Disproportionality in Transition Services: A Descriptive Study

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Abstract: The purpose of this study was to examine disproportionality in transition services for students with disabilities. The authors predicted that students’ transition services and secondary programs would be driven not only by their postschool goals, but also by their gender, ethnicity, disability, and school setting. To test this hypothesis, the researchers examined school records and interviews of more than 4,500 students in a northeastern state who graduated or aged out of special education in the years 2005–2008. The authors found that secondary programs and transition services varied significantly for students from differing school settings and differing gender, ethnicity, and disability groups and that this often resulted in poor alignment between students’ goals and their secondary curricula and transition services. The authors propose that these findings indicated the need for earlier transition planning and better connections between middle and high schools.

In the 1990s transition researchers developed a consensus about the need for a “transition perspective” of secondary education for students with disabilities (Kohler, 1998). Yet research indicated that more than a decade later, secondary programs continued to be driven by the availability of services and by traditional systems of tracking certain types of students into certain types of programs (McMahan & Baer, 2001; Rusch, Hughes, Agran, Martin, & Johnson, 2008). Cameto (2003) noted that even though career and technical education was identified as an evidence-based practice in the first National Longitudinal Study on Transition (NLTS), the availability of career and technical education actually declined 15% between 1987 and 1998 when the second NLTS study (NLTS2) was initiated. In addition, Turnbull, Turnbull, Wehmeyer, and Park (2003) observed that many schools continued to track students with more significant disabilities into programs that were unlikely to result in meaningful postschool employment or quality of life.

A number of policy researchers have argued that transition mandates alone will not necessarily change long-entrenched practices of “tracking” students into programs based on disability, gender, ethnicity, or the availability of services at a particular school setting (Stodden & Leake, 1994). Gray (2001) noted that secondary educators have traditionally sorted students into three courses of study—career and technical education, college preparatory, and applied academics and life skills. He found that career and technical education was the focus of secondary education for about 25% of the secondary school population. These students received training in career and technical centers or in comprehensive high schools. The conceptual model underlying these programs was described by Cobb and Neubert (1992). In their career and technical education model, the middle school years were focused on developing employability skills and awareness of the range of vocational options and the secondary school years were focused on occupational preparation and work experiences. These experiences then served as the basis for the student’s selection of postschool options and determined the need for ongoing support (Cobb & Neubert).

Gray (2001) found that life-skills curricula were traditionally provided to between one and five percent of high school students. This
type of curriculum emphasized a comprehensive, life-span approach and was originally developed for prospective homemakers and students who were not going into employment after graduation (Edgar & Polloway, 1994; Hanley-Maxwell & Collet-Klingenberg, 1994). In the 1970s and 1980s, this curriculum became increasingly used for students with disabilities (prior to the EHA of 1975). Life skills curricula were often provided as foundational courses at career and technical education centers or in self-contained special education classrooms, and occasionally as elective courses in regular high schools. These types of programs typically included functional job-related skills, daily-living skills, and social skills (Edgar & Polloway; Hanley-Maxwell & Collet-Klingenberg).

The predominate curriculum provided by high schools can be described as an academic or college preparatory curriculum. Approximately 70% of all students participated primarily in this type of secondary education (Gray, 2001). Different and challenging levels of rigor in this curriculum were first recommended by the National Commission on Excellence in Education (1983) who identified the characteristics of basic, mid-level, and advanced academic training as including:

- **Core curriculum or below**: 4 years of English, 3 years of mathematics, 3 years of science, and 3 years of social studies.

- **Mid-level curriculum**: exceeds core curriculum by the addition of at least 1 year of a foreign language; also, two of the mathematics courses must have included algebra I and geometry, and the science courses must have included two of the following: biology, chemistry, or physics.

- **Rigorous curriculum**: at least 4 years of English, 3 years of a foreign language, 3 years of mathematics (including pre-calculus or higher), 3 years of science (including biology, chemistry, and physics), 3 years of social studies, and at least 1 honors or advanced placement (AP) course or, if missing, an AP test score.

These curricula are relevant to transition planning, and the IDEA of 2004 requires identification of the transition services (including courses of study) needed to assist the child in reaching [their postschool] goals (§ 300.320(b) (2)). Kohler (1998) argued that this course of study should be based on students’ postsecondary goals rather than on the widespread practice of screening students and tracking them into certain programs. She called this approach a “transition perspective of education.” However, she found that five interrelated factors determined whether a student was likely to receive this type of secondary education: (a) transition planning, (b) student development, (c) family involvement, (d) program structures and attributes, and (e) interagency coordination (Kohler).

In spite of this policy research over the past twenty years, studies showed that students’ gender, ethnicity, disability, and school settings continued to bias the provision of secondary education curricula, as well as transition services. Gender was found to bias transition planning in a number of ways. National studies indicated that although females were narrowing the gender gap in enrollment in career and technical education, they continued to be concentrated in lower paying fields traditionally associated with females (Wonacut, 2002). Other studies showed that the reasons for entry into special education were significantly different for male and female students (Oswald, Coutinho, & Best, 2002; Wehmeyer & Schwartz, 2001a), as were occupational aspirations (Rojewski & Yang, 1997), and the availability of vocational and transition services (Wehmeyer & Schwartz, 2001b). A number of studies showed significant differences between the postschool engagement rates of young men and women with disabilities (Benz, Doren, & Yovanoff, 1998; Doren & Benz, 2001; Fulton & Sabornie, 1994; Lindstrom, Benz, & Doren, 2004).

Research indicated that ethnicity was a second factor that may play a significant role in the types of special education and transition services received. Reid and Knight (2006) found that African-American students were overrepresented in secondary special education programs and were often underrepresented in advanced placement courses. Losen and Orfield (2002) noted that minority students labeled as learning disabled (LD), mentally retarded (MR), and emotionally disturbed (ED) were more likely to be served in non-mainstream classrooms than were their...
white peers with disabilities. Fierros and Conroy (2002) described ethnic differences in special education and placement as "double jeopardy" for minorities who were more likely to be placed in special education and more likely to be placed in restrictive environments within special education.

Disability was a third factor found to influence the type of secondary programs and transition services received by students with disabilities. The authors of Second National Longitudinal Study (NLTS2) found that the percentage of similar performing students with disabilities who were in mainstream classes varied by disability category (Wagner, Newman, Cameto, Levine, & Marder, 2003). Youth with hearing impairments were the least likely to be in below grade-level classes, while students with mental retardation, traumatic brain injuries, or multiple disabilities were more than twice as likely to be in such classes. Additionally, the NLTS2 found very small percentages of students with disabilities were in advanced placement or honors classes (Wagner et al.), and Monroe (2007) reported that schools often refused to allow qualified students with disabilities to enroll in advanced classes, without giving up services designed to meet their needs under the Individuals with Disabilities Education Act.

School setting was a fourth factor found to influence the availability and allocation of transition services and secondary education opportunities for students with disabilities. Collins et al. (2005) found significant differences in the availability of mainstream education for students with disabilities across school settings. They found that the average time spent for urban secondary students in regular education classrooms was 41%, compared to 56% for suburban students, and 59% for rural students. Their research found that fewer rural schools (42 percent) than urban schools (64 percent) or suburban schools (61 percent) had vocational education classes designed for students with disabilities. Rural schools reported fewer hours, on average, spent in community-based vocational education experiences compared to urban and suburban schools and a greater percentage of students with disabilities in regular classroom placements than non-rural districts (Collins et al.).

Despite the intent of the IDEA of 2004 and efforts to alleviate disproportionality in special education and secondary programs, disproportionate allocation of secondary curricula and transition services remain a concern (Wagner et al., 2003). The failure to infuse educational reforms into the core curriculum has been a long-standing problem. Stodden and Leake (1994) noted that the transition mandate was never integrated into the core of educational curriculum and had little impact on how the curriculum was delivered. Skirtic (1986) noted that school systems are resistant to reforms and individualized approaches to education. Advocates have argued that the efforts to align transition with the mainstream curriculum have actually had the unintended effect of eliminating transition services altogether in some special education programs (Turnbull et al., 2003).

The continued practice of tracking students with little concern for postschool preparation has led some researchers to call for all schools to commit to providing key "transition bridges" (Rusch et al., 2009). These bridges include: (a) preparing students to direct their academic and functional training from middle school onward, (b) school personnel supporting students’ postschool goals, and (c) coordinating services and supports that are essential to ensuring placement success (Rusch et al.). Greene (2003) defined the appropriateness of secondary programs and transition services according to how likely they were to promote the desired outcomes. He identified four general career paths which can be paraphrased as: (a) fully integrated academics and career and technical education for four-year college preparation, (b) semi-integrated academics or career and technical education for two year college preparation, (c) semi-integrated academics and career and technical education for employment and independent living preparation, and (d) semi-integrated academics and community-based learning for supported living and supported employment preparation.

Baer, Flexer, and Dennis (2007) researched this theoretical model by looking at the self-stated goals and career paths of more than 800 special education students using a two-step cluster analysis. Seven clusters emerged from this analysis. Five of the seven clusters
showed a high degree of alignment with the Greene model. However, two of the seven clusters contained students whose postschool goals were poorly aligned with their secondary programs and transition services. One group consisted of students with intellectual disabilities who planned to enter college, but who had not participated in any college preparatory activities. A second group consisted of students with learning disabilities who planned to enter employment after graduation, but who had no career and technical education or work experiences (Baer et al.).

While a number of studies have looked at disproportionality, there has been little or no information about how disproportionality affects transition services. This is an important topic because poor alignment between transition services and postschool goals can result in dramatic negative lifetime impact on students with disabilities. This is particularly true for students with intellectual and developmental disabilities whose needs tend to overwhelm the resources of families and adult service providers after graduation from high school (Wagner et al., 2003).

In determining disproportionality, two major approaches have been used. The first approach has been to measure a group’s representation in special education compared to a benchmark group such as white students or male students (Skiba et al., 2008). This yields a “relative risk” ratio compared to the benchmark group. This approach works well when comparing discrete groups, but it does not provide a good picture of how secondary curricula and transition services were allocated across many groups of students. For this type of study, the “composition index” is preferable because it identifies the proportion that a group represents in the population to the proportion of that group receiving an educational service (Skiba et al.). This yields information about the total allocation of services across multiple groups and this can be used to identify significantly higher or lower utilization of services by a given group of persons.

The purpose of this study was to use a compositional index statistical approach to provide a multidimensional picture of transition services and secondary education for a population of students with disabilities who were studied over a three-year period in a large northeastern state. The research questions that governed this study were:

1. Were there significant differences in postschool goals, secondary curricula, and academic achievement for students from differing gender, ethnicity, disability, and school settings as compared the population as a whole?
2. Were there significant differences in transition services that were received and considered helpful for students from differing gender, ethnicity, disability, and school settings as compared to the population as a whole?

Method

Participants

Participants for this study were selected from the population of students who graduated or aged out of special education in the school years ending May, 2005, 2006, 2007, and 2008 in a large northeastern state. The sample included students from one-half of the local education agencies (LEAs) in the state which were chosen based on a random sample of schools that were stratified by size and type. To accomplish this, the LEAs were partitioned into quartiles (the 25th, 50th, and 75th percentiles) based on the enrollment of children and youth with IEPs. This resulted in the identification of four groups of schools. These were:

- **Quartile 1** = the number of children and youth with an IEP being served by the LEA ranges from 1 to 145 (0–25%)
- **Quartile 2** = the number of children and youth with an IEP being served by the LEA ranges from 146 to 239 (26–50%)
- **Quartile 3** = the number of children and youth with an IEP being served by the LEA ranges from 240 to 426 (51–75%)
- **Quartile 4** = the number of children and youth with an IEP being served by the LEA ranges from 427 to 7,642 (76–100%)

LEAs were selected by a “roster” method where LEAs were listed in rank order for each enrollment level (i.e., Q1, Q2, Q3, and Q4). The selection process began at the point that approximately marked the median point with regard to school enrollment of children and youth with disabilities. Once the starting point
was determined, every sixth LEA was selected or about 90 LEAs per quartile.

The resulting sample was drawn from 299 LEAs and consisted of 4,572 students with disabilities who graduated or aged out of secondary school with an IEP in the school years ending in 2005, 2006, 2007, and 2008. The resulting sample represented approximately eight percent of the total population of special education students who graduated or aged out of special education in those years. Because students were interviewed by teachers, often as part of the student’s exit interview, the response rate exceeded 95% of the special education students in the schools selected. Table 1 shows how the sample compared to students who graduated or aged out of special education in 2003. The sample showed a high degree of alignment with the 2003 population with some overrepresentation of African-American students and students with mental retardation (U.S. Department of Education, 2007).

**Instrument**

The survey used in this study consisted of two parts—a student record review and a student/family interview. The survey questions used in this study were derived from surveys developed for the National Longitudinal Study for Transition that were field tested and cross-checked for reliability by special educators (Baer et al., 2003; Wagner & Blackorby, 1996). During piloting, the teachers administering the surveys evaluated the survey process and each question in the survey for clarity, content, and reliability. Survey questions were discarded or revised if the surveyors found they were hard for students to understand, lacked consistent interpretation, or elicited unreliable information based on what the surveyors knew about their students. Additionally, some interview questions were cross-checked with student records to identify whether student responses were congruent with information known about the student. Items with less than 95% agreement were discarded. After refining

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**TABLE 1**

Comparison of Participants in Study to Students Graduating in the State in 2003

<table>
<thead>
<tr>
<th>Demographic Characteristics</th>
<th>Study Sample %</th>
<th>State Grads 2003 %</th>
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<tr>
<td>Total</td>
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<tr>
<td>Female</td>
<td>1711</td>
<td>*</td>
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<tr>
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<td>167</td>
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<tr>
<td>Learning Disabilities</td>
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<td>6560</td>
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<tr>
<td>Mental Retardation</td>
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<td>3168</td>
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<tr>
<td>Other Health Impaired</td>
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<td>701</td>
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<tr>
<td>Emotional Disability</td>
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<td>718</td>
</tr>
<tr>
<td>Hearing Impairments</td>
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<td>169</td>
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<tr>
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<td>557</td>
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<tr>
<td>Visual Impairment</td>
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<td>64</td>
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<tr>
<td>Autism</td>
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<td>81</td>
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<tr>
<td>Orthopedic Impairment</td>
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<td>125</td>
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<td>Traumatic Brain Injury</td>
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<td>76</td>
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<tr>
<td>Speech and Language</td>
<td>27</td>
<td>125</td>
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<tr>
<td>Deaf-Blindness</td>
<td>1</td>
<td>1</td>
</tr>
</tbody>
</table>

* These data were not available from the 27th Annual Report to Congress
and editing the survey questions, the questionnaire was formatted in a bubble format for easier coding.

**Variables**

The independent variables used to measure *disproportionality* in this study (i.e., gender, ethnicity, disability, and school setting) have been identified in the literature as highly related to one or more aspect of secondary education for students with disabilities (Wagner et al., 2003). These variables are described as follows:

1. **Gender**—was recorded by teachers who conducted the survey
2. **Ethnicity**—was derived from school records as required under the IDEA
3. **Disability**—was derived from school records as required under the IDEA
4. **School setting**—was determined by the teachers who conducted the survey who were asked to determine whether the school that the student attended fell into one of four categories: (a) large city of more than 50,000, (b) small city or town of 50,000 or less, (c) rural schools where the majority of students live outside cities or towns, and (d) suburban schools in cities or towns making up a metropolitan area.

The dependent variables to measure *curriculum and related outcomes* were chosen from factors that have been found critical to a transition perspective of education (Baer et al., 2007; Greene, 2003; Wagner et al., 2003). They are described as follows:

1. **Full-time work goal**—was defined as students who planned to work 35 hours or more in competitive employment after graduation.
2. **College goal**—was defined as students who planned to enter two or four-year colleges after graduation.
3. **Mainstream education**—was defined as the proportion of students who spent less than 21% of the time in special education classes according to school records.
4. **Student proficiency**—was defined according to the number of high school graduation tests that students passed out of five total tests.
5. **Career and technical education**—was represented by the number of semesters of career and technical education taken by the students.

The dependent variables used as a measure of *transition services* received by students were chosen from variables that have been identified as best practice or evidence-based practices in promoting either college or employment after graduation (Greene, 2003; Kohler, 1998; Wagner et al., 2003). These included work experiences, volunteer experiences, preparation for college exams, help applying for college, and involvement of vocational rehabilitation services before graduation. Because the quality of these transition services varied considerably across the respondent LEAs, only transition services that were deemed helpful by students were counted. These transition services were defined as:

1. **School supervised paid work**—was defined according to whether students reported helpful school supervised work experiences in high school.
2. **School supervised community experience**—was defined according to whether students reported helpful supervised community experiences in high school.
3. **Preparation for college entrance exams**—was defined according to whether students reported helpful preparation for the ACT and/or SAT.
4. **Help applying for college**—was defined according to whether students reported helpful services in applying to two and four-year postsecondary education programs.
5. **Vocational rehabilitation**—was defined according to whether students reported helpful services from vocational rehabilitation counselors prior to graduation.

**Procedure**

Students with disabilities were surveyed in the spring of their final year in school. Surveys were conducted by the students’ special education teachers in person, generally as part of
the students’ special education exit (or summary of performance) meeting. In most cases, students provided all of the information on their own, but for approximately six percent of students this information was provided by parents or other informants. Prior to the interview, teachers conducted a record review to obtain information about student disability designations and the secondary education programs in which they were involved. Teachers were trained in two half-day sessions on how to administer the surveys and code student responses. Teachers were instructed to read and to paraphrase questions to make them more understandable to the students as needed.

Analysis

A single sample t-test was used to test the null hypothesis that there would be no significant difference in secondary curricula and transition services for groups of students from differing school settings and differing gender, ethnic, and disability groupings. The single sample t-test allowed the researchers to determine whether the mean value of a group differed significantly from the mean value of the population of students with disabilities as a whole. The population in this study was defined as the entire sample because it came from a probability sample and represented students who graduated or aged out of special education from nearly half of the high schools in the state (Huck, 2000; Norusis, 2003). There are two popular methods that can be used to analyze the data from a one-sample study, the t-test and the z-test. The researchers chose the t-test which is a valid approach for sample sizes larger than thirty (Huck, Norusis). The single sample t-test can be used to reject the null hypothesis when the mean value of groups within the sample differs significantly from the mean value of the population (which in this case is the entire sample). Due to the number of t-tests used in this analysis the significance levels reported in this analysis were \( p < .01 \). The authors chose to use percentages rather than correlational coefficients to provide a more descriptive presentation of the data.

Results

Table 1 shows how the study sample compared to the population of students with disabilities who exited special education by graduation or aging out in the state in 2003 (U.S. Department of Education, 2009). African-American students were the largest minority group and were a higher proportion of the population in this study than reported to Congress for 2003. Additionally, students with intellectual disabilities were a higher proportion of this study than reported to Congress for 2003. The overrepresentation of these subgroups affected the overall population means used in the statistical analysis only slightly and did not affect the means for subgroups. For this reason, and due to the large number of schools that were randomly sampled, the authors decided to use a raw versus a weighted sample for the statistical analysis that follows.

Table 2 shows how postschool goals, secondary curricula, and in-school outcomes differed according to gender. Significant differences were found for male and female students in regard to work goals, college goals, academic performance, and semesters of career and technical education. A significantly higher proportion of males with disabilities reported full-time work goals (50%) than the population as a whole (45%), while a significantly lower proportion reported college goals (59%) than the population as a whole (63%). A significantly lower average number of graduation tests were passed by females (2.45) than the population as a whole (2.64), and significantly fewer average semesters of career and technical education were reported by females (2.22) than the population as a whole (2.40).

Table 2 shows that significant differences were found in postschool goals, secondary curricula, and in-school outcomes for minority students. Only 38% of African-American students reported full-time work goals compared to 45% of the population as a whole. Conversely, 72% of African-American students reported the goal of attending two or four-year colleges compared to 63% of population as a whole. However, African-American students showed a significantly lower proportion of involvement in mainstream curricula (56%) than the population as a whole (75%), num-
A significantly lower proportion of Hispanic students showed involvement in mainstream academics (51%) than the population as a whole (75%) and average number of graduation tests passed (1.74) than the population as a whole (2.64).

Table 2 shows that postschool goals, secondary curricula, and in-school outcomes were significantly related to the disability grouping of students. A significantly higher proportion of students with learning disabilities (70%) and with other health impairments (78%) reported college goals than the population as a whole. A higher proportion of both of these groups participated in mainstream classes and passed their graduation tests than the population as a whole. A significantly higher proportion of students with intellectual disabilities reported work goals (54%) than the population as a whole, but a significantly lower proportion were reported to be in mainstream classes (41%) than the population as a whole. A significantly lower proportion of students with emotional disabilities (61%) were reported to have participated in mainstream classes and this group had, on average, significantly fewer semesters of career and technical education (1.82) than the population as a whole. A very small proportion of students with multiple disabilities reported college goals (8%) or participated in mainstream classes (11%). These students also passed, on average fewer graduation tests (.31) and had fewer average semesters of career and technical education (1.91) than the population as a whole.

School settings were also significantly related to the postschool goals, secondary curricula, and in-school outcomes for students with disabilities. A significantly higher proportion of students from large city (urban) schools reported college goals (67%) but a significantly
lower proportion participated in mainstream classes (56%) than the population as a whole. A significantly lower average number of graduation tests were passed by urban students (1.66) than the population as a whole. A higher proportion of students from suburban schools reported college goals (70%) and participated in mainstream classes (80%) than the population as a whole. These students also passed on average 3.04 graduation tests, which was significantly higher than the population as a whole. A significantly lower proportion of students from rural areas reported college goals (55%) and a significantly higher proportion participated in mainstream classes (82%) than the population as a whole. A significantly lower proportion of students with learning disabilities reported helpful supervised paid work (24%) than the population as a whole. A significantly lower proportion also reported helpful community experiences (27%), preparation for college (36%), and involvement in vocational rehabilitation (12%). A significantly higher proportion of students with learning disabilities reported help in preparation for the ACT/SAT (25%) and in applying to college (39%). Students with other health impairments also reported significantly less help

Table 3 shows that transition services received by students were also significantly related to their gender, ethnicity, disability, and school setting. A significantly higher proportion of females reported helpful school supervised community experiences (38%) than the population as a whole (32%) and help applying to college (39%) than the population as a whole. A significantly higher proportion of African-American students reported helpful community experiences (38%), preparation for the ACT/SAT (27%), assistance in applying for college (44%), and involvement of vocational rehabilitation (23%) than the population as a whole.

Table 3 shows that a significantly lower proportion of students with learning disabilities reported helpful supervised paid work (24%) than the population as a whole. A significantly lower proportion also reported helpful community experiences (27%), and vocational rehabilitation services (12%). A significantly higher proportion of students with learning disabilities reported help in preparation for the ACT/SAT (25%) and in applying to college (39%). Students with other health impairments also reported significantly less help.

### TABLE 3

Transition Services for Students with Different Characteristics and School Settings

<table>
<thead>
<tr>
<th>Group</th>
<th>n</th>
<th>Supervised Paid Work %</th>
<th>Supervised Community Experience %</th>
<th>Preparation ACT/SAT %</th>
<th>Help Applying College %</th>
<th>VR Help %</th>
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<td>32</td>
<td>22</td>
<td>34</td>
<td>18</td>
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<td>28*</td>
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<td>31*</td>
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<tr>
<td>Female</td>
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<td>38*</td>
<td>24</td>
<td>39*</td>
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<td>3. Disability</td>
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<td>12*</td>
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<tr>
<td>Large city</td>
<td>814</td>
<td>33*</td>
<td>40*</td>
<td>24</td>
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</tr>
<tr>
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<td>1082</td>
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<td>28*</td>
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<td>1078</td>
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<td>29</td>
<td>17*</td>
<td>30</td>
<td>15</td>
</tr>
</tbody>
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* = p < .01
in the form of community experiences (24%) and significantly more help in applying for the ACT/SAT (29%) than the population as a whole. A significantly higher proportion of students with multiple disabilities reported helpful school supervised work experiences (37%) and school supervised community experiences (65%) than the population as a whole.

School settings were also correlated with the types of transition services reported by students. A significantly higher proportion of students from large cities (urban) reported helpful supervised paid work experiences (33%), supervised community experiences (40%), assistance in applying to college (41%), and vocational rehabilitation services (26%) than the population as a whole. A significantly lower proportion of students from rural areas reported helpful preparation for college entrance exams (17%), while a significantly lower proportion of students from suburban areas reported helpful supervised community experiences (28%) than the population as a whole.

Discussion

This study largely supported the findings of earlier research on academic preparation and gender, ethnicity, disability, and school settings. In this study, as in previous research, females were less occupationally oriented than males—taking fewer career and technical courses and being more oriented toward college (Oswald et al., 2002; Rojewski & Yang, 1997; Wehmeyer & Schwartz, 2001a; Wonacott, 2002). A significantly higher proportion of males with disabilities in this sample reported full-time work goals and concentrated in career and technical education. A significantly higher proportion of females reported postsecondary education goals and receiving helpful transition services related to postsecondary education—despite their overall lower academic achievement than males. These findings may be a reflection of gender issues for students as a whole (Wonacott).

This study supported the findings of earlier research on ethnicity that found that African-American students with disabilities were less likely to be served in mainstream classes (Fierros & Conroy, 2002; Reid & Knight, 2006). In this study, a significantly higher proportion of African-American students reported two and four-year college goals, yet they were much less likely to be in mainstream classes and passed significantly fewer graduation tests on average than the population as a whole. These students also reported taking significantly fewer semesters of career and technical education than the population as a whole. These findings are suggestive of a serious lack of alignment between postschool goals and secondary curricula for this group. Further research is needed to determine how these students came to choose college and why they were not able to get into mainstream classes.

As with previous research (Wagner et al., 2003), a student’s disability grouping was highly related to postschool goals, secondary curricula, academic performance, and transition services. In this study, a significantly higher proportion of students with intellectual disabilities planned to go to college than were in mainstream classes and they received significantly fewer helpful transition services related to college. Lack of preparation for postsecondary education was reflected by poor academic outcomes for this group and may be indicative of a lag between curricular decisions being made by LEAs and a growing demand for postsecondary options for students with intellectual disabilities (Neubert, Moon, & Grigal, 2004). This demand is just beginning to be addressed by programs that use college campuses as transition settings for students with intellectual disabilities (Neubert et al.).

As with national research, a significantly higher proportion of students with multiple disabilities reported transition services focusing on their work goals, but a significantly lower proportion of this group received meaningful career and technical education (Baer et al., 2007; Wagner et al., 2003). This may be a result of the fact that home school LEAs have only begun serving these students in regular schools in the past decade. According to the Second National Longitudinal Study of Transition, the number of students with low-incidence disabilities in home-school settings increased 29% in the past decade, coming mainly from separate special education schools which saw a 31% drop in enrollment (Wagner, Newman,
Cameto, & Levine, 2005). Typically, local education agencies have responded to this influx of students with multiple disabilities by creating self-contained classrooms and transition programs (Wagner et al.).

Students with emotional disabilities had similar issues in accessing mainstream academic programs and transition services as students with intellectual disabilities. These students were far less likely to be in mainstream academic classes and to have college goals than students with learning disabilities, but scored nearly equal to students with learning disabilities on their graduation tests. Students with emotional disabilities also reported lower levels of helpful preparation for ACT/SAT and in applying for college (though these results were not significant at a .01 level due to the smaller sample for this group).

As a group, students with learning disabilities and other health impairments showed a higher degree of alignment between their postschool goals, secondary curricula, academic performance, and transition services. Students with learning disabilities as a group were also more involved in career and technical education. This finding may reflect the fact that students with learning disabilities constitute more than half of students with disabilities and are therefore more likely to have services than students with lower-incidence needs.

This study also supported previous research on the impact of school settings on the placement of students in mainstream classes (Collins et al., 2005). As with this study, urban students with disabilities were proportionally less likely to be in mainstream classes. However, unlike the Collins et al. study, this study showed no significant differences in career and technical education for rural students. This study also showed that school setting was significantly related to college goals, secondary curricula, and academic performance. As a group, students from urban and suburban school were more focused on college outcomes than their rural and small-city counterparts. Additionally, rural students were significantly more likely to plan to enter full-time employment after graduation. Urban schools appeared to have the greatest number of students whose postschool goals were poorly aligned with secondary curricula.

**Limitations**

It should be noted that the population for this study did not include dropouts and cannot be generalized to that population. It should also be emphasized that the purpose of this study was to describe the allocation of secondary programs and transition services for the purpose of providing an overview of secondary education programs for students with disabilities. Because this study was descriptive, it did not employ a multiple analysis of covariance such as a MANCOVA or multiple-regression analysis, and it used percentages to describe effect sizes rather than effect size statistics such as Cohen’s D. These decisions were made because the use of these statistics would have considerably lengthened and increased the complexity of this article.

**Implications for Practice**

1. **Disproportionality of services for students with postsecondary education goals.** Poor alignment of courses of study and postsecondary goals was evident for a significantly higher proportion of urban students. Urban students present unique challenges that make planning related to courses of study difficult at the middle school level. These students tend to move from school to school due to changes of residence and due to frequent reassignment by the school districts themselves (Wagner et al., 2003). This makes assignment of secondary courses of study problematic for middle school guidance counselors and IEP coordinators who often do not know which high school a student will be attending. Poor alignment between postschool goals and academic curricula suggests the need for coordinated IEP and transition planning between middle and high schools to ensure that students who plan to enter postsecondary education are assured the opportunity to attend the appropriate courses of study at any high school they enter. Unfortunately, the IDEA of 2004 removed the requirement that the course of study be considered at the middle school level.

For rural students, this study pointed to a different kind of issue in aligning secondary courses of study and postsecondary goals. A significantly lower proportion of rural students reported postsecondary education
goals, despite the highest level of participation in mainstream classes. This suggested the need to make these students more aware of postsecondary education options at the middle school level. Additionally, transition planning for these students will need to consider issues unique to this population related to attending postsecondary education. These include preparation for college entrance exams, exposure to postsecondary education options, help applying for college, and financial aid.

2. Disproportionality of services for students with full-time employment goals. In this study, alignment of full-time work goals with curricula was evident for a higher proportion of males than for females. Research indicates that males are more likely to focus on career and technical education in the higher paying fields and this study showed that females were taking a significantly fewer numbers of semesters of career and technical education than males. As with their typical counterparts, females in this study were significantly more likely to plan to enter postsecondary education, but unlike their typical female counterparts, their participation in mainstream classes and passage of high school graduation tests was significantly lower. This may indicate the need for middle school guidance counseling and transition planning that exposes females with disabilities to high paying career and technical education opportunities.

For students with multiple disabilities, the alignment of work goals and secondary education was particularly problematic. While a large majority of these students planned on employment after graduation, they had the lowest average semesters of career and technical education of any of the disability groupings looked at in this study. While some of this shortfall was compensated by supervised work experiences for this group, this problem is likely to worsen as schools continue to cut back staffing of community work programs and as career and technical education moves toward tech-prep. Lack of appropriate secondary curricula for students with multiple disabilities suggests the need for home schools and career and technical education programs to develop agreements on how career and technical education can be made more accessible to these students. This may require high schools to develop some career and technical education programs in-house to serve these students. It also points to the need to provide students with multiple disabilities with flexible points of entry and exit in career and technical programs. Students with multiple disabilities may not be able to attain certification in a given career and technical program, but they may be able to learn important skills that would make them marketable as assistants to electricians, plumbers, etc. As Gray (2001) noted, for each certified technician, as many as seven assistants will be employed.

Students with emotional disabilities were another group that had poor alignment between their work goals and secondary education. A significantly lower proportion of these students were included in mainstream classes or in career and technical education, despite an above average number of graduation tests passed. As with students with multiple disabilities, this may be related to poor articulation between home schools and career and technical education programs. It may also point to the need for intensive professional development for mainstream teachers and career and technical educators on how to engage these students in courses of study that are likely to result in better postschool outcomes. It should be noted that this lack of alignment may be even worse than appears in this study, because the sample only included students with emotional disabilities who completed or aged out of high school.

Conclusions

This study indicates that there is a need for a renewal of the mandate for early transition planning related to students’ courses of study and for targeted training of middle school guidance counselors and IEP coordinators. Transition planning should address courses of study in IEPs that take effect when the student is age fourteen, or earlier; otherwise, students with disabilities may simply be irrevocably tracked into secondary curricula that are unrelated to their postschool goals. Students with more significant disabilities with postsecondary education goals should be allowed to experience challenging curricula at an earlier age. This would provide more opportunity for them to come to terms with the demands of
regular education settings and/or to revise their postschool goals as needed.

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