Consequences of Dropping Out of School: Findings From High School and Beyond

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ABSTRACT **The dropout problem has recently been the focus of considerable concern and the subject of much research. Nevertheless, the lack of a careful and systematic assessment of the consequences of dropping out still exists. The purpose of the present study was to examine the personal, social, and economic consequences of dropping out of school. The High School and Beyond (HS&B) data base was used to investigate the experiences of dropouts and high school graduates in 1986, 4 years after the projected date of graduation. Specifically, dropouts and graduates with no postsecondary education were compared on (a) self-esteem, (b) alcohol use, (c) political/social participation measures, (d) work satisfaction, (e) salary of current job, (f) periods of unemployment, and (g) number of jobs. Multiple-regression analyses were used to determine the degree to which dropping out explained variance in those measures when race, urbanicity, geographic region, socioeconomic status, and academic achievement were held constant. Dropouts differed from graduates with no postsecondary education on many personal and social adjustment measures. Results also indicated that male and female dropouts have different personal, social, and economic experiences.**

With increasing frequency, practitioners, researchers, and the general public have demonstrated alarm over the social impact of public school dropouts (Levin, 1985; Mann, 1986; Ordovensky, 1987; Pallas, 1986). One of the more dire notes was sounded by the National Dropout Prevention Center (1987):

> Every year more than 700,000 public school students drop out of school. By the year 2000, the number of students giving up on education will increase to about 40 percent or nearly 2,000,000. Tragically, most of these individuals will likely drop out of society, out of the work force, out of the American way of life.

The "dropout problem" is clearly both serious and complex, and it is considered a problem for individuals, schools, and society.

When a young person drops out of school, judgments are often made as to his or her moral character and potential for success in later life. Those messages are powerful, and they may intensify already-existing negative patterns of behavior and self-perception. In addition, in a labor market that demands increasing levels of education and skills to cope with contemporary technology, the economic impact of school "leavers" may be too vast to ignore. One early estimate of the costs in social service, crime prevention, and lost income caused by dropouts was $6 billion per year (Levin, 1972; cited in Rumberger, 1987). Recently, Catterall (1985) suggested that for each school *class* (e.g., the 1980 sophomore class), approximately $228 billion in lifetime earnings was lost because of dropping out.

Much of the research on the dropout problem has focused upon the characteristics of those who drop out and the factors influencing dropout behavior. Early research on dropouts described them as "misfits" suffering from poor social adjustment, as evidenced by low self-esteem (Beck & Muia, 1980; Cervantes, 1965; Schreiber, 1964). As noted by Pallas (1986), the "social disability" view of dropouts depicts them as having poor social and interpersonal skills and engaging in antisocial behavior. Other research of that type has documented that dropouts differ from graduates in gender, socioeconomic status (SES),

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and ethnicity (Barro & Kolstad, 1987; Cervantes; Coombs & Cooley, 1968; Ekstrom, Goertz, Pollack, & Rock, 1986; Fine, 1986; Pallas, 1986; Peng, 1983; Rumberger, 1983; Wehlage & Rutter, 1986). In addition, dropouts have been shown to differ from their peers relative to urbanicity and geographic region (Barro & Kolstad; Pallas; Peng).

Yet, dropout research has begun to move beyond developing profiles of "typical" dropouts. Recent research has focused upon the influence of school-level factors (Wehlage & Rutter, 1986), and theoretical models of dropout behavior have been developed and examined (Bryk & Thum, 1989; Finn, 1989; Pallas, 1986). Nevertheless, our concerns and policies on the dropout problem are predicated on the belief that dropping out leads to adverse consequences for both individuals and society. In the social disability view, dropouts' social-skills deficits should be manifest in negative postschool experiences.

Although that belief may be warranted, there has been a lack of rigorous research on the personal and social consequences of dropping out. Some research on the consequences of dropping out has sought to document both a substantial economic shortfall of dropping out (Catterall, 1985; Levin, 1972) and a significant loss in educational achievement (Alexander, Natriello, and Pallas, 1987; Ekstrom et al., 1986). Rumberger (1987) suggested that dropouts are more likely to be unemployed, to require public assistance, and to engage in antisocial behavior.

Some researchers have argued that it is not the act of dropping out per se that leads to negative experiences, but the differences in preexisting factors, cited earlier, such as gender, race, and SES. Fine (1986) argued that the social disability view fosters the societal prejudices that lead to both dropout behavior and negative postschool consequences such as poor work opportunities and alienation from society at large. Bachman, Green, and Wirtanen (1972) asserted that differences between dropouts and graduates that are apparent at the beginning of 10th grade (such as lower self-esteem and academic achievement) remain equal in magnitude after students have dropped out. In their view, the dropout problem is "exaggerated," and "there is little evidence that dropping out made matters worse" (p. 1).

Dropouts are a difficult population to study, and empirical research on dropouts has suffered from a number of limitations (Pallas, 1986). We have little concrete evidence from rigorous empirical studies that dropouts have a "social disability" that extends into adult life or that the act of dropping out necessarily leads to negative personal and social experiences. Therefore, several authors have called for more research on the consequences of dropping out. Rumberger (1987) has noted that "the consequences of dropping out deserve more attention from researchers and policy analysts" (p. 116). Natriello, Pallas, and McDill (1986) argued more forcibly:

> There is a clear need for research on the consequences of dropping out of high school. We know rather little about either the economic or social consequences of dropping out . . . In order to do this, we need detailed information on the experiences and characteristics of dropouts before they left high school, as well as data on their labor market experiences, cognitive performance, and attitudes and behaviors after leaving school. The High School and Beyond (HS&B) data are by far the best available for this purpose (p. 175).

The present study addressed the gap in the research literature and assessed the consequences of dropping out by using the HS&B data base to examine the relationship of dropping out to the subsequent personal, social, and labor market experiences of a national sample of American youth over 6 years. The experiences of dropouts were compared with those of peers who finished high school but did not obtain further education.

The major questions addressed by the study were the following:

1. What were the basic differences between dropouts' and graduates' background characteristics at the time of the first HS&B survey in 1980 when both groups were sophomores? To assess the consequences of dropping out, one must determine initial differences between dropouts and their peers relative to background factors found significant by previous research. Therefore, this study examined the differences between dropouts and graduates on basic background characteristics such as sex, race, SES, academic achievement, urbanicity, geographic region, and 1980 self-esteem.

2. How did the personal, social, and economic experiences of those who remained dropouts in 1986 differ from the experiences of high school graduates? This study examined the differences, at the time of the third follow-up survey, between dropouts' and graduates' 1986 self-esteem, alcohol use, political/social participation, work satisfaction, salary of current job, periods of unemployment between June 1982 and July 1986, and number of jobs from 1982 to 1986.

Those variables, derived from questions on the 1986 third follow-up survey, presented approximate measures of a young adult's success in adjusting to adult roles and in making the critical transition from adolescence to adulthood. In the remainder of this article, we refer to the seven variables as the "transition-adjustment" indicators. We examined the simple differences between the two groups on the indicators prior to a more complex analysis.

3. When basic background characteristics are controlled, does dropping out explain differences in dropouts and graduates on the transition-adjustment indicators? For example, holding constant such factors as race, urbanicity, geographic region, academic achievement, and

SES, does dropping out affect later self-esteem or alcohol consumption? Does it significantly affect political/social participation or labor market experiences?

Method

Subjects

The HS&B survey involved a two-stage sampling design in which over 30,000 sophomores from more than 1,000 high schools were surveyed in the spring of 1980. Students who dropped out, as well as those who continued their education, were followed in the subsequent surveys of 1982, 1984, and 1986. The subjects for the present study were obtained from those participating in each wave of the HS&B surveys. Over 800 of the 1980 sophomores remained dropouts in 1986 and participated in the base-year and all three follow-up surveys. In addition, over 10,000 high school graduates participated in all waves of HS&B.

Dropout status was determined by those who reported having dropped out in the 1986 survey (TY18) and those whose dropout status was confirmed by a HS&B variable that searched second and third follow-up survey data for highest level of education attained (EDATTAIN). Only those whose dropout status was confirmed by both variables were included. Also excluded from the analysis were those who reported having obtained an equivalency certificate after 1982, those who reported being enrolled in an equivalency program in 1986, or those who were currently working toward a high school diploma in 1986. (Approximately half of the dropout population had obtained a diploma or an equivalency certificate or had enrolled in an equivalency program by the time of the third follow-up survey in 1986).

Wehlage and Rutter (1986) indicated that differences in background and personal characteristics are greatest between dropouts and those graduates who pursue postsecondary education. Therefore, comparisons that focus on dropouts and the overall population of high school graduates may distort the actual impact of dropping out (Bachman et al., 1972). To eliminate any such effect, we focused our analyses on two groups of subjects: (a) those who graduated with their high school class in 1982 but did not have any postsecondary experience at the time of the third follow-up survey and (b) those who entered high school with the class of 1982, who dropped out prior to 1982, and who remained dropouts at the time of the third follow-up survey. Coombs and Cooley (1968) used a similar technique when they compared dropouts and a "control" group of graduates with no postsecondary education.

Postsecondary status was determined by self-reports on the second and third follow-up questionnaires (HS&B variables SY15 and TY20). The HS&B data contain weights that adjust for unequal probabilities of being selected in the sample. Certain policy-relevant minorities (e.g., Hispanics) were oversampled in the original survey to ensure adequate numbers for analysis. Those weights also adjust for nonresponse and, when used appropriately, result in an unbiased estimate for the population of 3,800,000 high school sophomores in 1980 (Pallas, 1986; Peng, 1983). In this study, we used a modified version of the weights (Coladarci & McIntire, 1988). Respondents' HS&B weight (PANELWT4) was divided by the weight's mean, thus adjusting for oversampling and nonresponse rate while preserving the original sample size. When both self-report and educational attainment variables are considered, the pool of subjects for the present study becomes 2,048 for 1982 graduates without postsecondary education and 587 for dropouts.

In addition to the oversampling of policy-relevant minorities, the HS&B sampling procedure differed from a simple random sample because it involved a two-stage sampling technique—first sampling schools and then students within the selected schools. Researchers must, therefore, consider that the sampling errors calculated in the usual manner are likely to distort tests of statistical significance (Marsh 1989, 1990; Sebring, Campbell, Glusberg, Spencer, & Singleton, 1987). To compensate for this distortion (design effect), researchers may recalculate the standard error by obtaining a measure of the efficiency of the estimate relative to that of a true random sample and then adjusting in subsequent analyses. In our analyses, we used the approach of Barro and Kolstad (1987) that allowed for a design effect of 1.6; therefore, t values of 2.5 were required for significance at the .05 level.

Variables

The primary independent variable in our study was dropout status. The other independent variables in the study represented basic background factors identified through previous research as influencing dropout behavior. Those variables were gender, race, urbanicity, high school geographic region, academic achievement, SES, and 1980 self-esteem.

The transition-adjustment indicators were derived from questions on the HS&B third follow-up survey. The survey was thoroughly examined for possible measures of the personal, social, and economic consequences of dropping out. A variety of composite variables were constructed, and their reliability was assessed. Several composite measures (e.g., the HS&B work-orientation and family-orientation variables) were rejected because of inadequate reliability. Only measures with a reliability greater than .50 were used in our analyses. The dependent measures were (a) 1986 self-esteem, (b) alcohol use, (c) work satisfaction, (d) salary, (e) periods of unemployment, and (f) number of jobs. All background and transition-adjustment measures are described in detail in the Appendix.

For political/social participation variables, respondents' answers to 25 questions on the HS&B third follow-up survey were factor analyzed to reduce the number of potential dependent variables and to determine the underlying constructs of those items. A factor analysis revealed seven factors that became the dependent measures in the subsequent regression analyses. Results of the factor analysis are shown in Table 1.

Research Design

As noted above, in this study we examined differences in 1980 between dropouts and graduates relative to basic background variables identified through previous research as significant factors in dropout behavior. We also investigated the differences between dropouts and graduates relative to transition-adjustment measures such as self-esteem, alcohol use, and political/social participation variables. Finally, we examined differences in the transition-adjustment variables that could be attributed to the act of dropping out independent of the influence of background characteristics.

Table 1.—Results of Factor Analysis on Political/Social Participation Items

Cluster and item	Factor loading
Political activity (16.1)[a]	
Work to help candidate	.810
Go to social/political gatherings	.757
Give money to candidate	.671
Campaign for candidate	.511
Join political club	.486
Officer of political party	.435
Voting behavior (8.3)	
Voted in election between 3/1/84 and 2/1/86	.921
Voted in 1984 presidential election	.904
Registered to vote	.836
Political discussions (7.4)	
Discuss political problems with friends	.796
Discuss political problems with family	.783
Discuss political problems with coworkers	.770
Discuss political problems with community leaders	.422
Social-group participation (6.8)	
Join educational organization	.640
Join community, social action group	.586
Join volunteer work group	.473
Join service organization	.472
Hobby club participation (4.7)	
Literary or art club	.623
Social, hobby, or garden club	.608
Other volunteer group or club	.571
Sports-club participation (4.4)	
Join sports club	.646
Join youth club or little league	.594
Church or trade organization (4.2)	
Participate in church activity	.621
Discuss political problems with community leaders	.422
Participate in union, trade, or farm organizations	.498

[a]Percentage of variability among 25 items that are explained by factor.

Crosstabular analyses were used to compare groups on sex, race, urbanicity, and geographic region. For SES, academic achievement, and base-year self-esteem, we compared groups with simple linear regression.

For the second question of the study, we used simple linear regression to determine differences between dropouts' and graduates' 1986 status regarding self-esteem, alcohol use, political/social participation, work satisfaction, salary, periods of unemployment, and number of jobs. Those items were the dependent variables in the regression analyses, and dropout status was the independent variable.

To separate the effects of basic background characteristics from the effect of dropout status on transition-adjustment indicators, we needed a third analysis. We used multiple-regression analysis to determine the effect of dropping out on the transition-adjustment indicators while controlling for the influence of basic background characteristics. Dependent variables in the analyses were the same as with the simple regression analyses. Those were regressed on the dropout status variable and on basic background factors. In addition, several researchers (Barro & Kolstad, 1987; Fine, 1986; Fine & Rosenberg, 1983; Pallas, 1986; Peng, 1983; Rumberger, 1983) have found differences in the postschool experiences of male and female dropouts. Regression analyses were, therefore, run separately for males and females.

Results

Differences in Basic Background Characteristics

Comparisons of dropouts and graduates on race, sex, geographic region, and high school urbanicity are shown in Table 2. Crosstabular analysis revealed significant differences between the two groups on all variables except sex. Dropouts were more likely to be Hispanic, from the South or West, and from urban areas. Graduates were more likely to be White, from the Northeast, and from suburban or rural areas. Those results are consistent with previous findings (Barro & Kolstad, 1987; Pallas, 1986; Peng, 1983; Rumberger, 1983). No significant differences were found relative to numbers of males and females in the sample. Categorical variables, such as race and geographic region, were recoded (see Appendix) and entered into the regression analyses with urbanicity, SES, and achievement test scores.

A comparison of dropouts' and graduates' 1980 achievement test scores, SES, and base-year self-esteem scores is shown in Table 3. Dropouts had significantly lower scores than did graduates on SES and achievement

Table 2.—A Comparison of Dropouts and Graduates on Race, Sex, School Urbanicity, and High School Region

Category	Graduates (%)	Dropouts (%)
Race		
Hispanic	70.2	29.8
Black	77.1	22.9
White	80.0	20.0
Sex		
Male	77.6	22.4
Female	77.9	22.1
Geographic region		
Northeast	85.9	14.1
North Central	77.9	22.1
South	76.2	23.8
West	68.7	31.3
Urbanicity		
Urban	68.5	31.5
Suburban	80.4	19.6
Rural	79.4	20.6

Note. Total number of graduates equaled 2,048. Total number of dropouts equaled 587. However, the actual number of cases varied slightly depending upon analysis.

Table 3.—A Comparison of Graduates and Dropouts on Achievement Test Scores, SES, and Base-Year Self-Esteem

	Graduates		Dropouts	
Measure	*M*	*SD*	*M*	*SD*
Achievement	45.97	7.02	42.84*	5.83
SES	−0.36	0.61	−0.56*	0.58
Self-esteem	19.18	3.29	19.05	0.17

Note. Achievement test scores ranged from 28.50 to 74.25; SES scores ranged from −2.658 to 2.184; self-esteem scores ranged from 6 to 30.
*Significant difference between groups at the $p < .05$ level.

test scores. Those results are also consistent with previous research (Bachman et al., 1972; Coombs & Cooley, 1968; Ekstrom et al., 1986; Peng, 1983; Rumberger, 1983). Although dropouts have traditionally been considered as having low self-esteem (Cervantes, 1965; Coombs & Cooley, 1968), we found no significant differences in base-year self-esteem in this analysis.

Differences Between Dropouts and Graduates on Transition-Adjustment Indicators

Basic descriptive statistics for the transition-adjustment indicators are shown in Table 4. The number of items and the scale for each measure are reported along with means and standard deviations. (Note that for political/social participation measures, factor scores were calculated such that $M = 0$ and $SD = 1$.) The reliability for the transition-adjustment indicators ranged from .67 to .89, thus falling within the moderate-to-high range, depending on the measure in question.

Results for both simple differences between dropouts and graduates, as well as differences with background factors statistically controlled, are shown in Table 5. Because the dropout variable was dummy coded (0 = graduate, 1 = dropout), unstandardized regression coefficients in Table 5 represent the mean difference between dropouts and graduates on the measure in question. For example, *b* for the 1986 self-esteem measure was .08, indicating that the mean score for dropouts was roughly one tenth of a point higher than graduates' mean score. (A negative *b* value indicates that graduates had the higher mean score.)

As can be seen from an examination of Table 5, no significant differences in 1986 self-esteem were evident even when background factors were statistically controlled. Given the generally strong societal sanctions against dropping out and the stereotypical view of a dropout as a "loser," we were surprised that there were no significant differences in self-esteem. Nevertheless, the finding is consistent with some previous research (Ekstrom et al., 1986; Wehlage & Rutter, 1986).

Dropouts, however, scored significantly higher in their alcohol consumption. Differences in alcohol consumption were a male phenomenon, however; in both analyses only male dropouts were significantly different from their peers who graduated. No significant differences were found between female dropouts and female graduates. Although measures of alcohol use, without a complementary measure of its effects on an individual's life, must be interpreted with caution (Pattison & Kaufman, 1982), the quantity of alcohol consumed may be one indicator of problem drinking and, hence, poor overall social adjustment in male dropouts.

In another area of transition-adjustment, dropouts and graduates differed in their political/social involvement. Also, some differential patterns of male and female involvement were noted. Graduates were significantly more likely to vote, and that difference was found for both males and females, regardless of whether background factors were controlled. Similarly, both male and female graduates were more likely to participate in political discussions, and that difference was not accounted for by the background factors in the regression analyses. As is evident from Table 5, however, differences in involvement with church/trade organizations were found only between male dropouts and graduates. On the other hand, female graduates were more likely to participate in sports-club activities, but no differences were found between male groups on this transition-adjustment measure. No significant differences were found for either group on social-group or hobby-club participation. In all cases where significant differences were found, graduates

Table 4.—Descriptive Statistics for Transition-Adjustment Indicators

Measure	Number of items	Scale	Alpha reliability	*M*	*SD*
Self-esteem (Scale 6 to 30)	4	6 to 30	.67	19.44	2.64
Alcohol use (Scale 6 to 30)	5	6 to 30	.86	11.78	7.09
Unemployment (0 to 43 months)	43	0 to 43 months	—	3.81	6.12
Number of jobs (Scale 0 to 8)	8	0 to 8 or more	—	3.15	1.53
Work satisfaction (Scale 12 to 48)	12	12 to 48	.89	35.76	6.05
Salary ($ per hour)	—	$ per hour	—	5.90	3.01

Note. All measures are described in more detail in the Appendix.

Table 5.—Transition-Adjustment Indicators Regressed on Dropout Status: Uncontrolled Differences and Differences With Background Factors Controlled

Dependent measure	Uncontrolled		Controlled[a]	
	Male	Female	Male	Female
Self-esteem	0.08	−0.07	0.35	0.15
Alcohol use	2.38*	−0.12	3.03*	0.02
Political activity	0.06	−0.12	0.00	−0.14
Voting behavior	−0.27*	−0.34*	−0.21*	−0.35*
Political discussions	−0.30*	−0.33*	−0.30*	−0.25*
Social group participation	0.06	0.03	−0.02	0.07
Hobby club participation	0.00	−0.03	0.10	−0.05
Church/Trade organization	−0.26*	−0.06	−0.24*	−0.07
Sports club participation	−0.08	−0.21*	−0.13	−0.21*
Unemployment	1.63*	1.38*	1.47*	0.97
Number of jobs	0.47*	−0.34*	0.55*	−0.32*
Work satisfaction	−0.74	−1.63*	−0.94	−1.60*
Salary	−0.35	−0.65*	−0.24	−0.38

Note. All values represent unstandardized regression coefficients. Because the dropout status variable was dummy coded (0 = graduate, 1 = dropout), those values also represent the mean difference between dropouts and graduates.
[a]Background factors were SES, achievement test score, ethnicity/Black, ethnicity/Hispanic, urbanicity, and geographic region.
*Significant at the .05 level.

were more likely than dropouts to be politically/socially involved.

everal differences were found in dropouts' and graduates' adjustments to the world of work. In both analyses, male dropouts experienced significantly more unemployment than graduates. But, when background factors were considered, no significant differences were found between female dropouts and graduates. Differences found in the earlier analysis were apparently caused by the influence of factors such as race, SES, or urbanicity, rather than dropout status.

As is evident from Table 5, differences existed between female dropouts and graduates in their satisfaction with work. Even with background factors controlled, female graduates scored approximately 1½ points higher on the work satisfaction scale. However, no significant differences were found between male dropouts and graduates.

Distinct differences emerged between males and females in terms of their number of jobs. In both controlled and uncontrolled analyses, male dropouts had significantly *more* jobs than did male graduates, whereas female dropouts had significantly *fewer* jobs than female graduates did. Speculation on the reasons for such differences between the experiences of males and females is reserved for the next section.

As shown in Table 5, no significant differences in wages were evident between male dropouts and male graduates, even with basic background factors controlled. Female graduates earned, on average, 65¢ an hour more than female dropouts did; this difference decreased to 38¢ an hour when background factors were considered, indicating that initial differences were partly caused by preexisting differences between groups in factors such as urbanicity, SES, and prior academic achievement.

Discussion

The High School and Beyond data base provides a wealth of data on public school dropouts. For example, in this study, the responses of nearly 600 dropouts who participated in all four waves of the HS&B survey were analyzed. Each survey consisted of nearly 100 items. For the individual researcher seeking longitudinal data on this relatively inaccessible population, the HS&B data source provides a richer base of information than has previously been available. Nevertheless, the HS&B data set does contain some limitations.

The HS&B survey's base year sampling involved high school sophomores. Some researchers (Barro & Kolstad, 1987; Pallas, 1986) have argued that the overall HS&B dropout rate of approximately 14% underestimates the "true" dropout rate by 4% to 7%. The young men and women dropping out before the 10th grade may represent a "hard core" group of youth whose postschool experiences are considerably more negative than those of the group of dropouts in the present study. One must, therefore, be cautious in generalizing the results of this study to the total population of dropouts. In addition, because the third follow-up survey involved the mailing of questionnaires and, in some instances, telephone interviews, nonrespondent dropouts may have differed from those included in the third follow-up survey. The nonrespondents could have been homeless or transient; therefore, the dropouts in HS&B may be of slightly higher SES than the "true" overall population of dropouts. Although considerable care was taken in accounting for nonresponse bias (see Jones, Sebring, Campbell, & MacArthur, 1986, for a more detailed discussion of nonresponse bias in HS&B), and the "magnitude of biases generally were small" (Jones et al., p. C5) in all waves of the HS&B survey, some differences between dropouts and graduates in their postschool experiences may be underestimated in this study.

Examining the reliability of composite variables was an important feature of this study because many of its composite items dealt with relatively subjective experiences of dropouts and graduates and were based on self-reports. In this study, we used only composites with a reliability greater than .50. Yet, some self-report error was noted, even on such factual items as wages, hours of work per week, and nature of work. In examining responses on work experiences, we noted that some clearly implausible answers were given (e.g., a secretary reporting a wage of over $75 per hour).

A final limitation must be noted relative to measurement error and the interpretation of differences between groups on the dependent measures. The measures of personal and social adjustment used in this study are clearly imperfect; for example, the study's self-esteem measure comprised only six items, whereas some standardized self-esteem measures (e.g., the Piers-Harris) include as many as 80 items. Similarly, the alcohol-use composite yielded an approximate measure of dropouts' and graduates' alcohol consumption. It yielded no measure of the actual *effects* of alcohol consumption, and some authors (Rohan, 1982) have considered this essential to any determination of alcohol abuse problems. In addition, determination of the practical importance, beyond statistical significance, of differences between dropouts and graduates on those measures is problematic.

For those reasons, the results of this study must be interpreted with caution. Nevertheless, the data source has allowed a more careful and systematic exploration of the personal, social, and economic consequences of dropping out than has previously been possible.

Results indicated that the experiences of dropouts and graduates differed in many respects. But, contrary to the conventional view of dropouts, no significant differences were found relative to self-esteem. That finding, although perhaps surprising, is consistent with previous research (Ekstrom et al., 1986; Wehlage & Rutter, 1986). The results of this study support the contention that low self-esteem is not necessarily a character trait of dropouts or part of a "social disability."

On other personal and social measures, however, dropping out appears to lead to negative consequences. Male dropouts consumed significantly more alcohol than did graduates, and, in a society growing increasingly concerned with the negative consequences of substance abuse, both to the individual and to society, this finding is troubling. In addition, results indicated that dropping out negatively affects involvement in some political processes. Both male and female dropouts were less likely to vote or to participate in political discussions. Further, male dropouts were less likely than graduates were to participate in church organizations, and female dropouts were less likely than graduates to participate in sports clubs or activities. Our findings lend support to the concern that dropping out may result both from an alienation from adult norms and values as well as contribute to an alienation from society at large. Our results also raise the concern that dropping out has a deleterious effect on later citizenship practices and participation in democratic society.

Analysis of dropouts' and graduates' labor market experiences indicated that male dropouts experienced more periods of unemployment. Female dropouts reported more unemployment than did female graduates, but results indicated that the difference was caused by factors such as race, urbanicity, and SES rather than by dropout status. Female dropouts reported less work satisfaction than female graduates did, but surprisingly, no significant differences in job satisfaction were found between male dropouts and male graduates. In general, results on dropouts' and graduates' labor market experiences are consistent with other research (Levin, 1985; U.S. Depart-

ment of Education, 1988), indicating that dropouts experience more unemployment and have less secure and satisfying work than do graduates.

Findings relative to respondents' number of jobs are somewhat puzzling. Male dropouts reported having more jobs than did graduates, and that finding is consistent with the traditional view of dropouts' having less secure employment and perhaps moving rapidly from one dead-end job to another. But, female *graduates* had a significantly greater number of jobs than did female dropouts; to some degree that finding is counterintuitive. Because female dropouts reported less job satisfaction, one might assume that they change jobs more frequently and have a greater number of jobs than do graduates. But, pregnancy is often cited as a reason for dropping out of school (Ekstrom et al., 1986; Peng, 1983), and one might suspect that many of the female dropouts do not enter the labor market, which would explain why graduates report more jobs. The above interpretation is somewhat consistent with the finding that female dropouts experienced more unemployment than female graduates did, although a significant difference did not sustain when background factors were controlled. Nevertheless, more research on the labor market experiences of female dropouts is needed to satisfactorily explain those results.

Relative to salary of current job, no significant differences were found between male dropouts and graduates. A significant difference was found between female dropouts and graduates, but that difference was a result of background factors such as urbanicity, prior academic achievement, and SES, rather than dropout status. Although these results are compatible with other investigations of dropouts using HS&B (Chan-Kopka, personal communication, January 9, 1989; Stern & Il-Woo, 1989), they run counter to most of the other documentation concerning the economic shortfall of dropping out. As mentioned earlier, Catterall (1985) estimated that male graduates earn $266,000 more over their lifetimes, and that female graduates earn $199,000 more, than dropouts do. Other authors have estimated a 1.47 ratio of earning of graduates to dropouts (Lewis, Bruininks, Thurlow, & McGrew, 1988).

Those studies have, however, compared dropouts with the overall population of graduates with postsecondary education. In addition, the time span covered by this study was relatively short for the economic disadvantages of dropping out to become apparent. Respondents were approximately 16 years old in 1980 and 22 years old in 1986 at the time of the HS&B third follow-up study. A fourth follow-up study using that cohort is planned (Owings, personal communication, January 9, 1989), and differences in earnings between dropouts and graduates may then become evident. The view that dropouts may be stuck in "dead-end" jobs is lent some support by the experiences of the HS&B cohort in this study, because 32.7% of the graduates reported receiving training on their current job, as opposed to 25.7% of the dropouts. The lack of significant differences between male dropouts and graduates is disturbing, however, because one of the consistent arguments for staying in school is an economic one. The force of that argument may be lessened for potential dropouts as they see that many of their peers who dropped out are making as much money as those who recently graduated.

Conclusion

The results of this study are probably best viewed as exploratory, charting a course for further reflection and research on the dropout problem. More longitudinal assessments of all aspects of this study are indicated. Although the timespan of this study did include a critical period of adjustment for adolescents, it was still limited to 4 years after projected date of graduation. Further research using longitudinal data collected over a greater timespan would help to clarify the impact of dropping out on self-esteem, social adjustment, political participation, and other related factors. Because the National Education Longitudinal Study of 1988 (NELS:88), the latest longitudinal study by the National Center for Education Statistics using a large sample of American youth, begins with eighth graders, it should provide a rich source of information for studying public school dropouts (Rasinski & West, 1990).

Research on early intervention and the causes of dropout behavior could also help to clarify the actual consequencs of dropping out. The causes and consequences of dropping out are interrelated and often difficult to discern (Pallas, 1986). For example, the difference in alcohol consumption between male dropouts and graduates is difficult to interpret without a base year measure of alcohol consumption. Did drinking more alcohol lead students to drop out of school, or was it a *consequence* of dropping out? Careful and systematic research that involves the early identification of "at-risk" children and follows both their progress through school and their adjustments to postschool life would clarify not only the effects of early intervention but also the consequences of dropping out.

All the findings of this study lend themselves to further research with different samples. Our results underscored the need to be careful in making assumptions about the young people who drop out of school. For example, the stereotypical view of the dropout as having low self-esteem was contradicted by our findings. Similarly, dropouts did not seem to meet with the dire economic consequences so often predicted as resulting from dropping out.

Therefore, in mounting a dropout prevention campaign, or in counseling individual students, practitioners and policymakers must be cautious about either reinforc-

ing a sense of failure or overstating the "disastrous" consequences of dropping out. Although this may appear self-evident, it is all too easy, with the best of intentions, to place an additional burden of shame and self-doubt on young adults as they begin the transition to the adult world. We do not advocate that dropout prevention campaigns should be eliminated; rather, to be credible, they need to remain in touch with the realities of the youngster who is considering dropping out.

Our findings did raise concerns about the negative personal and societal consequences that result from dropping out. The finding that male dropouts consume greater amounts of alcohol is troubling. Although caution must be exercised in generalizing that result to the assumption of a greater incidence of alcoholism, the problems associated with substance abuse are serious and substantial. Our findings indicating that dropouts vote less frequently and are less likely to participate in social and political activities are also troubling. Those findings reinforce the concern, voiced by Levin (1985), among others, that dropouts may represent a growing underclass that is becoming increasingly alienated from our democratic way of life.

The findings of this study on wages do not support the view that dropouts are faring poorly relative to those who graduate but do not go on to postsecondary education. Nevertheless, the present study covered a limited time period, and there were some indications that dropouts' labor market experiences were more negative: Male dropouts experienced more periods of unemployment, and female dropouts experienced less work satisfaction than graduates. Dropouts were also less likely to receive on-the-job training.

In summary, the results of this study lend support to concerns over the postschool experiences of those who drop out of school, although obviously many dropouts make a successful adjustment to the adult world. Further research on postsecondary education patterns, labor market experiences over a longer timespan than was possible in this study, and other postschool experiences of dropouts is clearly necessary. In this study, we examined the impact of leaving school prematurely on personal and social adjustments to the adult world and to our democratic society. We encourage educational researchers and policymakers to consider pedagogy from this broader perspective; education, in its truest sense, is a lifelong activity and is not confined to 12 years of public schooling. As we have seen in this study, dropping out of school may have serious consequences, but surely, dropping out of education is the greater tragedy.

APPENDIX

Dropout. Dropout status, the primary independent variable, was defined as a student who left high school before graduating and, as of 1986, had not received a Graduate Equivalency Diploma (GED) or taken any classes toward a high school diploma or GED. In contrast, a high school graduate was defined as a student who graduated with the class in 1982 but had not attended any postsecondary school by 1986. The dropout variable was coded 0 (graduate), 1 (dropout).

Self-esteem. The self-esteem scale comprises respondents' answers to the following items: I take a positive attitude toward myself (TY61A), I feel I am a person of worth, on an equal plane with others (TY61C), I am able to do things as well as most people (TY61J), and I do not have much to be proud of (TY61L). Responses to this last item were recoded so that high scores indicated positive self-esteem (alpha reliability = .67).

Alcohol Use. The HSB third follow-up questionnaire contains five items relating to alcohol use: (a) How many days in the past month did you drink an alcoholic beverage? (TY62), (b) On how many days did you have six or more drinks? (TY63), (c) On the day that you had fewest drinks, how many did you have? (TY64A), (d) On the day that you had the most drinks, how many did you have? (TY64B), and (e) What is your average number of drinks per day? (TY64C). A composite variable of the five items was constructed, and its reliability assessed. The most reliable composite was based on items b, d, and e above, and, consequently, those items were used to construct the alcohol-use variable (alpha reliability = .86)

Political/Social Participation. Twenty-five social/political participation items were factor analyzed, resulting in seven orthogonal factors. *Political Activity:* The respondent's reported level of participation in working to help a candidate (TY556), going to social-political gatherings (TY55F), giving money to candidates (TY55E), campaigning for a candidate (TY55D), joining a political club (TY59C), and becoming an officer of a political party (TY55H). *Voting Behavior:* Whether the respondent voted in an election between March 1, 1984, and February 1, 1986 (TY57), voted in the 1984 presidential election (TY58), or is registered to vote (TY56). *Political Discussions:* Whether the respondent had discussed political problems with friends (TY55A), family (TY55B1), coworkers (TY55B2), or community leaders (TY55B3). *Social/Group Participation:* Whether the respondent had joined educational organizations (TY59J), community or social action groups (TY59E), volunteer work groups (TY59F), or a service organization (TY59K). *Hobby, Club Participation:* Whether the respondent had joined a literary or art club (TY59I), a social, hobby, or garden club (TY59C), or a voluntary group (TY59L). *Sports Club Participation:* Whether the respondent had joined a sports club (TY59H) or a youth club, or little league (TY59A). *Church or Trade Organizations:* Whether the respondent had participated in church activities (TY59D); discussions of political problems with community leaders (TY55B3); or in union, trade, or fun organizations (TY59B).

Work Satisfaction. Participants were asked in the third follow-up survey to rate their satisfaction with 12 aspects of their most recent job. The items pertained to the pay and fringe benefits, importance and challenge, working conditions, opportunity for advancement with the employer, opportunity for advancement with the job, opportunity to use past training, security and permanence, satisfaction with supervisor, opportunity to develop new skills, job-related respect from family and friends, relationship with co-workers, and the job as a whole (TY14A to TY14L). Respondents rated those items on a Likert scale ranging from *very dissatisfied* (1) to *very satisfied* (4) (alpha reliability = .89).

In addition to the measures of personal/social adjustment, three measures of labor market experiences were used: salary, periods of unemployment, and number of jobs.

Salary. Both dropouts and graduates were asked to report their current salaries at the time of the third follow-up survey in 1986 (TY8HA). All reported wages were converted to an hourly scale. To eliminate obvious misreports and errors, we compared the hourly wages with individuals' occupations (TY8A) and eliminated implausible salaries (e.g., a secretary reporting an hourly wage of $75).

Periods of Unemployment. Respondents to the second and third follow-up surveys were asked to report their employment status for each month from June 1982 to July 1986 (SY55A82A to SSY55A84B; TY17A84C to TY17A86G). A composite variable was constructed that reflects the total number of months for which unemployment was reported. A high score on the measure (scale of 0 to 43) reflects more periods of unemployment.

Number of Jobs. Respondents to the second and third follow-up surveys also were asked to indicate the number of jobs that they held between June 1982 and March 1986 (up to eight jobs; SY46A, SY47A,

SY48A, SY49A, TY8A, TY9A, TY10A, and TY11A). (A high value on this variable reflects a greater number of jobs during that period.)

We used six additional independent variables in our analyses: *sex*: 1 (male), 2 (female); *race*: (a) Hispanic or Spanish, (b) American Indian, (c) Asian, (d) Black, (e) White, and (f) other (for the multiple-regression analyses, the small numbers of American Indian and Asian respondents were eliminated and two dummy-coded variables [Race/Black: 1 = Black; 0 = otherwise. Race/Hispanic: 1 = Hispanic; 0 = otherwise] were inserted in the regression equation as independent variables); *socioeconomic status*: a composite of (a) father's occupation, (b) father's education, (c) mother's education, (d) family income, and (e) material possessions in the household; *academic ability*: base-year achievement test scores in reading, vocabulary, and mathematics; *urbanicity*: Whether the respondent's high school is urban, or central city, suburban, in a standard metropolitan statistical area (SMSA), or rural, not in a SMSA; *geographic region*: New England and Mid-Atlantic states, East North Central and West North Central states, South Atlantic, East South Central, and West South Central states, West Mountain and Pacific states (for the multiple-regression analyses, that variable was recoded to reflect differences between dropouts and graduates that were evident from crosstabular analysis. The recoding was done such that 1 = South or West; 0 = otherwise).

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REFERENCES

Bachman, J., Green, S., & Wirtanen, I. (1972). Dropping out is a symptom. *Education Digest*, 37, 1-5.

Barro, S. M., & Kolstad, A. (1987). *Who drops out of high school? Findings from High School and Beyond.* (Contractor Report OE 300-83-0256). Washington, DC: Center for Education Statistics.

Beck, L., & Muia, J. A. (1980). A portrait of a tragedy: Research findings on the dropout. *The High School Journal, 64*(2), 65-72.

Bryk, A. S., & Thum, Y. M. (1989). The effects of high school organization on dropping out: An exploratory investigation. *American Educational Research Journal, 26*(3), 353-383.

Catterall, J. S. (1985). *On the social costs of dropping out of school.* (Report No. 86-SEPI-3). Stanford, CA: Stanford University, Center for Educational Research.

Cervantes, C. F. (1965). *The dropout: Causes and cures.* Ann Arbor, MI: University of Michigan.

Coladarci, T., & McIntire, W. G. (1988). Gender, urbanicity, and ability. *Research in Rural Education, 5*(1), 13-15.

Coombs, J., & Cooley, W. W. (1968). Dropouts: In high school and after high school. *American Educational Research Journal*, 5, 343-363.

Ekstrom, R. B., Goertz, M. E., Pollack, J. M., & Rock, D. A. (1986). Who drops out of high school and why? Findings from a national study. in G. Natriello (Ed.), *School dropouts: Patterns and policies* (pp. 89-105). New York: Teacher's College Press.

Fine, M. (1986). Why urban adolescents drop into and out of public high school. In G. Natriello (Ed.), *School dropouts: Patterns and policies* (pp. 52-69). New York: Teachers College Press.

Fine, M., & Rosenberg, P. (1983). Dropping out of high school: The ideology of school and work. *Journal of Education, 165*(3), 257-272.

Finn, J. R. (1989). Withdrawing from school. *Review of Educational Research 59*(2), 117-142.

Jones, C. C., Sebring, P. A., Campbell, S., & MacArthur, H. (1986). *Two years after high school: A capsule description of the 1980 sophomores.* (Contractor Rep. OE-300-82-0273). Washington, DC: Center for Educational Statistics.

Levin, H. M. (1985). *The educationally disadvantaged: A national crisis.* (The State Youth Initiatives Project, Working Paper No. 6). Philadelphia, PA: Public/Private Ventures.

Lewis, D. R., Bruininks, R. H., Thurlow, M., & McGrew, K. (1988). Using benefit-cost analysis in special education. *Exceptional Children, 55*(3), 203-214.

Mann, D. (1986). Can we help dropouts? Thinking about the undoable. In G. Natriello (Ed.), *School dropouts: Patterns and policies* (pp. 3-19). New York: Teachers College Press.

Marsh, H. W. (1989). Effects of attending single-sex and coeducational high schools on achievement, attitudes, behaviors, and sex differences. *Journal of Educational Psychology, 81*(1), 70-85.

Marsh, H. W. (1990). Influences of internal and external frames of reference on the formation of math and English self-concepts. *Journal of Educational Psychology, 82*(1), 107-116.

National Dropout Prevention Center. (1987). *Dropout prevention: Addressing a national crisis.* Clemson, SC: Author.

Natriello, G., Pallas, A. M., & McDill, E. L. (1986). Taking stock: Renewing our research agenda on the causes and consequences of dropping out. In G. Natriello (Ed.), *School dropouts: Patterns and policies* (pp. 168-178). New York: Teachers College Press.

Ordovensky, P. (1986, June). Dropouts discover new hope. *USA Today*, pp. 1, 2.

Pallas, A. M. (1986). *The determinants of high school dropout.* (Report No. 364). Baltimore: Johns Hopkins University, Center for Social Organization of Schools.

Pattison, E. M., & Kaufman, E. (1982). The Alcoholism Syndrome. In E. M. Pattison & E. Kaufman (Eds.), *Encyclopedic Handbook of Alcoholism*, (pp. 3-30). New York: Gardner Press.

Peng, S. S. (1983). *High school dropouts: Descriptive information from High School and Beyond.* Washington, DC: National Center for Education Statistics.

Rasinski, K. A., & West, J. (1990). *Eighth graders' reports of courses taken during the 1988 academic year by selected student characteristics.* (Data Series: DR-NELS88-88-1.5). Washington, DC: National Center for Education Statistics.

Rohan, W. P. (1982). The concept of alcoholism: Assumptions and issues. In E. M. Pattison & E. Kaufman (Eds.), *Encyclopedic Handbook of Alcoholism*, (pp. 31-39). New York: Gardner Press.

Rumberger, R. W. (1983). Dropping out of high school: The influence of race, sex, and family background. *American Educational Research Journal, 20*(2), 199-220.

Rumberger, R. W. (1987). High school dropouts: A review of issues and evidence. *Review of Educational Research, 57*, 101-121.

Schreiber, S. (1964). *The school dropout.* Washington, DC: National Education Association.

Sebring, P., Campbell, B., Glusberg, M., Spencer, B., & Singleton, M. (1987). *High School and Beyond 1980 Sophomore Cohort Third Follow-Up (1986) data file user's manual.* Washington, DC: Center for Education Statistics.

Stern, D., & Il-Woo, P. (1989). *Comparing the labor market experience of Hispanic, White, and Black teenagers with and without high school diplomas.* Paper presented at the annual meeting of the American Educational Research Association, San Francisco, CA.

U.S. Department of Education. (1988). *Tenth annual report to Congress on the implementation of the Education of the Handicapped Act.* Washington, DC: Author.

Wehlage, G. G., & Rutter, R. A. (1986). Dropping out: How much do schools contribute to the problem? In G. Natriello (Ed.), *School dropouts: Patterns and policies* (pp. 70-88). New York: Teachers College Press.