Differences in Outcomes for Female and Male Students in Special Education

Interest in differences in outcomes for male and female students in special education has increased in recent years. Using the nationally representative, longitudinal National Education Longitudinal Study of 1988 (NELS-88) data set, a logistic regression model was used to examine the extent to which outcome variables were differentially associated with gender for students participating in special education. Evidence was obtained for several differential effects, with most results favoring males. Among other findings, females as compared to males with disabilities were less likely to obtain a high school diploma, were less likely to be employed, earned less, and were more likely to be a biological parent. Recommendations are provided for improved transition services, the implementation of promising practices related to self-determination, and renewed emphasis on comprehensive and flexible life–career preparation to foster better outcomes among females with disabilities.

Policy reform initiatives, such as the No Child Left Behind (NCLB) Act of 2001 and the President’s Commission on Excellence in Special Education (2002), stress satisfactory outcomes for all youth, including those who have traditionally been underserved and those who do not readily achieve adult milestones of independence and productivity. Despite increasing evidence that all students have access to comparable experiences and services during school, studies have reported that girls who received special education have less favorable outcomes compared to their male counterparts (Benz, Doren, & Yovanoff, 1998; Doren & Benz, 2001; Fulton & Saborne, 1994; Hasazi, Gordon, & Roe, 1985; Lindstrom, Benz, & Doren, 2004; Oswald, Coutinho, Best, & Nagle, 2002; Sitlington & Frank, 1985; Wagner, Cameto, & Newman, 2003). These studies have documented lower earnings and restricted occupational options for women with disabilities.

Educators need information about school completion rates, postsecondary aspirations, employment, and other longer-term outcomes to respond to the accountability mandate of NCLB, improve secondary school curricula, and implement more effective transition activities. Accessible, nationally representative information is limited because the U.S. Department of Education (DOE) collects information by disability, age, and race/ethnicity, but not by gender. For example, the DOE’s child count data indicate that the high school graduation rate for students with disabilities increased from 52.6% in 1995–1996 to 56.2% in 1999–2000, but the data do not indicate whether this increase was the same for both boys and girls (U.S. Department of Education, 2002).

Educators also need information about the outcomes of youth with disabilities as compared to those who are typically achieving, at risk, or gifted. The reporting provided by school systems offers results of standardized testing broken down by these various student groups but, again, does not include gender. Educators have little information about the differences between boys and girls with regard to employment, postsecondary education and aspirations, postschool demographic outcomes, and community engagement. Women make up an increasing share of the workforce, but important gender differences persist, including lower earnings and more restricted occupational choices (Stephenson & Burge, 1997; U.S. Department of Labor, 2004).
The purpose of the present study was to determine the extent to which there were gender-based differences in socially significant outcomes for special education students and whether similar differences were observed in other groups of students (e.g., typically achieving, at risk, gifted). Evidence of gender differences in outcomes signals the need to improve education and transition planning and services at the secondary level.

**METHOD**

**Sample**

We analyzed data collected in 1994, which are the most recent data that allow direct comparisons of students with and without disabilities. Students in the sample were receiving services during high school after requirements for transition services were strengthened by the Individuals with Disabilities Education Act (IDEA) of 1990.

The National Education Longitudinal Study (NELS) program was instituted by the National Center for Education Statistics (NCES) with the aim of studying “the educational, vocational, and personal development of students at various grade levels, and the personal, familial, social, institutional, and cultural factors that may affect that development” (NCES, 1994, p. 2). The program began with a 12th-grade cohort in the National Longitudinal Study of the high school class of 1972 and was continued in the 1980s with a study of high school and beyond, which included a cohort of 10th- and 12th-graders. NELS-88, the data set analyzed in this study, involved a sample of students who were in the eighth grade in 1988. The study included follow-ups in 1990, 1992, and 1994. The focus of the present study was on the transition into postschool functioning; as a result, we elected to draw from the 1994 follow-up. Although data from a fourth follow-up, conducted in 2000, were released when the present analyses were in the final stages, consideration of those data would have altered the research questions substantially by addressing longer-term outcomes.

The base year (1988) sample was recruited using a two-stage stratified probability design to create a nationally representative sample of eighth-grade schools and students. The first stage yielded 1,052 participating schools: 815 public schools and 237 private schools. The second sampling stage (student sampling) produced a random selection of 26,432 students from the selected schools, of whom 24,599 participated in the 1988 data collection (NCES, 1994).

Three waves of follow-up data collection occurred at 2-year intervals, so that the final follow-up data were gathered in 1994 when most of the students were 2 years past high school graduation. Data-gathering methods in the base year included written surveys and tests of students, as well as surveys of parents, school administrators, and teachers; follow-up data were collected by means of a student survey. All outcome variables included in the present study were drawn from the 1994 data set.

The NELS sample analyzed in the present study included those students for whom both base year data and 1994 data were present: a total of 13,391 participants with usable data, consisting of 6,526 males and 6,865 females. The race/ethnicity distribution of the sample was as follows: 7.0% Asian/Pacific Islander (AS; n = 939), 10.8% Black (BK; n = 1,452), 13.5% Hispanic (HI; n = 1,813), and 68.6% White (WH; n = 9,187). Native American students were excluded from the analyses as their numbers were low and they made up such a small portion of the total sample (n = 286).

On the basis of the data from the base year, participants in the NELS sample were divided into four status groups: special education (SE), low achieving (LA), typically achieving (TA), and gifted and talented (GT). SE students (n = 1,931) were extracted from the pool first and were defined as those students whose parents answered affirmatively to the question, “Has your eighth grader ever received special services for any or all of the following: visual handicap (not correctable by glasses), hearing problem, deafness, speech problem, orthopedic problem (e.g., club foot, absence of arm or leg, cerebral palsy, amputation, polio), other physical disability, specific learning problem (e.g., dyslexia or other reading, spelling, writing, or math disability), emotional problem, other health problem?” Many students had received more than one type of special service. The SE sample included 832 female students (43.1%) and 1,099 male students (56.9%).

GT students (n = 1,503) were extracted from the sample next and were defined as participants whose parents answered affirmatively to the question, “Is your eighth grader currently enrolled in a gifted or talented program?” Forty-six percent of the GT students were male. Low achieving students were defined as those who, among the remaining students, fell into the lowest quartile of standardized achievement testing scores for either reading or math (n = 3,015); 51% were male. Typical students constituted the remainder of the sample (n = 6,942); 46% were male. U.S. census data for the year
2000 indicated that the general population in the country was 49.1% male (Smith & Spraggins, 2001).

Outcome Variables

Twenty-four variables were selected from the 1994 follow-up data set to represent a range of socially significant outcomes. Selection was based on a conceptual framework that includes individual student, family, and school components, with particular emphasis on variables for which there were indications in the literature of differential effects for male and female students (see Tables 1–6; Lee, Chen, & Smerdon, 1996; Oswald, Coutinho, Best, & Nagle, 2002). Outcome variables were analyzed separately, but for ease of interpretation, they were grouped in the following categories: Employment (Table 1), Postschool Employment Satisfaction (Table 2), Postschool Education and Aspirations (Table 3), Postschool Demographic Outcomes (Table 4), Postschool Attitudes (Table 5), and Community Engagement and Crime Involvement Outcomes (Table 6).

Data Analysis

Some of the outcome variables were continuous (e.g., average hours worked per week), and some were nominal (e.g., voting in local/state selections in the past 12 months); a general linear model or a multinomial logistic regression model, respectively, was used to analyze the data. A two-step process was used to isolate differential gender effects. In the first step, each dependent (outcome) variable was used in a regression model with the following predictors: gender, group (SE, LA, TA, GT), race (White, Black, Asian, Hispanic), and gender-by-group interaction. If the interaction effect was non-significant in this first-step model, the variable was dropped from further consideration. A nonsignificant interaction may be interpreted as supporting the conclusion that gender effects were statistically indistinguishable across the four groups; that is, any gender-related differences in the outcome were similar for special education and other students. If the gender-by-group interaction was significant (using a screening $\alpha = 0.20$), analysis of the outcome variable was continued in the second step.

The second step used an adaptation of a logistic regression model created by the investigators in an earlier stage of the project. The model included 22 school, family, and individual predictors: percentage minority in school, percentage of students in special education, percentage of students in gifted programs, urbanicity, family socioeconomic status (SES), number of risk factors for dropping out of school, how often a parent talks to the child about school, how often a parent helps with homework, whether anyone is home when the child returns home, student grades, standardized test scores, locus of control, self concept, likelihood of post–high school education, higher education plans, retention, disruptiveness, absenteeism, counseling about career, counseling about courses, employment, and hours spent on homework. This model was found to predict whether a student was likely to be in the SE, LA, TA, or GT group (Oswald, Coutinho, & Best, under review). In the present study, the same model was used with the addition of effects for group, race-by-group, and gender-by-group. The purpose of this complex model was to test for gender-by-group differences in outcomes, taking into account a range of individual, family, and community characteristics that are likely to be associated with student outcomes.

A significant gender-by-group interaction ($p < .05$) in the second step suggested that a differential gender effect existed. A differential gender effect indicated that gender was a significantly more influential variable for one group than for other groups. We then tested for a gender effect within the student groups to clarify where the male–female differences were found. In the absence of a significant gender-by-group interaction in the second step, we briefly discuss significant group or gender main effects.

RESULTS

Generally, the study’s results examine gender differences for students in special education, compared to gender differences for all other students. In some cases, the pattern of differences was similar for the SE and LA groups and for the TA and GT groups; in these instances, SE and LA were collapsed into one group and TA and GT collapsed into a second group for ease of description.

Employment

Three employment-related outcomes were considered: job/occupation longest held, proportion of months employed between June 1992 and August 1994, and average hours worked per week (see Table 1). Although the screening analysis revealed a significant gender effect for job/occupation longest held, $\chi^2(5, 13,391) =$
512, \( p < .05 \), there was no evidence of a differential gender effect across the four groups, \( \chi^2(15, 13,391) = 18, p > .05 \). For example, although more women than men were employed in clerical positions, this difference was observed in both special education and nonspecial education groups. Similarly, substantially more men than women were reported to be in skilled or technical positions across all groups.

For the proportion of months employed, the screening analysis indicated a differential gender effect across the four groups, \( F(3, 13,294) = 19, p < .05 \). In the full model, this differential gender effect remained significant (\( p < .05 \)). After the effects of all other factors have been covaried out, among SE and LA students, men were employed during more of the months than were women (95% adjusted CI men = [62.5%–68.2%]; women = [54.8%–60.7%], \( p < .05 \)), but among TA and GT students, men and women were employed the same proportion of months (95% adjusted CI both = [60%–64%], \( p > .05 \)).

The screening analysis also indicated a gender effect for average hours of work per week (\( p < .05 \)) and a differential gender effect across the groups (\( p < .05 \)). In the full model (i.e., after the other factors were covaried out), however, the gender effect remained (\( p < .05 \)), but the analysis showed no evidence for a differential gender effect (\( p > .05 \)). After adjusting for the other covariates, men were employed an average of approximately 33 hours per week (95% adjusted CI = [31.9–33.9]), whereas women were employed an average of 27 hours per week (95% adjusted CI = [26.6–28.6]); these adjusted averages did not vary significantly among the four groups.

### Postschool Employment Satisfaction

Three postschool employment satisfaction outcomes were considered: satisfied with opportunity to use past training or education, employer provided medical benefits, and job satisfaction (see Table 2). In the case of satisfaction with opportunities to use past training and education, there was no evidence for a gender difference (\( p > .05 \)) or for a differential gender effect (\( p > .05 \)). That is, satisfaction ratings are constant across the four student groups (SE male, SE female, non-SE male, non-SE female).

Average job satisfaction differed depending on gender (\( p < .05 \)), but there was no evidence for a differential gender effect across groups (\( p > .05 \)). In all groups, males had higher job satisfaction than females. Similarly, with regard to employer-provided medical benefits, there was evidence for a gender difference (\( p < .05 \)) but no evidence for a differential effect (\( p > .05 \)). Significantly more males (adjusted 95% CI = [48.0–
than females (adjusted 95% CI = [35.0–54.4]) had employer-provided medical benefits across the board.

**Postschool Education and Aspirations**

Five postschool education and aspiration variables were considered: high school diploma/general equivalency diploma (GED) present, ever dropped out, highest postschool education (PSE) level attained, highest level of education expected, and job expected at age 30 (see Table 3). With regard to having a high school diploma or GED, the screening analysis indicated no evidence for a gender effect \((p > .05)\) but a differential gender effect was observed \((p < .05)\). In the full model, a differential gender effect remained after the other factors were covaried out \((p < .05)\). Among typically developing students, there was no difference in the adjusted proportion of men and women who had a high school diploma (93%), whereas in the SE and LA groups, a higher adjusted proportion of men (92.6%) than women (91.7%) had a diploma. These adjusted rates for students in the SE and LA groups are substantially higher than actual rates in the data set; adjusted rates are affected by the distribution of other predictors in the model.

In the case of dropout status, the screening analysis yielded no evidence for a gender effect \((p > .05)\) or a differential gender effect \((p > .05)\). There, however, was a group difference in the dropout rate; 26% of SE students dropped out, whereas 16% of non-SE students dropped out \((p < .05)\).

The analysis did find evidence for a gender effect in the case of PSE level attained \((p < .05)\) but no evidence for a differential gender effect \((p > .05)\). More men than women reported no postschool education (53% of men; 47% of women), and more women than men reported being enrolled in a PSE program (46% of men; 54% of women). Similarly, in the case of highest level of education expected, there was some evidence for a gender effect \((p = .05)\) but not for a differential gender effect \((p > .05)\). The gender effect suggested that somewhat more female students than male students expected to attend college and get a bachelor’s or graduate degree (52% of women; 47% for men) and that there are more men than women who (a) do not expect to finish high school, (b) expect only to earn a high school equivalency degree or a vocational/trade certificate, or (c) attend college but do not earn a degree (54% men; 46% women).

With regard to job expected, the analysis found a gender effect \((p < .05)\) and evidence for a differential gender effect \((p < .05)\). The differential gender effect persisted in the full model \((p < .05)\). In all groups, a higher percentage of women than men expected to be in the following occupations: clerical, professional, and sales and service. In all of the groups except GT, a higher proportion of men expected to be in manager positions,

### Table 2: Postschool Employment Satisfaction

<table>
<thead>
<tr>
<th>Variable name</th>
<th>Variable description</th>
<th>Survey question</th>
<th>Significant effects*</th>
</tr>
</thead>
<tbody>
<tr>
<td>OUSTRAIN</td>
<td>Satisfaction with opportunity to use past training or education</td>
<td>How satisfied were you with the opportunity to use past training and education at your job during the period of January 1993 through December 1993?</td>
<td>None</td>
</tr>
<tr>
<td>F3JOBSAT</td>
<td>Job satisfaction scale</td>
<td>This variable reflects how satisfied the respondents were with their jobs. It draws on seven questions concerning pay and fringe benefits, importance and challenge, working conditions, opportunities for advancement, opportunity to use past training, security, and opportunity to further education.</td>
<td>Gender effect/no interaction SE/LA: M &gt; F TA/GT: M = F</td>
</tr>
<tr>
<td>EMPBMED</td>
<td>Employer provided medical benefits</td>
<td>While working, did your employer make available to you medical, surgical, or hospital insurance that covers injuries or major illness off the job?</td>
<td>Gender effect/no interaction SE/LA: M &gt; F TA/GT: M = F</td>
</tr>
</tbody>
</table>

*Significant effects in the model \((p < .05)\) are listed and direction of effect is stated.
and more men expected to be in skilled technical, owner, and other positions in all groups.

**Postschool Demographic Outcomes**

Postschool demographic outcomes consist of marital status, health problems that limit work, number of biological children, and total earnings from jobs (see Table 4). Marital status showed a gender effect in the screening analysis ($p < .05$), but there was no evidence for a differential gender effect ($p > .05$). For example, 27% of women in the SE group were married (compared to 14% of men in the same group), and 19% of women from the other groups were married (compared to 10% of men from those groups). There was no indication of a gender effect in health problems that limit work ($p > .05$) and no evidence for a differential gender effect ($p > .05$). The analysis, however, did find a significant group effect ($p < .05$): The GT group had the lowest number of students with health problems (1.7%), followed by TA (2%), LA (5%), and SE (6.9%).

There was a clear gender difference in the number of biological children reported ($p < .05$), and the screening analysis also indicated differential gender disproportionality ($p < .05$), which persisted in the full model ($p < .05$). In both the SE and LA groups, men reported very few children; approximately 1 out of 22 men in the SE group reported having a child, and even fewer men in the LA group did so. Among men in the GT and TA groups, only about 1 in 10 reported having a child. In contrast, one fourth of the women in the SE group and almost one third of those in the LA group had a child; among women in the GT and TA groups, approximately one fifth had a child.

With regard to total earnings, the screening analysis indicated evidence for a gender effect ($p < .05$), with weak evidence for a differential gender effect ($p = .19$). In the full model, after adjusting for other factors, the gender effect remained ($p < .05$), and there was evidence...
for a differential gender effect \((p < .05)\). In all groups, men earned more than women, but the magnitude of the difference varied. In the SE and LA groups, the average man earned $8,471 (95% CI = [$7,629–$9,315]), whereas the average woman earned only $5,480 ($4,598–$6,362). Among the TA group, the average man earned $8,115 ($7,582–$8,647), and the average woman earned $6,518 ($6,022–$7,014). In the GT group, men were only marginally more highly compensated \((p < .05)\) than women, with men earning $8,754 ($7,920–$9,588) and the women earning $7,713 ($6,907–$8,520).

**Postschool Attitudes**

Five postschool attitude variables were considered: importance of success in work, importance of having lots of money, importance of strong friendship, importance of being able to find steady work, and values–work orientation scale (see Table 5). With regard to the importance of success in work, the analysis did not show evidence for a gender difference \((p > .05)\) or a differential gender effect \((p > .05)\). The importance of having lots of money showed a gender difference \((p < .05)\) but not a differential gender effect \((p > .05)\). More men than women tended to say that having lots of money was very important (39.9% vs. 31.1%, respectively).

The importance of strong friendship had a clear gender difference \((p < .05)\) and evidence for a differential gender effect \((p < .05)\) in the screening model, confirmed by the full model. The differential gender effect was evident in the SE group: a higher proportion of men considered a strong friendship “very important” (94%) than did women (87%). This is in contrast to the other groups, in which approximately equal proportions of men and women (about 88%) considered strong friendships very important.

The importance of finding steady work showed a gender difference \((p < .05)\) but no evidence for a differential gender effect \((p > .05)\). In all groups, approximately 1% of both genders viewed steady work as “not important” and about 90% viewed it as “very important.” What varies is that 9.9% of men viewed steady work as “somewhat important,” whereas 8.2% of women did.

The values–work orientation scale also showed a gender difference \((p < .05)\) but not a differential gender effect \((p > .05)\). Men scored slightly higher than women on work orientation across groups.

### TABLE 4.
**Postschool Demographic Outcomes**

<table>
<thead>
<tr>
<th>Variable name</th>
<th>Variable description</th>
<th>Survey question</th>
<th>Significant effects&lt;sup&gt;a&lt;/sup&gt;</th>
</tr>
</thead>
<tbody>
<tr>
<td>MARSTAT</td>
<td>Current marital status</td>
<td>Are you currently single, never married; married; divorced or separated; widowed; or not married but living in a marriage-like relationship?</td>
<td>Gender effect/no interaction Married: F &gt; M</td>
</tr>
<tr>
<td>HLTHPROB</td>
<td>Health problems that limit type of work</td>
<td>Are you limited in the kind of job or amount of work you can do because of any impairment or health problem?</td>
<td>Group effect/no interaction SE &gt; LA, TA, GT</td>
</tr>
<tr>
<td>F3NUMCHL</td>
<td>Family; number of biological children</td>
<td>Total number of biological children the sample member has reported.</td>
<td>Group × gender effect SE, LA: F &gt; M TA, GT: F &gt; M</td>
</tr>
<tr>
<td>MNTHEARN</td>
<td>Total earnings Jan 1994 through present</td>
<td>What were your total monthly earnings from your job during the period between January 1994 and today?</td>
<td>Group × gender effect SE, LA: M &gt; F TA, GT: M &gt; F</td>
</tr>
</tbody>
</table>

**Note.** F = female; M = male; SE = special education group; LA = low-achieving; TA = typically achieving group; GT = gifted group. Groups were derived from the National Education Longitudinal Study data (National Center for Education Statistics, 1994).

<sup>a</sup>Significant effects in the model \((p < .05)\) are listed and direction of effect is stated.
**TABLE 5.**
*Postschool Attitudes*

<table>
<thead>
<tr>
<th>Variable name</th>
<th>Variable description</th>
<th>Survey question</th>
<th>Significant effectsa</th>
</tr>
</thead>
<tbody>
<tr>
<td>SUCSLWRK</td>
<td>Importance of success in work</td>
<td>Please tell me how important each is to your life: Being successful in your line of work?</td>
<td>None</td>
</tr>
<tr>
<td>LOTSMONY</td>
<td>Importance of having lots of money</td>
<td>Please tell me how important each is to your life: Having lots of money?</td>
<td>Group effect/no interaction M &gt; F</td>
</tr>
<tr>
<td>STRGFRND</td>
<td>Importance of strong friendship</td>
<td>Please tell me how important each is to your life: Having strong friendships?</td>
<td>Group x gender effect SE: M &gt; F</td>
</tr>
<tr>
<td>STDYWORK</td>
<td>Importance of being able to find steady work</td>
<td>Please tell me how important each is to your life: Being able to find steady work?</td>
<td>Gender effect/no interaction Somewhat important: M &gt; F</td>
</tr>
<tr>
<td>F3WORKO</td>
<td>Values–work orientation scale</td>
<td>This variable expresses in percentiles the importance of work related items in the respondent’s life based on three items from the 1994 questionnaire. These items ask about being successful in work, having lots of money, and being able to find steady work.</td>
<td>Gender effect M &gt; F</td>
</tr>
</tbody>
</table>

Note. F = female; M = male; SE = special education group. Group was derived from the National Education Longitudinal Study data (National Center for Education Statistics, 1994).  
aSignificant effects in the model (p < .05) are listed and direction of effect is stated.

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**TABLE 6.**
*Community Engagement and Crime Involvement Outcomes*

<table>
<thead>
<tr>
<th>Variable name</th>
<th>Variable description</th>
<th>Survey question</th>
<th>Significant effectsb</th>
</tr>
</thead>
<tbody>
<tr>
<td>NATELEC</td>
<td>Voting in local or state elections in the past 12 months</td>
<td>During the past 12 months, have you voted in a local, state, or national election?</td>
<td>Group x gender effect LA: M &gt; F</td>
</tr>
<tr>
<td>ARRESTED</td>
<td>Respondent or close friend arrested</td>
<td>For each item I read, please tell me if that event has happened to you or a family member: You or a close friend were arrested or incarcerated.</td>
<td>Gender effect/no interaction M &gt; F</td>
</tr>
<tr>
<td>CRIME</td>
<td>Respondent or family member victim of crime</td>
<td>For each item I read, please tell me if that event has happened to you or a family member: You or a family member were a victim of a serious crime.</td>
<td>None</td>
</tr>
<tr>
<td>HRSVLNTR</td>
<td>Hours/week respondent did volunteer work</td>
<td>During the past 12 months, how many hours per week did you do volunteer work?</td>
<td>None</td>
</tr>
</tbody>
</table>

Note. F = female; M = male; LA = low-achieving group. Group was derived from the National Education Longitudinal Study data (National Center for Education Statistics, 1994).  
bSignificant effects in the model (p < .05) are listed and direction of effect is stated.
and the full model confirmed a differential gender effect ($p < .05$). The gender difference occurred in the LA group, in which a higher percentage of males voted than did females (33% and 28%, respectively).

The number of volunteer hours worked per week did not differ by gender ($p > .05$), nor was there a differential gender effect ($p > .05$). Overall, students reported volunteering about 6 hours per week.

The proportion of students who had been arrested or had a close friend who had been arrested showed a gender difference ($p < .05$) but not a differential gender effect ($p > .05$). About 30% of male students reported that they or a close friend had been arrested, compared to only about 15% of female students. Crime victimization (“You or a family member were a victim of a serious crime”) did not differ by gender ($p > .05$) nor was there a differential gender effect ($p > .05$).

**DISCUSSION**

The results obtained in this study underscore the importance of collecting and analyzing outcome data by gender. Out of 24 outcome variables, a significant main effect for gender was observed for 12 variables. For most of those variables, the differences favored men; for example, men generally earned more, worked a greater number of hours, and more frequently received job benefits. Men also reported beliefs or aspirations commonly thought of as more favorable, such as satisfaction with their jobs and work orientation. Women were more likely to be married and to report more biological children, but these are not necessarily favorable events for young adults who were approximately 20 years old (Levine & Edgar, 1994). For a few variables, findings for men and women did not differ, such as school dropout rate, health problems, volunteer work, crime victimization, the opportunity to use past training or education, and the importance of success. For two variables, related to postschool education and educational aspirations, the findings favored women: they were more likely to report being enrolled in a postsecondary education program and to report an aspiration to attend college to get a bachelor’s or graduate degree. For one variable, the outcome for women was clearly better: Women were less likely to be arrested. More men than women endorsed “the importance of having lots of money,” but it is unclear whether this was a favorable outcome.

Evidence was obtained for several differential effects by gender for students who had received special education, and these results also favored men. With respect to employment, men who had disabilities or were low achieving were likely to be employed for a greater number of months than their female counterparts. As compared to women, men in the SE and LA groups had significantly higher total earnings. With respect to postschool education and demographic outcomes, men in the SE or LA groups were more likely than their female counterparts to receive a high school diploma and were much less likely to report biological children. With respect to postschool attitudes, men in the SE group rated the importance of strong friendship more highly than women in the SE group did.

Some of the findings in this study are similar to those obtained in the National Longitudinal Transition Study (NLTS), in which investigators conducted a longitudinal study of two nationally representative cohorts of youth in 1987 and 2001 (Wagner et al., 1991, 2003). Wagner et al. (2003) reported increases in paid employment during the past year for both men and women in 2001 as compared to 1987, but the increases for women were larger, eliminating the statistically significant difference observed in 1987. This suggests some outcomes may be improving. Unfortunately, Wagner et al. (2003) also found that both men and women experienced reductions in hours worked, increases in pay, and lower rates of working at a given point in time, suggesting employment in 2001 was more sporadic than in 1987. Overall, men were still more likely than women to be paid at or above the minimum wage. Future research is needed to determine whether the gender gaps in earnings or hourly wages have narrowed over time and whether employment for men and women is becoming more sporadic despite the better pay and benefits observed for the second cohort of the NLTS study. Both the study reported here and the NLTS study (Wagner et al., 2003) found that women are less likely than men to experience negative consequences for certain behaviors, such as being arrested. Further research is needed to investigate trends in the rates at which men and women experienced negative outcomes.

**Limitations**

The data analyzed in the study reported here do not reflect possible changes in transition service delivery over the past several years. The work of Wagner and colleagues (2003), however, suggests that transition-related issues for men and women with disabilities have not changed substantially over approximately the same
Agran, 2004). Methods of curricular modification are available that both support self-determination and fos-

- Improved self-determination skills.

- Acknowledged their unique strengths and interests in doing so.

- Likely to be a biological parent. Also, evidence of another important gender difference exists: Wagner et al. (1991) and Wehmeyer and Schwartz (2001b) have reported that girls identified as eligible for special education under IDEA may be more impaired (e.g., have lower mean IQs) than boys who are identified. These differential gender effects indicate an urgent need for timely, gender-sensitive, expanded career development opportunities and improved self-determination skills.

To respond to the differential gender differences observed in this study, these opportunities and skills must be addressed through the individualized transition planning process (Doren & Benz, 1998, 2001) to prevent important differential outcomes for women (e.g., the lower likelihood of finishing high school, the greater chance of having biological children). Given that occupational aspirations for youth are relatively stable as early as eighth grade (Rojewski & Yang, 1997), individualized transition services, and not simply planning, should begin for girls at the beginning of the secondary school years so that an integrated and intensive plan to address academic and career goals can be implemented.

Expanded career development opportunities should be implemented in line with the recommendations of Lindstrom et al. (2004): Provide early workplace experiences and paid employment to teach basic employability skills and develop the expectation of employment in young women with disabilities. A wider breadth and larger number of occupational and vocational courses—as well as community-based work experiences—are needed, but to be effective, the opportunities must address such gender-related issues as biased teacher expectations, stereotypes that only place young women in jobs traditionally filled by women, and environmental barriers on job sites, such as the need for childcare arrangements (Lindstrom et al., 2004; Stephenson & Burge, 1997; Wehmeyer & Schwartz, 2001a).

For girls with disabilities, increases in self-determination may also influence the decision to remain in school, graduate, and delay having children—areas in which differential gender effects were observed. Therefore, transition services that teach girls self-advocacy and self-determined behavior may help young women with disabilities use the experiences and outcomes of ongoing, gender-appropriate course offerings and work experiences to select and refine actual career goals and to pursue postsecondary education and training options that are based on personal strengths and interests. Interventions focused on self-advocacy also build on one of the few findings obtained in this study that favor women, including those with disabilities: More women than men plan to graduate and aspire to go further in postsec-

ondary school. Evidence exists that self-determination skills act as an “entry point” to and support progress in the general curriculum (Palmer, Wehmeyer, Gipson, & Agran, 2004). Methods of curricular modification are available that both support self-determination and fos-

ter increased access to the general curriculum (Wehmeyer, Field, Doren, Jones, & Mason, 2004). Girls may be particularly receptive to self-determination training related to high school completion and continuing education needs because these are areas in which their initial aspirations, but not subsequent experiences, exceed their male counterparts.

Many of the significant differential effects for gender among students with disabilities were also true for women who were low achieving. These included their earnings, types of jobs held, total months employed, likelihood of receiving a high school diploma, and likelihood of having biological children. These findings have important implications for those seeking to build support for and implement somewhat differentiated transition services for girls with disabilities. Most students with disabilities spend most of the school day in general

Implications for Secondary Education and Transition Practices

The findings obtained in this study point directly to the need for differentiated and improved transition services for women with disabilities. In this nationally representative sample, women with disabilities were less likely than men with disabilities to obtain a high school diploma, worked fewer hours, earned less, and were more likely to be a biological parent. Also, evidence of another important gender difference exists: Wagner et al. (1991) and Wehmeyer and Schwartz (2001b) have reported that girls identified as eligible for special education under IDEA may be more impaired (e.g., have lower mean IQs) than boys who are identified. These differential gender effects indicate an urgent need for timely, gender-sensitive, expanded career development opportunities and improved self-determination skills.

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education settings that include low-achieving students, and low-achieving students and students with mild disabilities follow similar course-taking patterns (U.S. Department of Education, 2002). A substantial proportion of a school’s female population demonstrates a need for enhanced skills in personal self-advocacy and participation in gender-responsive career preparation options. Interventions can be implemented more easily and in a more cost-effective manner because of the common course-patterns of girls who are disabled and those who are low achieving. Moreover, schools are more likely to commit resources when more students are likely to benefit.

CONCLUSION

Transition planning and services for young women with disabilities must begin long before they approach the age of majority. The findings from this study underscore the importance of a comprehensive, life–career development approach (Sitlington, Clark, & Kolstoe, 2000) that addresses gender-related differences and issues. This approach may be especially difficult to implement at a time when the emphasis is on increasing the access of youth with disabilities to traditional academic course offerings and when progress tends to be interpreted narrowly, often in terms of a score on a district or statewide standardized competency test. The evidence of differential gender effects obtained in this study, however, support the need for differentiated transition services that offer young women with disabilities early, ongoing, and carefully selected and implemented work experiences; occupational and vocational course offerings that address gender related issues; and access to gender-responsive self-determination interventions. Public policy also must continue to support ongoing, methodologically sound research to determine how best to address differences in the progress and outcomes of boys and girls with disabilities to ensure changes in policy and practice are evidence based and cost effective during an era of competing public interests and accountability.

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