Improvisations for the Drama. The cooperative games intervention was comprised of games from The Cooperative Sports and Games Book (Orlick, 1978), a compendium of indoor and outdoor games for school-aged children.

An example used to promote cooperative siodrama had individuals in a small group pass a ball around the group, pretending what would happen if the ball became "slimy," "hot," "extremely heavy," and so on. An example of a cooperative game was to divide the groups into two relay teams. Each team received a large ball that needed to be carried cooperatively by two partners in the typical relay race fashion.

Results showed that children with disabilities in the cooperative drama group were approached significantly more often by nondisabled children as compared with the number of approaches by nondisabled children in the cooperative games group. Similarly, children with disabilities in the drama group approached their nondisabled peers more often than did their counterparts with disabilities in the cooperative games group, although this difference was not statistically significant.

An unanticipated event occurred during the study which gave us a glimpse of the rich communicative potential of cooperative siodrama. The integrated cooperative siodrama group had received directions for creating an imaginary playground and then "playing" on it. They stood on the school stage with only a few chairs and some small wedged-shaped stage risers to work with. Jay, a nondisabled student, took a riser, tipped it onto its side, boosted himself onto it, and slid down. Chris, a same-age schoolmate in Jay's group, who had serious cognitive and movement disabilities, stood by, watching. Spontaneously, Jay invited Chris to use the "slide" too. Realizing that Chris could not climb up on the riser by himself, he moved a chair close to it and steadied Chris as he transferred from the chair to the riser and as he slid down. The look of pleasure on Chris' face spoke volumes about this form of cooperative interaction. That interaction provided an opportunity for Chris to do something that would have been highly unlikely to occur in a segregated classroom. Isn't the richness of this exchange what the promise of mainstreaming is all about? The use of higher-order symbolic skills employed by Chris and Jay are a part of fulfilling that promise.

Conclusion

Students with Down syndrome will do better in mainstreamed settings if communicative interactions are deliberately structured, as in cooperative learning and peer tutoring. Deliberate structuring of the mainstream environment can be employed simultaneously with the delivery of typical instruction to further the communicative growth of students with Down syndrome (e.g., simultaneous use of peer tutoring with sight-word learning or cooperative learning with math homework review groups).

Creating a mainstream classroom that uses the full interactive potential of its participants is not without challenges: some students with Down syndrome will exhibit stubbornness and nearly all of them will have verbal communication difficulties. On the other hand, some deliberate structuring of interactions and environments can minimize weaknesses and maximize strengths (e.g., nonverbal aptitude and pleasant personality accompanied by earnest effort). In addition, the teacher can call upon related service personnel, such as the student's special education teacher, a paraprofessional, or a speech-language specialist, who will normally be available for collaboration, to creatively support the teacher's program. (For those who desire additional information to support their mainstream programs, we have provided a source of newsletters, curricula, resource guides, brochures, checklists, audio-visual materials, etc. appended to the reference list.)

When students with Down syndrome and their nondisabled classmates are not "adrift" in the mainstream it will be due in large measure to the ability of teachers to handle the "rudder," to structure communicative interactions and the mainstream environment successfully.

References


Minneapolis Star-Tribune, April 12, 2000.


**Resource Materials for Mainstream Teachers**

A list of resource materials and their descriptions can be obtained in the form of a free publications catalog available from the University of Minnesota’s Institute on Community Integration. Materials listed in the catalog are available at a nominal cost because development and publication is supported through grants. For a catalog, contact:

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