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EFFECTS OF ECONOMIC DISADVANTAGED STATUS AND SECONDARY VOCATIONAL EDUCATION ON ADOLESCENT WORK EXPERIENCE AND POSTSECONDARY ASPIRATIONS

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Abstract

Data from the National Education Longitudinal Study: 1988-94 (1996) was used to examine participation in secondary vocational education, work experiences, and postsecondary aspirations of high school seniors (in 1992) on the basis of disadvantaged status. Nondisadvantaged youth and vocational track participants were more likely to be employed than peers experiencing economic disadvantage and those with limited or no vocational education involvement, respectively. Adolescents who were enrolled in a vocational track or program were more likely to be employed over 20 hours per week than other adolescents. Vocational participants and economically disadvantaged youth with limited or no vocational involvement expressed low educational and occupational aspirations.

Enrollment patterns and outcomes of adolescents in secondary vocational education have been a concern of vocational researchers and policy makers in recent years (Tuma, 1994). Past investigations have predominantly focused on the impact of these programs on the lives of participants after the completion of high school. A number of benefits can result from involvement in secondary vocational education including lowered dropout rates, enhanced attitudes toward and about work, and less unemployment and better paying jobs for adults who successfully complete secondary vocational programs (e.g., Coyle-Williams, 1991; Meers, 1987; Mortimer, Finch, Dennehy, Lee, & Beebe, 1994).

Despite generally positive indicators of adult outcomes, relatively limited information exists about participation in, or the effects of, secondary vocational education on the occupational experiences and aspirations of adolescents in these programs (Oakes, 1986; Stone, 1988). This lack of data may be due, in part, to expressed difficulties in assessing the impact of secondary vocational education on students (Hill, Harvey, & Praskac, 1992). The information that is available suggests that vocational programs have no real impact on improving academic achievement (performance) of participants. However, adolescents classified as vocational concentrators report slightly higher employment rates than students enrolled in other educational programs (Rasinski & Pedlow, 1994; Riesenberg & Stenberg, 1992). While useful, additional information is needed about the involvement of adolescents in vocational programs. For example, does participation in secondary vocational education have an impact on adolescents' work experiences? Do adolescents involved in vocational programs benefit from higher occupational or educational aspirations? Answers to these and similar questions would provide policy makers and educational practitioners guidance as they shape the design and delivery of occupational preparation.

Information about adolescent involvement in vocational education and the influence of participation on work-related experiences could also be useful in examining the differential benefits afforded to youths with economic disadvantage. Over the past 25 years, varying proposals and initiatives have sought to ensure that adolescents who are economically disadvantaged are provided equal opportunities to participate in secondary vocational programs. Students experiencing economic disadvantage have been targeted for special assistance in vocational education because they constitute almost one-quarter of the U.S. school population, and of a growing realization that poverty can have a tremendous impact on the ability to learn (Kozol, 1991; Smith et al., 1995).

Purpose and Objectives of Study

Given the need for additional information about adolescents involved in secondary vocational programs, this descriptive study used data from the National Education Longitudinal Study: 1988-94 (1996) to examine participation in secondary vocational education, work experiences, and the postsecondary aspirations of economically disadvantaged and nondisadvantaged high school seniors. Specific research objectives addressed in this study were:

1. Describe the level of participation in vocational education courses between disadvantaged and nondisadvantaged adolescents.
2. Describe the effects of disadvantaged status on vocational course-taking patterns.
3. Describe the effects of vocational education and disadvantaged status on high school work experiences including employment status, type of employment, hours worked per week, and wages earned.
4. Describe the effects of vocational education and disadvantaged status on postsecondary educational and occupational aspirations.

Review of Literature

Work Experience

Several issues that contribute to an understanding of the relationship between participation in secondary vocational education and subsequent work-related experiences will be examined in this section. First, the effects of adolescents' work experience on academic achievement will be discussed. Past research indicates that work-related experiences may actually support and extend secondary vocational instruction. Mortimer et al. (1994) explained that "given the salience of vocational issues at this time of life, it is reasonable to suppose that employment would have a formative influence on the development of attitudes about work and job-related behaviors, as well as general attitudes, values, and self-concept" (p. 40). Work experience has also been shown to have a number of positive effects on adolescents including development of time and money management skills, guidance in making more realistic career decisions, and an understanding of employer expectations (McNelly, 1990; Meyer, 1988). Second, evidence is presented on the significant impact that socioeconomic status can have on employment outcomes. Several theories will be offered as

possible explanations of this phenomenon. Finally, a significant number of adolescents work. Sum, Harrington, and Goedicke (1987) estimated that over one-half of all high school seniors work part-time during the school year. Kablaoui and Paulter (1991) concluded that employment appears to be an integral component of adolescent life. Given the importance of work, literature describing the (a) types of jobs held and (b) number of hours worked and wages received by adolescents will be discussed.

Effects of adolescent work experience. A number of recent investigations have examined the impact of part-time work experiences on adolescents' lives. Although the results of these studies are somewhat mixed, it does appears that the effects of adolescent employment depend on the number of hours worked per week and the intensity of the work environment (Hanson & DeRidder, 1994). Adolescents who work more than 20 hours per week tend to have lower grade-point averages, drop out of school more frequently, experience interference with social and school-related activities, and express increased cynicism toward work. Interestingly, Barton (1989) reported that adolescents who worked 20 hours or more per week were more likely than their counterparts who worked fewer hours to (a) be enrolled in vocational education and (b) expect that they would go directly to work after high school. Adolescents who work less than 20 hours per week typically display no significant negative impact on their school performance (D'Amico, 1984; Silberman, 1994).

The role of socioeconomic status on employment. Why examine the impact of economic disadvantage on work experience? Status attainment research has consistently demonstrated the impact of parental social status on eventual employment obtained as an adult (Hotchkiss & Borow, 1990). However, limited information is available about the impact of family socioeconomic status (SES) on adolescents' participation in the work force. Available evidence seems to suggest that lower-income adolescents are the group least likely to be employed (Kablaoui & Paulter, 1991; Lewin-Epstein, 1981). Schill, McCartin, and Meyer (1985) found that working students tended to have at least one parent who was employed in a high prestige occupation. Smith et al. (1995) provided 1994 U.S. Census Bureau data which indicated that only 15.2% of youth in the lowest social class held employment as compared to 31.5% for middle class and 36.8% for upper class youth.

Despite the apparent effects of low SES on a lack of employment, relatively limited explanations of this phenomenon have been advanced. The impact of low SES on adolescent employment can be explained in a number of ways including social cognitive theory (Bandura, 1986) and structural sociological theory (Kerckhoff, 1976). Social cognitive theory recognizes mutual, interacting influences between people, their behavior, and the environment. That is, personal attributes, external environmental factors, and overt behavior "all operate as interlocking mechanisms that affect one another bidirectionally" (Lent, Brown, & Hackett, 1994, p. 82). Thus, the low proportion of adolescents from low SES backgrounds in the work force might be explained by the combined and interactive result of poor work attitudes, a lack of positive role models, and the direct result of work place discrimination.

Structural sociological theory is similar to social cognitive theory, although it places a heavier emphasis on the role of external factors. Meyer (1987) noted that:

> Structuralist theory emphasizes the role of extra-individual or structural forces that place individuals into occupations or reward their efforts on the basis of a group characteristic, such as gender or race, or their placement in an external structure, such as the dual labor market or an occupation with no, or minimal, promotion ladder. Structuralist theory, therefore, suggests that low status and low wages result from different opportunities available to a certain type of person. (p. 46)

Types of jobs. The majority of occupations available to adolescents are found in the secondary labor market, e.g., jobs in clerical, sales, fast food, and personal service fields (Meyer, 1987; Silberman, 1994). Meyer (1988) commented that "the work available to in-school adolescents is remarkable for its homogeneity; that is reasonable since adolescents normally work at low-skill, entry-level, secondary labor-market jobs" (p. 54). In addition, the types of jobs held by male and female adolescents tends to follow traditional patterns. Female

students hold primarily sales, clerical, and health-related positions, whereas males have a tendency to dominate food service, labor, repair, and custodial jobs (Kablaoui & Paulter, 1991). Given the focus of vocational education programs designed for high-tech, high skills occupations, and on preparing youth for occupations considered nontraditional for their gender, it is possible that involvement in vocational education may have a positive influence on the type of employment obtained while still in high school. To date, this information is not available in the general research literature.

Hours and wages of adolescents who work. The number of hours worked by adolescents in the United States is substantial (Kablaoui & Paulter, 1991; Mortimer et al., 1994).

> U.S. Department of Education surveys [show] that half of all sophomores, two-thirds of all juniors, and nearly three-fourths of all seniors hold jobs during the school year. The average high school senior works more than 20 hours weekly, in addition to a 30-hour school week. (Silberman, 1994, p. 66)

Meyer (1988) found that the same factors that affect wages in adults also affect those of adolescents; namely, sex, age (or experience), and family SES. Meyer indicated that while results for adults do not necessarily need to be applicable to adolescents, "in the area of wage differences, adolescent wages mirror the adult wage gap" (p. 46). Gender plays a significant role in determining wages. In fact, research shows a consistent wage gap between adolescent males and females where female workers tend to be paid less than their male counterparts for performing the same job duties. The disparity in wages between males and females remains through adulthood (D'Amico, 1984; Meyer, 1987; 1988). A notable exception to this general trend was reported by Mortimer et al. (1994) who noted that initial wage differences by sex steadily decreased during adolescence.

Postsecondary Aspirations

Postsecondary aspirations are important because of the potential that lowered aspirations have on precluding involvement in certain types of activities. Through a complex set of processes and interactions, high aspirations may enhance opportunities to attain high prestige occupations, while lowered aspirations may limit occupational possibilities. For example, adolescents who do not complete certain academic prerequisite courses in middle school are often unable to enroll in advanced mathematics and science courses in high school. A lack of academic prerequisites, then, all but eliminates the possibility of attaining a college degree which results in diminished opportunities for attaining high prestige occupations (Lent, Brown, & Hackett, 1994; Rosenbaum, 1981).

A major argument of proponents for secondary vocational education and adolescent work experience is that they instill high educational and occupational aspirations (Kablaoui & Paulter, 1991). If this assertion is true, involvement could be especially important for youth who are economically disadvantaged as they are more likely to report lower prestige occupational aspirations than advantaged peers. Thus, the potential impact of economic disadvantage and degree of involvement in vocational education must be taken into account when examining educational and occupational aspirations. Systemic (institutional) bias and structural barriers erected on the basis of social class can lead to limited occupational aspirations and availability beyond individual control. In fact, occupational aspirations may actually reflect the effects of discrimination, social attitudes, cultural expectations, and stereotypes (Gottfredson, 1986; Hotchkiss & Borow, 1990; Mitchell & Krumboltz, 1990). Negative cultural perceptions and expectations based on social class may impose lower status and a devalued role on adolescents. The effects of bias can result in limited career aspirations for disadvantaged youths that reflect narrow, stereotypical employment possibilities (Rojewski, 1994; Rojewski & Yang, in press).

Method

Population and Sample

NELS:88-94 database. The National Education Longitudinal Study: 1988-94 (NELS:88, 1996) database, administered by the National Center for Educational Statistics, U.S. Department of Education, was used for

this study. NELS:88 is the third in an ongoing series of major, nationally-representative, longitudinal studies sponsored by the federal government to study the educational, vocational, and personal development of adolescents and young adults. The NELS:88 data set was originally designed as a general purpose data set for developing and examining federal policy on education. Specifically, NELS:88 focuses on a number of interrelated policy issues including the identification of attributes associated with educational (and occupational) aspiration and achievement, and the transition of different types of students from eighth grade to secondary school to postsecondary environments (Ingels et al., 1994).

Selection of participants initially was based on a two-stage stratified sample with schools as the first-stage unit and a random sample of students within each selected school as the second-stage unit. Initial school selection was also based on unequal probabilities in order to obtain adequate numbers of selected underrepresented student subgroups. Thus, normalized sampling weights were needed to obtain unbiased population estimates. NELS:88 researchers employed a two-stage weighting process that (a) calculated unadjusted weights as the inverse of the probabilities of selection accounting for the sample selection process and (b) adjusted initial weights to compensate for nonresponse. The relative weight of all applicable cross-sectional weights, supplied by NELS:88 researchers, was calculated and applied (Owings et al., 1994). Additional details about this data set can be found in recent NELS:88 User's Manuals and technical reports (e.g., Haggerty, Dugoni, Reed, Cederlund, & Taylor, 1996; Ingels et al., 1994; Owings et al., 1994; Sanderson, Dugoni, Rasinski, & Taylor, 1996).

The NELS:88 data set was selected for this analysis because of several positive features. One strength of the database is the inclusion of numerous items that specifically examine the aspirations (both educational and occupational) and work experiences of adolescents. A second reason for selection is that the database represents a nationally-representative sample of thousands of high school seniors selected through a rigorous two-stage stratified, probability design. Third, ease of access and use was considered. The entire NELS:88-94 database, containing data from each stage of data collection is available on CD-ROM and easily accessed and analyzed using standard statistical analytic packages such as SAS or SPSS.

Sample data set. The sample for this investigation consisted of adolescents who were high school seniors in 1992 who provided valid responses to select questions related to work, participation in vocational education courses, and postsecondary aspirations. Some participants were eliminated from the final data pool for a number of reasons including questionnaire nonresponse, missing data on key questions (e.g., level of participation in vocational education), and dropping out of school prior to grade 12. This winnowing process resulted in a total weighted data pool of 12,009 student-based cases which included 2289 adolescents who were economically disadvantaged (male, n = 1105; female, n = 1184) and 9720 considered nondisadvantaged (male, n = 4989; female, n = 4731). A majority of adolescents who were economically disadvantaged were White (n = 1188) but higher percentages of African American (36.9%) and Hispanic youth (44.1%) were represented in the disadvantaged group as compared to White adolescents (13.3%).

Definition of Variables/Instrumentation

Demographic variables. Information about gender, race/ethnicity, and socioeconomic status (i.e., economic disadvantage) were collected from student questionnaires. Socioeconomic status (SES) was conceptualized and calculated by NELS:88 researchers and reflects a composite score composed of five separate variables including family income, parents' education levels, and parents' occupations (Owings et al., 1994). Responses to each of these five items were standardized by NELS:88 researchers to a mean of 0 and a standard deviation of 1. Nonmissing standardized components were then averaged to yield a SES composite score for each participant. Composite SES scores were also categorized into quartiles. For this analysis, economic disadvantage was defined as all SES composite scores falling in the lowest quartile.

When the disadvantaged and nondisadvantaged groups are examined, several distinct descriptive features emerge. First, 55.8% of all families in the disadvantaged group reported a family income of less than $15,000 per year. This figure ($15,000) roughly equates to the established federal income guidelines in determining financial poverty for a family of four. An additional quarter of the families in this group

reported incomes less than $25,000 per year. (The number of dependents per household can account for some of the families that reported higher incomes but were still included in the lowest economic quartile.) In contrast, 66.0% of the families in the nondisadvantaged category reported incomes of $35,000 per year or higher (a full 25.0% reported incomes in the $50,000-74,000 range). In terms of educational attainment, 83.7% of disadvantaged parents (and 67.8% of spouses) who completed the questionnaire indicated attaining a high school diploma, GED, or less. This figure compares with only 25.6% of nondisadvantaged parents (25.3% of spouses) who reported receiving this same level of education. Fully, three-fourths of parents in the nondisadvantaged category received some type of postsecondary education or training. This general description is somewhat constrained by the data made available by the NELS:88 researchers (e.g., coding scheme using categorical rather than continuous data, use of composite scores for describing SES). Even so, the categorization process appears to have produced two distinct groups that generally reflect both the federal guidelines on determining economic disadvantage and the overall percentage of youth living in poverty in the U.S. (Smith et al., 1995).

Measurement of vocational program participation and work experience. Students were assigned to categories that represented varying levels of participation in vocational education--(a) no vocational course work, (b) one or more vocational courses, but not in vocational track, and (c) one or more vocational courses and enrolled in the vocational track. Work experience was conceptualized as a trichotomous variable including (a) no past paid work experience, (b) past work experience but currently unemployed, and (c) currently employed.

Measurement of educational and occupational aspirations. Educational aspirations were determined by asking respondents to denote the highest level of education they thought they would achieve. For analysis, educational aspirations were conceptualized as categorical and as an interval-level construct (Haller & Virkler, 1993) with a low score of 1 representing aspirations less than high school and a high score of 6 representing aspirations for a graduate degree (e.g., masters degree, doctoral degree, or equivalent).

Occupational aspirations were assessed by asking students to indicate the job they expected to have at 30 years of age from a listing of 17 separate occupational categories. For data analysis, occupational aspirations were coded using the socioeconomic index (SEI) codes (Stevens & Cho, 1985). This socioeconomic index provides a 4-digit SEI code that represents the income and educational attributes found in the total labor force and represent prestige scores. SEI prestige codes were chosen for several reasons:

1. to provide a continuous variable for aspirations that facilitated data analysis,
2. because prestige levels influence peoples' perceptions about the relative worth, power, and status of occupations (Kraus, Schild, & Hodge, 1978; Stevens & Cho, 1985), and
3. because SEI codes reflect status expectations and ability estimates that can be used in considering individual and societal constraints on career choice (Hotchkiss & Borow, 1990; Salteil, 1988).

Several coding decisions were necessary in order to reconcile the different schemes employed by the NELS:88 database and SEI. First, three high prestige occupational categories (High Professional, Low Professional, School Teacher) were assigned the same SEI code (68.51) since these types of occupations were all found within the broader SEI category labeled Professional Specialty. Second, since no separate code was available for Small Business Owner, this occupation was assigned the same SEI code (53.34) as that designated for Manager. Third, the occupational category of Military was designated the SEI code attributed to Protective Services (30.13). Finally, adolescents with aspirations not represented by the 17 pre-established categories were assigned the overall mean score (SEI $\underline{M}$ = 34.48) reported by Stevens and Cho (1985).

Results

This research study contained four primary objectives designed to examine how disadvantaged status influences participation in vocational education programs and vocational course-taking patterns, and the combined influences of disadvantaged status and involvement in vocational education on adolescent work

experiences and postsecondary aspirations. The results of data analysis for each objective are presented in subsequent paragraphs.

Level of Participation in Vocational Education by Disadvantaged Status

The first research objective sought to describe the influence of disadvantaged status on adolescent participation in vocational education courses. Level of participation in vocational education was arranged into three distinct categories--(a) never enrolled in a vocational education course (n = 6613), (b) participation in vocational course(s) but not in vocational track (n = 4147), and (c) participation in vocational course(s) and in vocational track (n = 1249). The percentage of disadvantaged youth enrolled in the vocational track was slightly more than double the percentage found for nondisadvantaged counterparts in this category. Conversely, the percentage of youth who reported no prior participation in vocational education was greater for nondisadvantaged adolescents. The proportion of students who reported past involvement in one or more vocational courses but were not enrolled in a vocational track was relatively equal for both disadvantaged status groups (see Table 1).

Insert Table 1 about here

Effects of Disadvantaged Status on Vocational Course-Taking Patterns

The second objective of this study was to describe the potential effects of disadvantaged status on vocational education course-taking patterns. Overall, a greater percentage of disadvantaged youth (n = 546, 23.8%) reported being enrolled in the vocational education track than nondisadvantaged counterparts (n = 968, 10.0%). Likewise, a greater percentage of disadvantaged adolescents (n = 1095, 47.8%) participated in a general education curriculum than nondisadvantaged peers (n = 3758, 38.7%). Nondisadvantaged youth (n = 4994, 51.4%) were almost twice as likely to be enrolled in an academic or college prep curriculum than disadvantaged youth (n = 649, 28.3%).

When looking at vocational program enrollment only, a greater percentage of disadvantaged youth participated in most vocational programs including technology education, business education, health occupations, and trades occupations programs. In fact, enrollment in marketing education was the only vocational program area where a relative balance existed between disadvantaged and nondisadvantaged participants (see Figure 1).

Insert Figure 1 about here

Effects of Vocational Education and Disadvantaged Status on High School Work Experiences

The third research objective was designed to describe the possible influence of disadvantaged status and participation in vocational education on high school work experiences. Four aspects related to adolescents' work experience were chosen including employment status, type of employment, hours worked per week, and wages. Results for each of these areas are described in the following paragraphs.

Employment status. Employment status was conceptualized as three mutually exclusive categories including no prior work experience, prior work experience but currently unemployed, and currently employed. Over half of all adolescents in this sample were employed, with the exception of disadvantaged students without prior vocational course work. Adolescents enrolled in a vocational program regardless of disadvantaged status reported higher employment rates than their disadvantaged or nondisadvantaged peers respectively, with less or no involvement in vocational education. Nondisadvantaged youth reported higher employment rates than their disadvantaged peers. This trend was especially true for those enrolled in vocational programs where approximately two-thirds of nondisadvantaged adolescents were employed compared to slightly over one-half of disadvantaged youth. Conversely, disadvantaged students were almost twice as likely as their nondisadvantaged counterparts to report no prior work experience. Almost one-quarter of all economically disadvantaged youth without any vocational course work also reported no past work history. These youth may be at particularly high risk of work-related problems in the transition from school to work (see Table 2).

Insert Table 2 about here

Type of employment. Specific types of employment were categorized to approximate the types of occupations found in various vocational education programs. Roughly one-third of all adolescents reported working at a fast food restaurant. Disadvantaged youth were more likely to work in this type of occupation than nondisadvantaged peers. In contrast, nondisadvantaged adolescents were more likely to be employed in sales-related occupations. An exception was found for youth who had participated in prior vocational courses. Here, the rate of employment was fairly equal for all youth regardless of disadvantaged status. While a small percentage of respondents reported being employed in farm work/general labor, disadvantaged youth were twice as likely to report this status as compared to nondisadvantaged peers. Adolescents, regardless of disadvantaged status, who were enrolled in a vocational program were more likely to be employed in mechanical or general repair occupations than youths who had less or no prior involvement in vocational course work. A similar, but somewhat less pronounced, effect is also present for general office occupations (see Table 3).

Insert Table 3 about here

Hours. Several interesting patterns were observed in response to the following questionnaire item: How many hours do/did you usually work each week on your current or most recent job during this school year? First, the percentage of youth who worked between 11 and 20 hours per week was fairly comparable among all six sub-groups defined by vocational involvement and disadvantaged status. Second, vocational participants, regardless of disadvantaged status, were more likely than their nonvocational counterparts to work more than 20 hours per week. However, disadvantaged youth with limited or no prior involvement in vocational education were also more likely than their nondisadvantaged peers to work 21 or more hours weekly. In fact, adolescents with limited or no prior vocational education were most likely to work the least number of hours (less than 10 hours) per week (see Table 4).

Insert Table 4 about here

Wages. Three-fourths of all adolescents, regardless of status or program involvement, earned at or slightly above the minimum wage (the minimum wage was $4.25 in 1992 when data were collected from high school seniors). Disadvantaged youth at all three participation levels were less likely than nondisadvantaged peers to earn above $6.00 per hour, and more likely to earn less than the minimum wage. Interestingly, increased involvement in vocational education also increased the percentage of disadvantaged youth who received less than the minimum wage (see Table 5).

Insert Table 5 about here

Effects of Disadvantaged Status and Participation in Vocational Education on Postsecondary Aspirations

The final research objective sought to describe the potential influence of participation in vocational education and disadvantaged status on adolescents' educational and occupational aspirations. Group mean scores for educational aspirations were calculated by asking participants to indicate the highest level of education they thought they would achieve. Educational aspiration scores ranged from 1-6 with 1 indicating aspirations less than a high school diploma and 6 indicating aspirations for graduate education. Occupational aspirations were coded using SEI prestige codes (Stevens & Cho, 1985) which have a possible range from a low of 13.98 to a high of 90.45 ($\underline{M}$ = 34.48). Separate statistical analyses (two-way analysis of variance) were performed to examine differences in educational and occupational aspirations based on disadvantaged status (2 groups) and participation in vocational education (3 groups).

The magnitude (or strength) of observed differences was also examined because differences that are "highly significant [sic] statistically (i.e., are very unlikely to have occurred by chance) may nevertheless have a very small effect size (i.e., have virtually no practical effect on the outcomes of interest)" (Haller & Virkler, 1993,

p. 173). Problems with interpreting statistical differences are often most apparent when large databases are analyzed and statistically significant results are more of a reflection of large sample size than practically significant differences. Magnitude was determined by eta^2 which is an estimate of the variance accounted for by the analysis of variance (ANOVA) procedure. Measures of effect size (e.g., eta^2) can provide information about the relative importance or strength of an observed difference, although interpretation is contextual, somewhat subjective, and dependent on research goals (Kellow, 1994).

Educational aspirations. Adolescents in the vocational track reported the lowest educational aspirations regardless of disadvantaged status (disadvantaged, M = 3.74; nondisadvantaged, M = 3.96). Educational aspirations appeared to increase as involvement in vocational education decreased for both non-track participation (disadvantaged, M = 4.24; nondisadvantaged, M = 4.83) and nonparticipation (disadvantaged, M = 4.59; nondisadvantaged, M = 5.13). A two-way analysis of variance (ANOVA), using disadvantaged status and level of vocational participation as grouping variables, resulted in a statistically significant interaction, F (2, 11194) = 10.37, p < .001. Youth in the vocational track group held somewhat similar educational aspirations, regardless of disadvantaged status. However, disadvantaged youth with limited or no vocational course work held lower educational aspirations than their nondisadvantaged counterparts, especially for those youth without any prior involvement in vocational education. The effect size (i.e., eta^2) for this statistically significant interaction was calculated at .114, meaning that the two grouping variables accounted for 11.4% of the variance found in educational aspirations.

Descriptive data revealed that adolescents in the vocational track group were more likely to aspire to a high school education than other students. Disadvantaged youth, at all levels of program involvement, were twice as likely to aspire to some type of 2-year postsecondary education than nondisadvantaged peers. Disadvantaged youth were less likely to aspire to a college degree than nondisadvantaged counterparts (see Table 6).

Insert Table 6 about here

Occupational aspirations. An examination of the group mean scores reflecting occupational aspirations revealed several interesting patterns. First, adolescents in the vocational track reported the lowest occupational aspirations (based on SEI prestige codes) regardless of disadvantaged status (disadvantaged, M = 46.47; nondisadvantaged, M = 46.75). Second, occupational aspirations increased in prestige as involvement in vocational education decreased for both non-track participation (disadvantaged, M = 53.82; nondisadvantaged, M = 56.96) and nonparticipation (disadvantaged, M = 55.62; nondisadvantaged, M = 60.22). A significant two-way interaction was found for the effects of disadvantaged status and level of participation in vocational education, F (2, 9975) = 6.07, p < .002. An effect size of .058 revealed than 5.8% of the variance in occupational aspirations was accounted for by the two grouping variables used in this two-way ANOVA. Adolescents in the vocational track reported the lowest occupational aspirations regardless of disadvantaged status. For adolescents with limited or no prior involvement in vocational education, economically disadvantaged youth were less likely to aspire to higher prestige occupations (e.g., high professional positions) and more likely to aspire to occupations of moderate and low prestige (e.g., office worker and tradesperson) than adolescents with limited or no contact with vocational education (see Table 7).

Insert Table 7 about here

Discussion

Summary of Findings

Adolescents in this study reported different types of work experiences and postsecondary aspirations based on their disadvantaged status and level of participation in secondary vocational education courses and programs. Contrary to some studies (e.g., Meyer, 1988), nondisadvantaged youth were more likely to be employed than their disadvantaged peers. Vocational track participants also had a slightly higher

employment rate than those with limited or no vocational involvement, regardless of disadvantaged status. Riesenberg and Stenberg (1992) reported similar findings in their study of Idaho adolescents. Disadvantaged adolescents with no vocational participation reported the lowest levels of current or prior work experience. The lack of vocational preparation for these disadvantaged youth is of particular concern given that work experience and vocational education are positively linked to occupational preparation and adult employment (McNelly, 1990; Mortimer et al., 1994). From these results, it appears that youth who might benefit the most from involvement in vocational preparation programs and work experience are involved in them the least. Not surprisingly, the types of employment held by youth were quite similar to those reported in past investigations (Meyer, 1987; Silberman, 1994) and were firmly grounded in the secondary labor market. Adolescents in vocational education programs were more likely to be employed in general office and mechanics/general repair occupations, but less likely to work as a grocery clerk.

Vocational program participants were more likely to work 20 or more hours per week than their counterparts with limited or no vocational involvement. Similarly, Barton (1989) reported that vocational participants in his study were more likely to work 20 or more hours per week than adolescents not enrolled in a vocational course of study. Disadvantaged youth with limited or no participation in vocational education worked more hours than their nondisadvantaged peers. Given the negative connections between increased hours worked and negative academic and social performance (Barton; D'Amico, 1984; Hanson & DeRidder, 1994), youth deemed economically disadvantaged and those enrolled in secondary vocational programs appear to be at greater risk of experiencing academic problems. While speculative, it is possible that the extensive work experiences of these particular youth may actually be detrimental to their high school success.

Vocational program participants and disadvantaged youth with limited or no vocational program experience expressed the lowest educational and occupational aspirations of all subgroups examined. In contrast, postsecondary aspirations increased as level of involvement in vocational education decreased. The lower occupational aspirations expressed by high school seniors with economic disadvantage and those in vocational programs may indicate realistic expectations about the types of available employment options. Conversely, these aspirations may reflect perceptions of potential barriers to occupational opportunities or, perhaps, that low-prestige job options are most appropriate, i.e., self-concept (Rojewski, 1994). The significantly higher percentage of vocational and disadvantaged youth who aspire to 2-year postsecondary technical education is not, in and of itself, a negative thing. However, past researchers have used this type of indicator to suggest that secondary vocational education functions as a mechanism of social exclusion. And, indeed, in this study economically disadvantaged youth were more likely to be involved in a vocational education program and less likely to enroll in an academic or college-prep curriculum. In any event, it does appear that involvement in a secondary vocational education program is related to a reduced likelihood of attending college (Arum & Shavit, 1995; Vanfossen, Jones, & Spade, 1987).

Conclusions

Several limitations must be kept in mind as the results of this study are interpreted. First, the definitions of variables and categorical organization of many indicators (e.g., hours worked, wages earned, employment type, etc.) used in this study were constrained by data made available through the NELS:88 database. Future investigations might benefit from refining the categories used in this study. Second, this descriptive investigation did not attempt to determine possible causes of the work experiences and postsecondary aspirations reported here. Rather, the intent was to explore potential differences on the basis of economic disadvantage status and level of involvement in vocational education. Third, adolescents who dropped out of high school prior to Grade 12 were not included in this sample. Given the fact that the high school drop out rate is higher for disadvantaged youth, it is reasonable to assume that individuals who did not stay in school have different work experiences and aspirations than those who remained in high school. Finally, the degree of realism reflected by stated aspirations of respondents was not examined.

Despite these research parameters, this study does provide useful information regarding the work experiences and postsecondary aspirations of high school seniors. The nature of observed differences between adolescents on the basis of socioeconomic status and involvement in secondary vocational education might

be understood by examining the five composite measures used to construct the SES composite score including family income, parents' education levels, and parents' occupations. These measures may provide inference as to the availability and nature of role models in occupational choice and preparation. Lowered social status is likely to reinforce devalued work roles for adolescents and may limit occupational experiences and aspirations to narrow, stereotypical employment possibilities.

Practitioners should be aware of the general work and aspirations patterns reported in this analysis and need to address concerns that vocational programs may serve to socially exclude or "track" youth. To address this increasingly sensitive issue, future research efforts should focus on whether adolescents participate in vocational programs because of personal reasons and decisions (e.g., self-concept, academic ability, or interests in obtaining vocational skills training) or as a result of systemic (institutional) practices that tend to place disadvantaged and less academically able youth in vocational programs. Given that disadvantaged adolescents and vocational program participants tended to express lowered aspirations, and as a result presumably limit their secondary and postsecondary opportunities to acquire advanced work skills and employment, this issue assumes a critical concern.

Several avenues of action are possible in light of the results of this study. For example, one way to address potential problems of disproportionate enrollment of disadvantaged youth or of lowered educational and occupational aspirations is to involve economically disadvantaged adolescents and those in vocational programs in transition planning efforts that identify specific postcollege occupational and educational alternatives that realistically reflect ability and interest. Transition planning efforts might also be enhanced by interpreting lowered educational and occupational aspirations as a possible indication of perceived barriers encountered by youth. Potential barriers could be investigated to determine whether they are real or illusory in nature. Then, practical and effective methods of reducing or eliminating them could be designed and implemented.

A second way to approach the problems identified in this analysis could be for educators to examine the potential for systematic bias in the practices of institutional and individual faculty toward economically disadvantaged youth. While self-reflection and classroom-based interventions cannot eliminate the negative effects of low SES, professionals might seriously examine the practices and enrollment patterns in their schools. Educators might also consider their own expectations, biases, and preconceived ideas about the employment potential of individuals from lower social class backgrounds and examine how these perceptions affect the delivery of intervention programs.

A third concern that is raised by this study involves the potential implications of employing an artificial curriculum structure that separates academic or college-prep course work from vocational course work on adolescents' work experiences and postsecondary aspirations. The present findings suggest that adolescents, particularly those reporting economic disadvantage or participating in vocational programs, might benefit from a more rigorous education that integrates both academic and vocational elements. Vocational education is typically portrayed as an alternative to academic education, as was the case in this study. Given the need for young people to receive increasingly higher levels of education to successfully enter the labor market, students need to be encouraged to attain as much education as possible. An integrated academic-vocational curriculum might facilitate both educational and occupational aspirations and attainment. However, if conceptualized as a separate track, as was done in this study, vocational education may not be as beneficial to adolescents deemed to be economically disadvantaged. Greater investigation is needed to determine whether an integrated academic-vocational curriculum has a positive influence on the types of work experiences and postsecondary aspirations (and attainment) reported by adolescents.

Finally, results of this study suggest that promoting equal access and opportunity for the participation of economically disadvantaged adolescents in secondary vocational education programs (e.g., provisions in the Carl D. Perkins Vocational and Applied Technology Education Act) is not, in and of itself, enough to ensure that these youth will identify, maintain, or pursue high prestige educational and occupational aspirations as adults. The provision of secondary-based guidance, exploration, and support services in conjunction with knowledge of educational requirements and other information about the world of work appears critical.

Equally important is the need to address potential systemic bias from school personnel that dictates the placement of certain youth in vocational programs primarily on the basis of disadvantaged or academic status.

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Table 1

Level of Participation in Vocational Education by Disadvantaged Status (Weighted Percentages)[a]

	Disadvantaged Status	
	Disadvantaged	Nondisadvantaged

	N %	*N* %
No participation	1019 (44.5)	5594 (57.6)
Participation, nonvocational track	825 (36.0)	3322 (34.2)
Participation, vocational track	445 (19.4)	804 (8.3)

aColumn percentages reflect the influence of normalized weights used to compensate for sampling design and allow for population inference. Column totals may not equal 100.0% due to rounding error and/or missing data.

Table 2
Employment Status by Vocational Participation and Disadvantaged Status (Weighted Percentages)[a]

Employment Status	Vocational Education Participation					
	No Participation		Participation/ No Track		Participation/ Vocational Track	
	Disadv	NonDis	Disadv	NonDis	Disadv	NonDis
No prior work experience	23.6	12.6	15.5	9.6	14.8	7.5
Prior experience, but currently unemployed	31.2	36.3	35.4	33.5	32.3	27.3
Currently employed	44.7	50.2	47.9	56.2	51.5	64.4

a Column percentages reflect the influence of normalized weights used to compensate for sampling design and allow for population inference. Column totals may not equal 100.0% due to rounding error and/or missing data.

Table 3
Types of Work Experiences Reported by Adolescents (Weighted Percentages)[a]

Types of Employment	Vocational Education Participation					
	No Participation		Participation/ No Track		Participation/ Vocational Track	
	Disadv	NonDis	Disadv	NonDis	Disadv	NonDis
Fast food occupations	34.8	28.1	36.8	29.9	35.3	30.5
Service occupations	13.5	18.8	13.7	16.8	15.3	14.9
Sales occupations	7.6	18.9	12.5	13.5	5.4	9.4
Health occupations	3.7	2.0	2.0	1.9	4.1	2.2
General office occupations	6.8	8.3	7.6	10.5	10.0	12.5
Construction occupations	4.4	2.2	2.9	3.3	3.6	4.1
Grocery clerk	24.1	19.3	18.6	20.1	15.1	15.7
Farm worker/laborer	4.5	1.6	4.2	2.5	7.2	4.2

Mechanic/general repair occupations	.6	.8	1.8	1.4	3.5	5.8

aColumn percentages reflect the influence of normalized weights used to compensate for sampling design and allow for population inference. Column totals may not equal 100.0% due to rounding error and/or missing data.

Table 4
Hours Worked Per Week by Adolescents with Current or Prior Work Experience (Weighted Percentages)[a]

Hours Worked Per Week	Vocational Education Participation					
	No Participation		Participation/ No Track		Participation/ Vocational Track	
	Disadv	NonDis	Disadv	NonDis	Disadv	NonDis
1-10 hours per week	20.9	29.7	17.9	24.8	13.0	13.8
11-20 hours per week	40.3	42.7	41.5	42.5	41.4	38.3
21 or more hours per week	38.8	27.6	40.7	32.9	45.6	48.5

aColumn percentages reflect the influence of normalized weights used to compensate for sampling design and allow for population inference. Column totals may not equal 100.0% due to rounding error and/or missing data.

Table 5
Wages Earned Per Week In Current or Most Recent Job (Weighted Percentages)[a,b]

Wages Earned	Vocational Education Participation		
	No Participation	Participation/	Participation/

			No Track		Vocational Track	
	Disadv	NonDis	Disadv	NonDis	Disadv	NonDis
Less than $4.25 per hour	11.7	9.2	14.8	10.2	16.8	9.9
$4.25-6.00 per hour	76.5	76.5	75.8	76.4	74.5	78.0
More than $6.00 per hour	11.7	14.3	9.4	13.3	8.7	12.1

aColumn percentages reflect the influence of normalized weights used to compensate for sampling design and allow for population inference. Column totals may not equal 100.0% due to rounding error and/or missing data. [b]Reflects data that was collected in 1992 when participants were high school seniors and the minimum wage was $4.25 per hour.

Table 6
Educational Aspirations by Disadvantaged Status and Participation in Vocational Education (Weighted Percentages)[a]

Educational Aspirations	Vocational Education Participation					
	No Participation		Participation/ No Track		Participation/ Vocational Track	
	Disadv	NonDis	Disadv	NonDis	Disadv	NonDis
1. Less than high school	1.1	.7	.9	.2	.2	.3
• High school graduate	7.7	2.8	9.1	3.6	10.1	10.2
• Vocational/technical school (up to 2-year	9.8	4.3	18.5	9.4	47.6	29.4

postsecondary degree)						
• College (less than a bachelor's degree)	15.4	8.4	17.6	14.9	18.8	19.3
• College graduate	28.0	37.9	28.9	36.7	10.9	19.4
• Graduate degree (master's, doctoral degree, or equivalent)	26.3	40.2	16.0	29.1	12.3	14.1

aColumn percentages reflect the influence of normalized weights used to compensate for sampling design and allow for population inference. Column totals may not equal 100.0% due to rounding error and/or missing data.

Table 7

Occupational Aspirations by Disadvantaged Status and Participation in Vocational Education (Weighted Percentages)[a]

Prestige Level of Occupations (Educational Requirements)	Vocational Education Participation					
	No Participation		Participation/ No Track		Participation/ Vocational Track	
	Disadv	NonDis	Disadv	NonDis	Disadv	NonDis
College degree required	56.1	69.1	50.7	61.9	39.7	40.0
High school diploma or some college required	21.2	14.7	26.2	19.3	35.3	34.7
Less than high school diploma Required	5.0	2.9	7.6	5.4	11.7	10.8

Other plans	8.2	9.8	9.3	9.7	6.8	9.5

aColumn percentages reflect the influence of normalized weights used to compensate for sampling design and allow for population inference. Column totals may not equal 100.0% due to rounding error and/or missing data.

Figure Caption

Figure 1. Participation in vocational programs by disadvantaged status.

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