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Meeting the Needs of Students with Co-Occurring Disabilities _____

This is the full text of the paper cited below.

Office of Special Education Programs. (2000). Meeting the needs of students with co-occurring disabilities. *Twenty-second annual report to Congress on the implementation of the Individuals with Disabilities Education Act* pp. II-29 through II-48. Washington, DC: U.S. Department of Education.

THIS MODULE ADDRESSES ISSUES related to students with two or more co-occurring disabilities, defined as "the co-occurrence of at least two different disorders in the same individual" (Light & DeFries, 1995). For over 20 years, educators have debated the benefits of disability categories delineated in the Individuals with Disabilities Education Act (IDEA). Reynolds and Birch (1977, p. 75) noted that "the traditional categories for exceptional children do not 'carve nature at its joints.' They are not usually real, necessary, meaningful, or useful." Goldstein and colleagues (1975) delineated advantages and disadvantages of categorical classification. Among the advantages, the authors reported that the categories improve communications among professionals, apply labels that are educationally relevant, and provide a rallying point for public support. Among the disadvantages, they noted that the categories encourage overgeneralizations about children, assume that the cause of learning problems resides exclusively with the child, may bias teachers' expectations, and do not provide information necessary to design effective instruction.

IDEA defines a child with a disability as a child:

"(i) with mental retardation, hearing impairments (including deafness), speech or language impairments, visual impairments (including blindness), serious emotional disturbance (hereinafter referred to as emotional disturbance), orthopedic impairments, autism, traumatic brain injury, other health impairments, or specific learning disabilities; and

(ii) who, by reason thereof, needs special education and related services.

. . . The term 'child with a disability' for a child aged 3 through 9 may, at the discretion of the State and the local education agency, include a child --

(i) experiencing developmental delays, as defined by the State and as measured by appropriate diagnostic instruments and procedures, in one or more of the following areas: physical development, cognitive development, communication development, social or emotional development, or adaptive development; and

(ii) who, by reason thereof, needs special education and related services" (S. 602[3]).

In part because of the definitions used in IDEA, many parents, educators, administrators, policy makers, and other stakeholders think of disability as a categorical construct, with categories reflecting the 13 disabilities identified in the law. Traditionally, personnel preparation programs and certification and licensure have been categorical; in consequence, many special education programs have also been categorically based. The data-reporting requirements specified under IDEA require States to report counts of children by disability, further reinforcing the categorical model.

At one level, IDEA recognizes that some students have more than one disability: students with deaf-blindness and multiple disabilities are specifically mentioned. Children with developmental delay, by definition, may have delays in one or more areas. Multiple disabilities are defined in Federal regulations as "concomitant impairments . . . the combination of which causes such severe educational needs that they cannot be accommodated in special education programs solely for one of the impairments" (CFR 34 S. 300.7[c][7]). While this definition does not require any particular level of severity of disability, it is accepted practice for State education agencies to report their child count by primary disability unless the co-occurring disabilities are severe. However, the use of primary disability classifications can obscure the fact that many special education students have more than one disability.

This module focuses on a broader scope of students than those who have multiple disabilities, as defined by IDEA. (Students who have been described in some literature as having multiple disabilities will be referenced to in this module as having co-occurring disabilities.) The report reviews available literature and uses data from the National Health Interview Survey-Disability Supplement (NHIS-D) to explore issues related to students with two or more co-occurring disabilities. It addresses the prevalence of co-occurring disabilities, the demographic characteristics of students with co-occurring disabilities, special education and related services for this population, and parental satisfaction with those services.

REVIEW OF THE LITERATURE

As a group, students with co-occurring disabilities may have more complex needs than those with a single disability (Abikoff & Klein, 1992; Downing & Eichinger, 1996; Orelove, 1996). For example, students with co-occurring learning and emotional disabilities may have more difficulty learning than students with only one of these disabilities. This literature review summarizes information on the prevalence of co-occurring disabilities, identification and assessment, special education and related services, and educational outcomes for this population.

Prevalence of Co-Occurring Disabilities

Previous research suggests that co-occurring disabilities are quite common among children with disabilities. However, estimates vary from study to study, in part because of differences in the populations covered and definitions of disability used. Some researchers estimate that 19 percent of special education students have co-occurring disabilities; others report figures as high as 48 percent (Hogan, Msall, Rogers, & Avery, 1997; Wagner et al., 1991).

According to the National Longitudinal Transition Study of Special Education Students (NLTS), 19 percent of secondary-aged students in special education had additional disabilities beyond their primary disability; the most common were speech impairments (10 percent) (Wagner et al., 1991). Hogan and colleagues (1997) found that approximately 48 percent of the 4 million children aged 5 through 17 who had at least one serious functional limitation in mobility, self-care, communication, or learning also had one or more additional mild limitations in other areas of functioning. However, it is not clear if these mild limitations would meet the IDEA standard for eligibility.

Based on analysis of the National Household Education Survey (NHES), Westat (1998) found that 11 percent of children aged 3 through 5 with disabilities had two disabilities, and 51 percent had three or more disabilities. Among children aged 6 through 11, 26 percent had two disabilities, and 22 percent had three or more disabilities. It should be noted that the NHES relies on parent reports of disability, which are generally different from administrative reports.

Many smaller studies have documented the prevalence of co-occurring disabilities among specific populations. Learning disabilities and emotional disturbance frequently co-occur. Fessler, Rosenberg, and Rosenberg (1991) found that 38 percent of children treated at an inpatient psychiatric hospital had learning disabilities. Javorsky (1995) reported a similar percentage: 33 percent. Forness, Kavale, and Lopez (1993) found that 27 percent of children with conduct disorder also had learning disabilities. However, because of differences in medical and educational definitions of emotional disorders, these children did not necessarily meet the IDEA definition of emotional disturbance. Hinshaw (1992) argued that the percentage of externalizing children with learning disabilities (i.e., those exhibiting impulsivity, defiance, or inattention) is lower than commonly believed (6 to 20 percent) and that, among children with learning disabilities, the most common emotional disturbances are internalizing (such as sadness, withdrawal, and anxiety).

Learning disabilities and speech and language impairments also frequently co-occur. Schoenbrodt, Kumin, and Sloan (1997) asserted that the boundaries between communication disorders and learning disabilities often overlap, making it difficult to separate the effects of each from their combined effects. Many of the defining characteristics of learning disabilities are language related; difficulty with listening, speaking, reading, and writing. Gibbs and Cooper (1989) found that 96.2 percent of 242 students with learning disabilities had one or more communication disorders, including speech, language, and hearing disorders. The most common were language disorders (90.5 percent).

Because some visual impairments have a neurological basis and because low birth weight may increase the risk of both visual impairments and learning disabilities, these two disabilities may co-occur at a higher rate than would be expected (Erin & Koenig, 1997). Corn and Ryser (as cited in Erin & Koenig, 1997) estimated that 14 percent of students with visual impairments had co-occurring visual disabilities.

The Florida Department of Education collects duplicated and unduplicated counts of children's disabilities. The unduplicated count captures each child's primary disability, while the duplicated count captures all disabilities for each child. During the 1997-98 school year, speech impairments, language impairments, and visual impairments were the disabilities with the highest percentage differences between duplicated and unduplicated counts, suggesting that these disabilities occurred more commonly among those with more than one disability. The duplicated count of children with speech impairments was 37 percent greater than the unduplicated count; the duplicated count of children with language impairments was 57 percent

greater; and the duplicated count of children with visual impairments was 51 percent greater (B. Harrison, personal communication, January 14, 1999).

Identification and Assessment

Identification and assessment of students with co-occurring disabilities can be challenging (Fessler et al., 1991; Forness et al., 1993; Light & DeFries, 1995). Severe behavioral problems, for example, may prevent the child's specific learning needs from being accurately identified (Fessler et al., 1991). Learning disabilities and language disorders may be particularly difficult to distinguish. Children who have difficulty reading, writing, and spelling may have language disorders rather than learning disabilities because these two disabilities often present in similar ways, through "difficulty with language form; disruption of content; impairment in use; distortions in interactions among form, content, and use; and separation of form, content, and use" (Schoenbrodt et al., 1997, p. 266). Schoenbrodt and colleagues (1997) believe that children with learning disabilities may exhibit difficulties only in academic settings, while those with both language and learning disabilities may have difficulties in social situations as well.

Regulatory definitions of learning disabilities (34 CFR S. 300.7[c][10]) and emotional disturbance (34 CFR S. 300.7[c][4]) may force school personnel to rule out other disabilities before including a child in either category. For example, the IDEA regulations' definition of learning disabilities excludes children whose learning problems are primarily the result of mental retardation or emotional disturbance. Therefore, the guidelines presume a distinct and measurable difference between children with learning disabilities, emotional impairments, and mental retardation (Bricklin & Gallico, 1984). The National Joint Committee on Learning Disabilities' (NJCLD) definition of a learning disability explicitly states that learning disabilities may occur concomitantly with other disabilities, including mental retardation (as cited in Polloway, Patton, Smith, & Buck, 1997). Some researchers suggest that it can be difficult to distinguish among these disabilities, which often manifest themselves through poor academic achievement, social maladjustment, and below average IQ (Hallahan & Kauffman, as cited in Hallahan & Kauffman, 1977). Others disagree, noting empirical differences (Affleck, Edgar, Levine, & Kortering, 1990; Polloway, Epstein, Patton, & Ball, 1986). Polloway and colleagues (1997) asserted that learning disabilities must be viewed as a disability secondary to mental retardation and not the reverse. For students initially identified with mental retardation, the addition of a learning disability label encourages a view that individuals with mental retardation have both strengths and weaknesses and that they exhibit intrapersonal discrepancies in performance. The addition of a mental retardation label for an individual with learning disabilities, they suggested, may be less valuable for program planning.

In reference to students with co-occurring learning and emotional disabilities, Fessler and colleagues (1991, p. 104) asked, "When these (students) were identified as having special needs, did the mandate to ascertain a primary (disability) limit the focus of the school's evaluation? Were the subjects' behavioral problems so severe that their individual learning needs could not be identified?". Javorsky (1995) supported these concerns when he reported that 23 percent of the children in psychiatric placements who were identified with learning disabilities received special education to address their learning disabilities, 14 percent received services for emotional disturbance, and only 6 percent received services for both learning and emotional disabilities. Children with disruptive disorders were more likely than children with affective disorders to be identified with learning disabilities.

Because many sensory impairments are identified before children reach school age, academic difficulties associated with a learning disability may be attributed to the sensory impairment. For example, many signs of learning disabilities, such as frustration with reading,

difficulty identifying letters and words, and poor handwriting may all be attributed to poor vision. Harley, Truan, and Sanford (as cited in Erin & Koenig, 1997) listed the characteristics of students with visual impairments who might have co-occurring learning disabilities. These characteristics included academic achievement below expectations based on intellectual capacity; distraction and inattention; use of avoidance behaviors; and difficulties with perception, organization, memory, concrete thinking, perseveration and fixation, language, or generalization.

Special Education and Related Services

In addition to complicating identification and assessment, co-occurring disabilities may also impede provision of appropriate services (de Mesquita & Gilliam, 1994; Fessler et al., 1991). For example, students with both learning and behavior problems may be especially difficult to serve, and special education delivery systems may be inadequate for meeting the concomitant needs of many students in special education.

Several studies suggest that services for students with co-occurring disabilities are inadequate (Fessler et al., 1991; Giangreco, Dennis, Edelman, & Cloninger, 1994; Gibbs & Cooper, 1989). For example, Gibbs and Cooper (1989) reported that only 6 percent of students with learning disabilities received speech/language services, despite the fact that over 90 percent of them had communication disorders; many of these disorders were in the mild-to-moderate range. Giangreco and colleagues (1994) analyzed the IEPs of students with severe multiple disabilities. They found that many of the IEPs included goals that were overly broad and were unconnected to the general education curriculum; listed goals for staff rather than students; and were discipline-referenced, meaning that they lacked coordination among goals written by various service providers. Because students with co-occurring disabilities are more likely than students with a single disability to receive special education and related services from a variety of providers, there may be a need for greater collaboration in planning and providing these services.

Teachers who work with students with co-occurring disabilities may require specialized preservice and inservice training and materials (Shaughnessy, 1996). Results from three studies suggest that personnel who serve students with co-occurring disabilities feel inadequately prepared to address all their students' educational needs (Ford & Fredericks, 1995; Izen & Brown, 1991; Sobsey & Wolf-Schein, 1996). In one of these studies, roughly half the teachers serving children with visual impairments and severe, multiple disabilities felt they were inadequately prepared (Erin, Daugherty, Dignan, & Pearson, 1990). Another study found that teachers of students with profound multiple disabilities were less satisfied with their preservice training as the number of students with multiple disabilities in their classrooms increased, suggesting a mismatch between preservice preparation and job responsibilities (Izen & Brown, 1991). Ford and Fredericks (1995) observed that the majority of children with deaf-blindness were served by teachers trained to teach children with other severe disabilities. These teachers' knowledge was generally inadequate to meet the needs of children with deaf-blindness. Similarly, directors of special education cooperatives in rural areas reported that the limited quality of educational services provided to students with severe to profound mental impairments and multiple disabilities was, in part, due to the lack of qualified teachers (Cates & Kinnison, 1991).

STUDY METHODS

The National Health Interview Survey (NHIS) is an annual survey on the health of the nation's civilian, non-institutionalized population. The NHIS includes a standard set of questions, known as the core questionnaire, as well as supplemental questions on additional topics of interest. The NHIS is administered through in-person computer-assisted interviews.

An adult member of the household is asked questions about him or herself, as well as about other household members, including children.

In 1994 and 1995, NHIS included a disability survey (NHIS-D), along with the core questionnaire; it was used to identify children and adults with disabilities eligible to participate in a follow-back interview on disability. The disability follow-back for children included items on use of and need for services, functional assessment, the impact of the child's disability on the family, and educational services. The respondent was the parent or adult in the household who knew the most about the child's health.¹ Because the data were collected from parent interviews, under-reporting or over-reporting of some disabilities is possible.

Previous research suggests that estimates of the number and percentages of children receiving special education and related services differ, depending on whether the source of the estimate is administrative records or parent reports.

In general, prevalence estimates based on parent reports are lower than those based on administrative records. OSEP's *Annual Report to Congress* and the NHIS-D, for example, report different totals for children aged 6 through 17 who received special education and related services during the 1994-95 school year. The *Annual Report*, which is based on State administration records, reports the total number of children at 4,668,933 (U.S. Department of Education, 1996). The NHIS-D, which is a survey of a sample of parents, indicates that the total number of children was 2,655,912. It may be that some parents are not aware that their children receive special education and related services, or that some parents are unfamiliar with the terminology used in health or educational surveys. This may be especially true for families from ethnic minority groups because the concept of disability varies across cultures.

Prevalence estimates based on parent reports and administrative records may also differ within disability category. Parents tend to over-report the prevalence of visual impairments because they are unfamiliar with the criteria States use for determining special education eligibility. In administrative records, State and local education agencies typically report on the primary disabilities of students receiving special education and related services. In cases of co-occurring disabilities, decisions about which disability is primary may also affect prevalence estimates.

The NHIS-D follow-back survey included a sample of 2,687 children. Of those, 801 were children aged 3 or older who received special education services during the 12 months prior to the survey. Of those 801 children, 600 had adequate disability information and were included in the analysis. This report compares three groups of children included in the NHIS-D: children who were reported as having one disability, children who were reported as having two disabilities, and children who were reported as having three or more disabilities.² In some cases,

¹ Once respondents indicated that their children received special education and related services, they were asked about the types of disabilities their children had. Interviewers read a list of disabilities to the respondent and asked whether the child had each disability. The order in which the disabilities were listed could have affected responses. For example, the multiple disability category is one of the last disabilities listed. All of the respondents who indicated that their children had multiple disabilities also indicated that they had other specified disabilities. This suggests that there may have been some double counting of disabilities. Three disabilities were always selected in combination with other disabilities: traumatic brain injury, autism, and mental retardation. As in the case of multiple disabilities, it is not clear whether respondents were referring to different aspects of a single disability or to separate disabilities.

² A series of complex decision rules were used to code students as having one, two, or three or more disabilities. Children with deaf-blindness were coded as having two disabilities. Children with multiple disabilities were coded as having two or more disabilities, depending on the specific disabilities reported by parents. For example, if

sample sizes were too small to support analyses of children with three or more disabilities. When that occurred, children with two and three or more disabilities were combined into a single group. Because the NHIS-D was not designed for describing students with co-occurring disabilities, sample sizes were too small to result in statistically significant differences between or among groups at $\alpha = .05$. This was exacerbated by the complex sample design used in the NHIS-D, which had large design effects, reducing the effective sample sizes even further. Data were analyzed using WesVar, a statistical package designed for use with complex samples.

NHIS-D FINDINGS

This section of the report describes the results of the NHIS-D analyses on children with co-occurring disabilities. It includes information on the prevalence of co-occurring disabilities, demographic characteristics of children with co-occurring disabilities, the special education and related services these students received, the educational environments in which students were served, and parents' satisfaction with those services.

Prevalence of Co-Occurring Disabilities

Based on data from the NHIS-D, 68 percent of special education students had a single disability, 23 percent had two disabilities, and 9 percent had three or more disabilities. This suggests that the prevalence of co-occurring disabilities is 32 percent. However, this percentage is somewhat lower than percentages reported in previous research.

Among children with one disability, the largest percentage had learning disabilities (58 percent), followed by speech/language impairments (25 percent). Of children with two disabilities, the most commonly reported co-occurring disabilities were learning disabilities and speech/language impairments (49 percent) and learning disabilities and emotional disturbance (24 percent). (Caution should be used in interpreting this percentage due to small sample sizes.)

Demographic Characteristics of Children with Co-Occurring Disabilities

Previous research indicates that students in special education have different demographic characteristics from school-aged children overall. Students with disabilities are more likely than other students to be Black, from low-income families, and from families whose parents have less formal education (Wagner et al., 1991). This section describes the demographic characteristics of students with co-occurring disabilities and compares them with the characteristics of students with a single disability. The demographic characteristics included in NHIS were gender, race, ethnicity, family structure, parents' education, and poverty.

The gender distributions of children with one disability and two or more co-occurring disabilities were quite similar. Of children with one disability, 67 percent were male, and 33 percent were female. This is compatible with previous research that showed that males comprise slightly over two-thirds of special education students (Wagner et al., 1991). Of children with co-occurring disabilities, 68 percent were male, and 32 percent were female.

parents indicated that their child had a learning disability, emotional disturbance, and multiple disabilities, the child was coded as having two disabilities. If parents indicated that their child had a learning disability, speech or language impairments, visual problems, and multiple disabilities, the child was coded as having three or more disabilities. It was difficult to determine whether children with developmental delays had co-occurring disabilities because one or more delays may be included under the definition; these children were excluded from the analysis. A total of 152 children were reported as having developmental delays.

Children from racial minority groups were more likely than white children to have two or more co-occurring disabilities (37 percent compared to 31 percent, although this difference was not statistically significant). It is not clear from this analysis whether the disproportion is a function of bias in the special education eligibility process, poverty among racial minority groups, or other factors. (Sample sizes were inadequate to conduct a multivariate analysis predicting the prevalence of co-occurring disabilities based on demographic characteristics.)

Data from the NHIS-D suggest that Hispanic students were slightly less likely than non-Hispanic students to have co-occurring disabilities, 29 percent compared to 32 percent; this difference was not statistically significant. The under-representation of Hispanics in special education and, in particular, in certain disability categories, has been documented in earlier studies (Harry, 1994; Westat, 1998). For example, Hispanic students appear to be under-represented in programs for students with speech/language impairments. Because speech/language impairment is one of the most common co-occurring disabilities, it follows that Hispanic students may be under-represented in this population, as well.

NHIS-D also included information on family structure. Students with two or more co-occurring disabilities were more likely to live with a single parent (36 percent) or no parent (50 percent) than students with a single disability (32 percent). (See table 1.)

The relationship between co-occurring disabilities and poverty level was not significant. This may be because of the poverty measure used; it distinguished only among those above and below the poverty line. A poverty measure with more income categories might have shown a stronger relationship with the prevalence of co-occurring disabilities. Point estimates suggested that students with two or more co-occurring disabilities were more likely than students with one disability to live below the poverty level (table 2). It seems logical to associate poverty with co-occurring disabilities because of the economic costs of caring for children with co-occurring disabilities or because co-occurring disabilities may be more common among individuals living in poverty. The more complex needs of students with co-occurring disabilities may impede parents' ability to work full-time outside the home or may be associated with higher medical expenses. Families living in poverty may have limited access to high-quality preschool experiences or medical care, which may lead to secondary disabilities that are prevented in higher income households. In addition, students with co-occurring disabilities were less likely to live in two-parent households, affecting household income.

Table 1. Number and Percentage of Students Receiving Special Education and Related Services, by Family Structure and Number of Disabilities

<u>Number of Disabilities</u>	<u>Both Parents(a)</u>	<u>Single Parent(a) or No Parent(b)</u>	<u>Total</u>
One disability Percent	1,057,435 68.3	491,025 31.7	1,548,460 100.0
Two disabilities Percent	319,492 63.9	180,149 36.1	499,641 100.0
Three or more disabilities Percent	107,429 50.2	106,680 49.8	214,109 100.0
Total Percent	1,484,356 65.6	777,854 34.4	2,262,210 100.0

(a) With or without another adult relative. (b) One adult relative

Notes: The following responses were set to missing: Other and No parent, but two or more adult relatives.

Source: 1995 National Health Interview Survey

Table 2. Number and Percentage of Students Receiving Special Education and Related Services, by Poverty Threshold (a) and Number of Disabilities

<u>Number of Disabilities</u>	<u>At or Above the Poverty Threshold</u>	<u>Below the Poverty Threshold</u>	<u>Total</u>
One disability Percent	1,067,390 72.2	411,208 27.8	1,478,598 100.0
Two disabilities Percent	341,825 68.7	155,760 31.3	497,585 100.0
Three or more Percent	119,246 62.5	71,448 37.5	190,694 100.0
Total Percent	1,528,461 70.5	638,416 29.5	2,166,877 100.0

(a) Poverty threshold is based on family size, number of children under 18 years of age, and family income using the 1994 poverty levels derived from the August 1995 Current Population Survey.

Source: 1995 National Health Interview Survey.

The findings regarding poverty and family structure are interesting in light of a recent article by Fujiura and Yamaki (2000). These authors used NHIS data from 1983 through 1996 to examine trends in childhood disability prevalence and their interaction with socioeconomic status. Disability risk was higher among children living in poverty and in single-parent households, although the direction of these relationships was unclear. For example, the authors noted that they could not determine "the extent to which single parenthood is a cause or consequence of poverty, or what underlying dynamics attenuate or exaggerate risk" (Fujiura &

Yamaki, 2000, p. 196). Although these findings could not be considered conclusive, the authors concluded that they were "highly suggestive and should be a source of concern" (p. 194).

The relationship between the highest education level of responsible adults and the prevalence of co-occurring disabilities completes the demographic profile of students with co-occurring disabilities. Parents or guardians of children with co-occurring disabilities were less likely than those with only one disability to have a high school diploma, although these differences were not significant (table 3). Having a parent with a high school diploma is associated with a range of positive outcomes for children. Education level is also highly correlated with poverty status (Wagner et al., 1991; Westat, 1997).

Table 3. Number and Percentage of Students Receiving Special Education and Related Services, by Highest Educational Level of Responsible Adult Family Member and Number of Disabilities

<u>Number of Disabilities</u>	<u>Less Than HS Diploma</u>	<u>HS Diploma or More</u>	<u>Total</u>
One disability Percent	270,045 17.1	1,308,912 82.9	1,578,957 100.0
Two or more disabilities Percent	141,947 19.2	596,115 80.8	738,062 100.0
Total Percent	411,992 17.8	1,905,027 82.2	2,317,019 100.0

Note: $p < .05$

Source: 1995 National Health Interview Survey

Special Education and Related Services

Data from the NHIS-D suggest that students with co-occurring disabilities received a greater variety of special education and related services than students with one disability. On average, children with one disability received only one type of service (an average of 1.4 services per child); those with two disabilities received two types of services (1.9 services per child); and children with three or more disabilities received three types of services (3.1 services per child).

A larger percentage of children with co-occurring disabilities than of children with only one disability received each selected special education and related service, such as transportation, speech/language therapy, audiology, counseling, and developmental testing (table 4). The most common service for children with one disability and two or more co-occurring disabilities was speech/language therapy, which was received by 32.6 percent and 57.8 percent of students, respectively (table 4). (Physical therapy and occupational therapy were not included in the analysis because of the small number of students in the sample who received those services.) The differences in the percentage of students receiving specific services may reflect the complex needs of students with co-occurring disabilities, although these differences were not statistically significant.

Table 4. Number and Percentage of Students Receiving Selected Special Education and Related Services, by type of Service Received (a) and Number of Disabilities

<u>Number of Disabilities</u>	<u>Transportation</u>	<u>Speech/Lang Therapy</u>	<u>Audiology</u>	<u>Mental Health or Counseling</u>	<u>Developmental Testing</u>
One disability	81,215	496,301	79,145	175,083	292,607
Percent	5.3	32.6	5.2	11.5	19.2
Two or more	138,437	414,615	99,482	171,336	245,243
Percent	19.3	57.8	13.9	23.9	34.2
Total	219,652	910,916	178,627	346,419	537,850

(a) Respondents could indicate more than one type of service received. Percentages are based on total number of respondents, by type of service received and number of disabilities.

Source: 1995 National Health Interview Survey

Educational Environments

The majority of children with disabilities received educational services in regular classes, resource rooms, or separate classes in regular schools for either all of part of the day. A greater percentage of children with two or more co-occurring disabilities than of children with one disability received special education and related services in separate classes (28 percent versus 21 percent), although this was not statistically significant. Overall, the percentage of children receiving services at a special day or residential school, at home, in a hospital or institution, or at a provider's office was small.

A larger percentage of children with co-occurring disabilities than of children with one disability received their educational services in a separate classroom located in a regular school (for either all or part of the day). Students with only one disability received their educational services primarily in a resource room located in a regular school (table 5). Furthermore, compared to children with only one disability, a greater proportion of children with two or more co-occurring disabilities received services in more than one of the specified locations (31 percent compared to 15 percent).

Table 5. Number and Percentages of Students Receiving Special Education and Related Services in Various Educational Environments, by Number of Disabilities

<u>Number of Disabilities</u>	<u>Regular Classroom</u>	<u>Resource Room</u>	<u>Separate Class</u>	<u>More Than One Of These Locations</u>	<u>Total</u>
One disability Percent	393,705 28.0	510,374 36.3	289,744 20.6	212,235 15.1	1,406,418 100.0
Two or more Percent	147,774 22.3	118,030 17.8	118,118 28.4	207,062 31.4	661,524 99.9
Total Percent	541,479 26.2	628,764 30.4	477,862 23.1	419,837 20.3	2,067,942 100.0

Note: Special day schools, special residential schools, hospitals or institutions, provider's offices, and other environments were excluded due to small sample sizes.

Source: 1995 National Health Interview Survey.

Parental Satisfaction with Services

Parents of students with co-occurring disabilities (81 percent) were slightly less likely than parents of students with one disability (87 percent) to report that they were satisfied with the educational services provided to their children (table 6). In addition, 19 percent of parents whose children had co-occurring disabilities reported that they tried to get additional special education and related services for their child. This compared with 10 percent of parents whose children had one disability.

Table 6. Number and Percentage of Students Whose Parents Expressed Overall Satisfaction with Educational Services, by Number of Disabilities

<u>Number of Disabilities</u>	<u>Satisfied</u>	<u>Dissatisfied</u>	<u>Total</u>
One disability Percent	1,322,062 86.5	207,296 13.6	1,529,358 100.1
Two or more disabilities Percent	579,935 80.5	140,886 19.6	720,821 100.1
Total Percent	1,901,997 84.5	348,182 15.5	2,250,179 100.0

Notes:

Percentages may not sum to 100 due to rounding.

Parents who were *very satisfied* or *somewhat satisfied* were coded as satisfied, and parents who were *very dissatisfied* and *somewhat dissatisfied* were coded as dissatisfied.

Source: 1995 National Health Interview Survey

SUMMARY AND IMPLICATIONS DRAWN FROM THE LITERATURE

In comparing the demographic characteristics of students with a single disability to students with two or more co-occurring disabilities, data from the NHIS-D suggested that racial minorities were more likely to have co-occurring disabilities. Hispanic students were slightly less likely to have co-occurring disabilities. The gender distributions of children with one disability and children with co-occurring disabilities were compatible with previous research that suggests that males comprise slightly over two-thirds of special education students. In addition, the NHIS-D revealed that students with co-occurring disabilities were more likely to live with a single parent or no parent and to have parents who did not have high school diplomas.

One-third of students who received special education and related services had co-occurring disabilities. The most common combinations of disabilities were learning disabilities with speech/language impairments and learning disabilities with emotional disturbance. Overall, children with co-occurring disabilities received a greater number of special education and related services than children with only one disability. A greater percentage of children with co-occurring disabilities received special education and related services in separate classes than did children with one disability. Also, a greater percentage of them received a broader scope of services in more varied educational settings than children with one disability. Caregivers of children with co-occurring disabilities requested additional services more often than did caregivers whose children had only one disability and were less likely to report that they were satisfied with services provided to their children.

Co-occurring disabilities may be difficult to identify and may make provision of appropriate services particularly challenging. For example, behavioral disorders may overshadow learning disabilities, leading educators to ignore important disability-related needs. In addition, service providers must recognize that language-based services may be less effective for children with co-occurring speech/language impairments. For example, individual and family counseling may be less effective with children who have both psychiatric and language disorders (Forness & Kavale, 1991; Forness et al., 1993; Light & Defries, 1995). Poor communication skills may inhibit children's ability to describe themselves and their feelings or recall or interpret what was said by others. Direct instruction in language and social skills may be needed (Javorsky, 1993).

Awareness of co-occurring disabilities may improve the identification and assessment process by encouraging teachers, administrators, school psychologists, and other service providers to look beyond students' primary disabilities to identify and address all of their disabilities. Researchers must also be aware of co-occurring disabilities in evaluating special education services and programs. Failure to consider co-occurring disabilities may confound studies. For example, a study of students with one disability (e.g., learning disabilities) may produce findings that are largely a consequence of a second ignored disability, e.g., ADD (Light & DeFries, 1995).

The prevalence of co-occurring disabilities and research on teacher preparation suggest a need for changes in preservice and inservice training. Most individuals in training to serve students with learning disabilities will face students with co-occurring learning disabilities and speech/language impairments, emotional disturbances, and attention deficits. Teachers of students with visual impairments are likely to serve students with severe multiple disabilities. Many teachers reported feeling inadequately prepared to address co-occurring disabilities. To address these concerns, administrators of preservice and inservice programs might consider

ways to enhance their focus on the characteristics and needs of students with common co-occurring disabilities and on appropriate interventions to address their needs.

References

- Abikoff, H., & Klein, R. G. (1992). Attention-deficit hyperactivity and conduct disorder: Comorbidity and implications for treatment. *Journal of Consulting and Clinical Psychology, 60*, 881-892.
- Affleck, J. Q., Edgar, E., Levine, P., & Kortering, L. (1990). Post-school status of students classified as mildly mentally retarded, learning disabled or non-handicapped: Does it get better with time? *Education and Training in Mental Retardation, 25*, 315-324.
- Bricklin, P., & Gallico, R. (1984). Learning disabilities and emotional disturbance: Critical issues in definition, assessment, and service delivery. *Learning Disabilities, III*, 141-156.
- Cates, D. L., & Kinnison, L. (1991). *Students with severe to profound mental handicaps and multiple disabilities in rural schools: Can their needs be met?* (ERIC Document Reproduction Service No. ED 342 537)
- de Mesquita, P. B., & Gilliam, W. S. (1994). Differential diagnosis of childhood depression: Using comorbidity and symptom overlap to generate multiple hypotheses. *Child Psychiatry and Human Development, 24*, 157-172.
- Downing, J. E., & Eichelberger, J. (1996). Educating students with diverse strengths and needs together: Rationale and assumptions. In J. E. Downing, *Including students with severe and multiple disabilities in typical classrooms: Practical strategies for teachers* (pp. 1-14). Baltimore: Paul H. Brookes.
- Erin, J., Daugherty, W., Dignan, K., & Pearson, N. (1990). Teachers of visually handicapped students with multiple disabilities: Perceptions of adequacy. *Journal of Visual Impairment and Blindness, 84*, 16-21.
- Erin, J. N., & Koenig, A. J. (1997). The student with a visual disability and a learning disability. *Journal of Learning Disabilities, 30*, 309-320.
- Fessler, M. A., Rosenberg, M. S., & Rosenberg, L. A. (1991). Concomitant learning disabilities and learning problems among students with behavioral/emotional disorders. *Behavioral Disorders, 16*, 97-106.
- Ford, J., & Fredericks, B. (1995). Perceptions of inclusion by parents of children who are deaf-blind. In N. G. Haring & L. T. Romer (Eds.), *Welcoming students who are deaf-blind into typical classrooms* (pp. 37-54). Baltimore: Paul H. Brookes.
- Forness, S. R., & Kavale, K. A. (1991). Social skills deficits as primary learning disabilities: A note on problems with the ICLD diagnostic criteria. *Learning Disabilities Research and Practice, 6*, 44-49.

- Forness, S. R., Kavale, K. A., & Lopez, M. (1993). Conduct disorders in school: Special education eligibility and comorbidity. *Journal of Emotional and Behavioral Disorders, 1*, 101-108.
- Fujiura, G. T., & Yamaki, K. (2000). Trends in demography of childhood poverty and disability. *Exceptional Children, 66*, 187-199.
- Giangreco, M. F., Dennis, R. E., Edelman, S. W., & Cloninger, C. J. (1994). Dressing your IEPs for the general education climate. *Remedial and Special Education, 15*, 288-296.
- Gibbs, D. P., & Cooper, E. B. (1989). Prevalence of communication disorders in students with learning disabilities. *Journal of Learning Disabilities, 22*, 60-63.
- Goldstein, H., Arkell, C., Ashcroft, S., Hurley, O., & Lilly, S. (1975). Schools. In N. Hobbs (Ed.), *Issues in the classification of children* (Vol. 2). (pp. 4-61). San Francisco: Jossey-Bass.
- Hallahan, D. P., & Kauffman, J. M. (1977). Labels, categories, behaviors: ED, LD, and EMR reconsidered. *The Journal of Special Education, 11*, 139-149.
- Harry, B. (1994). *The disproportionate representation of minority students in special education: Theories and recommendations*. Alexandria, VA: National Association of State Directors of Special Education.
- Hinshaw, S. P. (1992). Academic underachievement, attention deficits, and aggression: Comorbidity and implications for intervention. *Journal of Consulting and Clinical Psychology, 60*, 893-903.
- Hogan, D. P., Msall, M. E., Rogers, M. L., & Avery, R. C. (1997). Improved disability population estimates of functional limitation among American children aged 5-17. *Maternal and Child Health Journal, 1*, 203-213.
- Izen, C. L., & Brown, F. (1991). Education and treatment needs of students with profound, multiply handicapping, and medically fragile conditions: A survey of teachers' perceptions. *Journal of The Association for Persons with Severe Handicaps, 16*, 94-103.
- Javorsky, J. (1993). Language coding deficits in ADHD children and adolescents. *The ADHD Report, 1*, 8-9.
- Javorsky, J. (1995). An examination of language learning disabilities in youth with psychiatric disorders. *Annals of Dyslexia, XLV*, 215-231.
- Light, J. G., & DeFries, J. C. (1995). Comorbidity of reading and mathematics disabilities: Genetic and environmental etiologies. *Journal of Learning Disabilities, 28*, 96-106.
- Orelove, F. P. (1996). Designing transdisciplinary services. In F. P. Orelove & D. Sobsey, *Educating children with multiple disabilities: A transdisciplinary approach* (pp. 1-34). Baltimore: Paul H. Brookes.
- Polloway, E. A., Epstein, M. H., Polloway, C. H., Patton, J. R., & Ball, D. W. (1986). Corrective reading program: An analysis of effectiveness with learning disabled and mentally retarded children. *Remedial and Special Education, 7*, 41-47.

- Polloway, E. A., Patton, J. R., Smith, T. E., & Buck, G. H. (1997). Mental retardation and learning disabilities: Conceptual and applied issues. *Journal of Learning Disabilities, 30*, 297-308.
- Reynolds, M. C., & Birch, J. W. (1977). Origins of change. In M. C. Reynolds & J. W. Birch, *Teaching exceptional children in all America's schools*. Reston, VA: The Council for Exceptional Children.
- Schoenbrodt, L., Kumin, L., & Sloan, J. M. (1997). Learning disabilities existing concomitantly with communication disorder. *Journal of Learning Disabilities, 30*, 264-281.
- Shaughnessy, M. F. (1996). Working with multiply handicapped children. *The Educational Forum, 61*, 63-66.
- Sobsey, D., & Wolf-Schein, E. (1996). Children with sensory impairments. In F. P. Orelove & D. Sobsey, *Educating children with multiple disabilities: A transdisciplinary approach* (pp. 411-450). Baltimore: Paul H. Brookes.
- U.S. Department of Education. (1996). *Eighteenth annual report to Congress on the implementation of the Individuals with Disabilities Education Act*. Washington, DC: U.S. Government Printing Office.
- Wagner, M., Newman, L., D'Amico, R., Jay, E. D., Butler-Nalin, P., Marder, C., & Cox, R. (1991). *Youth with disabilities: How are they doing?* Prepared under contract for the Office of Special Education Programs, U.S. Department of Education. Menlo Park, CA: SRI International.
- Westat. (1997). *Report on extant data sets and disability classifications*. Rockville, MD: Author.
- Westat. (1998). *Final report on extant data sets and disability classifications*. Rockville, MD: Author.

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