Focusing on Second Chance Education: High School Completion among Dropouts

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Abstract
This article discusses factors related to eventual high school credentials among dropouts. Using the National Educational Longitudinal Study of 1988 (NELS:88/00), the current study found that approximately two-thirds of the sample of high school dropouts eventually attained some form of high school credentials within eight years of their class graduation. Results of multiple logistic regression analysis confirm that academic performance, socioeconomic status, and the grade level at the time of dropout were significantly related to eventual school completion among dropouts. Unique features of this study are regional differences in the rates of eventual high school completers among dropouts and the impact of hours spent doing homework and hours spent watching TV on degree attainment among dropouts. This study suggests that the dropout event should be understood as a part of normal life process for some students, instead of the end of an educational pursuit. These findings also serve to highlight the policy and research significance of the ultimate high school completion of dropouts in addition to existing prevention efforts.

Reducing the high school dropout rate and enhancing the graduation rate has become the focal point of educators, government officials, and parents for the last thirty years. The high dropout rate made public education reformation one of the most important educational issues in the 1980s and 1990s (Kominski, 1987; National Collaboration for Youth, 1989; Rumberger & Larson, 1998). In 1983, the National Commission on Excellence in

Education called for a reform of the nation's educational system and a renewal of the nation's commitment to high-quality education (National Commission on Excellence in Education, 1983). Despite the attention and efforts after the Commission's report, the data show limited gains in improving the high school completion rate over the past quarter of century (National Center for Education Statistics, 1993; U.S. Bureau of Census, 2000).

Dropout rates are calculated in a wide variety of ways. Calculating an accurate overall dropout rate is almost impossible, since definitions and counting methods vary. States and school districts, for example, use different grade levels or age groups for baseline population and at different time frames. Students' irregular patterns of enrollment such as frequent dropping out and returning to school make the calculation even more difficult. Some dropout students come back to school and successfully complete high school while some others get a General Educational Development (GED) certificate; a high school equivalency. As will be discussed, more than 65% of the initial dropouts completed high school either by means of returning to school or obtaining a GED. Though graduation from high school without interruption may be the best form of academic progress, it is equally important for youths, policy makers, and educators to find ways for these students to complete their high school education even after the initial drop out. Dropping out of school is not a permanent status but a revocable action. National samples indicated that about one in five high school students dropped out of school at least once, that the majority (68%) of dropouts had completed high school or were working on a degree, and less than one-third (32%) of dropouts had no credentials and were not pursuing any further education (Berktold, Geis, & Kaufman, 1998). Despite leaving school, 85% of the dropouts planned to attain at least a high school education (U.S. Department of Education, 1999).

The vast majority of the dropout research, however, focuses on the characteristics of dropouts without considering possible return of these initial dropouts. While the findings of these studies are helpful, they provide little indication of what should be done to attain high school credentials after youths drop out of school. In dealing with problems and solutions for dropout issues, researchers need to consider not only staying or dropping out of high school, but the flexibility allowed to students who try to complete a high school education even after their initial dropping out. Study of late completers of high school among dropouts could be an effective tool in reducing the final dropout rate, but unfortunately, only a handful of studies (i.e., Kaufman, 1988;

Tyler, 2003; Wayman, 2001) have been done in this area. It is worthwhile to investigate how some dropouts successfully complete a high school education while others do not.

There is disagreement with regards to factors related to school completion among dropouts (Berktold et al., 1998; Wayman, 2002). These included ethnicity, gender, and family factors. Few studies (i.e., Fulk, 2003; Reith & Polsgrove, 1994) have investigated the relationship between hours spent studying everyday and eventual degree attainment among dropouts. Furthermore, none of the studies considered the longitudinal survey period for a sufficient length of time to provide a complete picture of dropouts' educational attainment. Most of returning dropout studies had used the time span of two years after the rest of the cohort had graduated high school (e.g., Berktold et al.; Wayman, 2002). This time period seems inadequate since the average age of GED takers is 25 years old, eight years after most of the cohort had completed high school (American Council on Education, 1996). Furthermore, the typical study of dropouts has been very limited in sample size and has often not been representative of the broader national population (e.g., Wayman, 2002).

Dropping Out and Eventual School Completion

In national samples, a growing number of initial high school dropouts are reporting that they are obtaining a high school credential by earning the GED or diploma. The 1978 National Longitudinal Survey of Youth (NLSY78), for example, showed about 33% of dropouts eventually received high school degrees. The percentage increased to 38% in the 1982 High School and Beyond (HS&B) survey and 45% in the 1994 survey of the NELS (NELS:88/94) (Berktold et al., 1998). Recent research reported that more than half of those who drop out later resume and successfully completed their education (Boesel, Alsalam, & Smith, 1998).

Those who study returning dropouts posit that the increase in high school completers among dropouts has been due to an increase in dropouts passing the GED (Tyler, 2003). Research on the GED has shed light on the economic benefits of obtaining the GED (U.S. Department of Education, 1998). Some studies have examined the difference in characteristics between dropouts who received GEDs and those who remain dropouts (Chuang, 1997; Kaufman, 1988; Tyler, 2003; Wayman, 2001). Factors identified include achievement test scores, socioeconomic status (SES), educational aspirations, and age at

dropout (Kaufman, 1988; Tyler, 2003). SES was strongly associated with completing high school among dropouts (Berktold et al., 1998). Dropouts from families of high SES were more likely to complete high school, compared with dropouts whose families were of low SES. Academic performance before dropping out was a strong indicator of completing a diploma or GED among dropouts. In the NLES:88/94 study, for example, Berktold et al. (1998) found that about 49% of dropouts whose high school transcripts indicated a C average or better completed a diploma or alternative credential, compared with 36% of dropouts who had a D or F average earned a diploma or alternative credential.

Motivation or educational aspiration is considered to be a likely characteristic of dropout differences between completers and non-completers (Finn & Rock, 1997). Motivational differences result in different levels of preparation for and participation in classwork while in school and different levels of educational aspiration after dropping out. Some researchers point out that employment patterns before dropping out distinguish students who later complete high school from those who do not (Cao, Stromsdorfer, & Weeks, 1996; Entwisle, Alexander, & Olson, 2004). High school students who take a job outside of school might find that regular high school work is too difficult to be kept along with a job. They may drop out and enroll in a GED program, which in turn does not require strict attendance and everyday homework (Entwisle et al., 2004).

Years of high school education before dropping out were positively related to completing high school. Murnane, Willett and Boudett (1995) found that returning dropouts tend to have more years of high schooling than non-returning dropouts. This association between grade level at the time of dropping out and completion status is further demonstrated with respect to the number of credits earned in high school. Students who completed more than 15 credit hours were twice as likely to complete their high school education than youths who completed 10 or fewer credit hours (Berktold et al., 1998).

The purpose of this study is to investigate the determinants of the attainment of a high school credential among dropouts and the significance of this finding with respect to raising the high school completion rate. In particular, this paper seeks to answer the following questions: How many dropouts returned and earned a high school credential and how many do not? What factors distinguish dropouts who ultimately receive a high school

credential and those who remain dropouts? Can gender and ethnic background distinguish a dropout who later attains a credential from one who does not receive a credential? In order to overcome the limitations of the sample size and time frame, the National Educational Longitudinal Study of 1988 (NELS:88/00) was used for the analysis.

Method

Data

Data from the NELS:88/00 database conducted by the National Center for Education Statistics (NCES) in the Department of Education were used for the analysis. NELS:88 contains a nationally representative sample of U.S. students enrolled in eighth grade in 1988. Students were first interviewed in 1988, and then re-interviewed in 1990, 1992, 1994, and 2000. The sample also includes dropouts in 1990 (at the equivalent of 10th grade) and in 1992 (at the equivalent of 12th grade). Data from waves 1 - 5 of the NELS:88/00 contain 12,144 youths. There were 10,341 youths who have never dropped out of school and received their high school diploma by the end of 2000. There were 1,803 youths who dropped out of school at least once during the high school years. At the time the data were collected in 2000, 111 of these dropouts were either continuing to work on their high school diploma (20 youths), or pursuing a GED (91 youths). There were six youths whose status was unknown. The current research sample includes 1,686 dropouts, after excluding graduates who did not drop out, those who were working for the completion of high school or those who failed to answer. Among the 1,686 dropouts, 1,110 youths successfully completed high school education through either receiving a diploma (284 youths) or obtaining a GED (826 youths). The final dropouts (or permanent dropouts) are 576 youths who were neither working for nor ever attained a high school diploma or its equivalency. The total sample was composed of 822 males and 864 females. Among the dropouts, 998 were Caucasian, 225 were Black, 367 were Hispanic origin, 39 were American Indian or Alaskan Native, 37 were Asian or Pacific Islanders, and 20 were missing or more than one race.

Procedure

To identify common characteristics of high school completion among dropouts, a search over 180 possible variables on the NELS:88/00 was conducted and yielded seven statistically significant predictors ($p < 0.05$).

The 180 variables considered represent student, family, community, and school factors suggested by previous research (e.g., Rosenthal, 1998; Wehlage, Rutter, Smith, Lesko, & Fernandez,1989). In the predictor screening process, the forward selection procedure of the statistical package for social science (SPSS) was used to arrive at a parsimonious model (Tamhane & Dunlop, 2000). The criterion for the best subset of predictor variables was $p < 0.05$, and predictors were selected and arranged by their degree of predictive power.

The forward iteration procedure produced seven statistically significant predictors ($p < 0.05$). They include: (a) GRADE (grade level at the time of dropout), (b) REGION (census region of the student's school), (c) SES (socioeconomic status composite index in base year, (d) HOMEWORK (number of hours spent on homework per week in base year), (e) GPA (grade point average in 8th grade), (f) TV (number of hours respondent watched TV on weekdays), and (g) MOVING (respondent's family moved to a new home in last two years). In addition to the seven predictors of school completion, gender and race variables were included in the analysis since the two were the source of controversy in the previous research (McMillen & Kaufman, 1994; Wayman, 2002).

Missing data causes problems in many longitudinal studies, since many participants often do not respond to all waves of the survey and any one variable missing forces researchers to discard the participant from the analysis unless missing information is made up properly. Typically, data with multiple waves of longitudinal survey result in a significant reduction of the sample size and loss of relevant information. There are several approaches for dealing with missing variables. The method used in this analysis is mean substitution. Mean substitution is one of the more widely used methods and replaces the missing values for a variable with the mean value of that variable (Hair, Anderson, Tatham, & Black, 1998).

Results

Table 1 shows the number of initial dropouts and dropouts who attained a credential between the years 1990 and 2000. The number of dropouts reached a maximum of 1,445 in 1992 and gradually reduced to 576 adolescents in 2000 as dropouts resumed their education and completed high school through either receiving a diploma or obtaining a GED. Even though the number of youths who dropped out at least once was 1,898 (453 in 1990 and 1,445 in 1992) at the time when most of the cohort graduated, the number of dropouts

Table 1. *High School Completion and Dropout Rate along the Time Span (8ᵗʰ Grade Cohort in 1988)*

Year	1990 (10th Grade)	1992 (12th Grade)	1994 (2 years aftergraduation)	2000(8 years after graduation)
Total Students	12,144	12,144	12,144	12,144
# of Dropouts	453	1,445	627	576
In School or Working GED	11,050	10,592	457	117
Return to School	338	63		
Earn Diploma/GED			11,056	11,451
Completion Rate			91.10%	94.30%
Dropout Rate	3.80%	11.90%	5.40%	4.80%
Status Unknown	303	44	4	

working toward a degree was 457 and 117 in 1994 and 2000, respectively. The high school non-completion rate, the portion of non-degree holders who were not working on degree among the entire cohort, was 5.4% in 1994 and 4.8% in 2000. Using the NELS:88/94 survey, two years after most of the cohort graduated high school, NCES reported that 21% of the cohort dropped out at least once between 1988 and 1994 (NECS, 1994). The follow-up survey, however, in 2000 (NELS:88/00) shows that 818 dropouts returned to school or worked toward a GED during the 1992 and 1994 period and the number of high school completers increased from 11,056 in 1994 to 11,451 in 2000. The majority (66%) of dropouts eventually completed a high school education, with about 17% receiving a diploma and 49% obtaining a GED certificate.

Table 2 shows means and standard deviations the variables used in the analysis as well as Pearson correlation coefficients with the dependent variable

Table 2. *Mean, Standard Deviation, Pearson Correlation Coefficient, and Comparison Of Independent Variables Between Completers and Non-Completers*

Independent Variables	Mean	Std. Deviation	Pearson Correlation	Completers	Non-Completers
Completion	0.658	0.4740	1.000		
Grade	10.420	1.2700	0.406 **	10.790	9.700
Region	0.658	0.0711	-0.149 **	0.666	0.644
SES	-532.682	681.7260	0.226 **	-421.709	-746.538
Homework	5.140	4.5240	0.104 **	5.480	4.490
GPA	24.967	7.1250	0.172 **	25.851	23.264
TV	3.258	2.2340	-0.076 **	3.135	3.494
Moving	0.658	0.0548	0.116 **	0.666	0.650
Gender	0.488	0.5000	-0.030	0.480	0.510
Race	0.660	0.0450	0.101 **	0.664	0.654

*Note: N=1,686; ** p < .05.*

(COMPLETION). The last two columns of Table 2 indicate means of the variables for two separate group, completers and non-completers. In terms of Pearson correlation coefficients, GRADE had the highest correlation coefficient (r = .406), followed by SES (r = .226), GPA (r = .172), and MOVING (r = .116). All predictors had a significant correlation with the dependent variable (COMPLETION) at $p < .05$ except GENDER (r = -.030). Comparing the means of predictors between completers and non-completers can help determine who has a better chance to complete high school. The dropouts were more likely to complete high school when they dropped out in a later grade (10.79 vs. 9.70), were of high SES (-421.709 vs. -746.538), had a high GPA (25.851 vs. 23.264), spent more hours doing homework (3.135 vs. 3.494), were living in the Northeast or Midwest (.666 vs. .644), if their family had not moved in last two years (.666 vs. .650). The difference between completers and non-completers for GENDER was small and insignificant at $p < .05$.

Table 3 summarizes the values of regression coefficients, significance levels, and expected changes in the probability of dropping out of school with respect to one unit change in the predictor. Grade level at the time of dropout (GRADE) is strongly associated with the likelihood of having completed high school among dropouts. One more year of schooling before dropping out was predicted to increase the likelihood of completing high school by a factor of 1.242 (=2.242-1) or 124.2%. Thus, a student who

Table 3. *Logistic Regression Analysis on High School Completion among Dropouts*

Variable	β	S.E.	Wald	Sig.	Exp(β)
Grade	.807	.057	201.707	.000	2.242
Region	6.574	.915	51.568	.000	715.956
SES	.000	.000	29.162	.000	1.000
Homework	.044	.014	9.277	.002	1.045
GPA	.032	.009	14.118	.000	1.033
TV	-.053	.027	3.973	.046	.948
Moving	-2.619	1.200	4.761	.029	.073
Gender	-.263	.122	4.853	.028	.765
Race	2.989	1.300	5.286	.021	19.867
Constant	-2.138	.367	33.905	.000	.118

Note: N =1,686. Percentage correctly predicted = 74.9%. -2 Log likelihood = 1717.960. Nagelkerke R^2 = 0.322.

dropped out of school during 12th grade was 4.03 times (=2.242 2 -1) more likely to get a high school credential than a youth who dropped out during 10th grade. Census region of student's school (REGION) was strongly associated with a difference in the odds of high school completion. Dropouts who live in Northeast or Midwest region reported a significantly higher completion rate than those who lived in the South or West region. The actual completion rate was 66.6% in the Midwest, 64.0% in the Northeast, 60.5% in the West, and 59.7% in the South. Since the difference in the actual completion rate between the Midwest and the South was 6.9%, dropouts who live in the Midwest are more likely to return for a degree than those who live in the South by 57.4% (= 715.956 0.069 -1). Likewise, dropouts who live in the Midwest are more likely to return for a degree than those who live in the West by 49.3% and those in the Northeast by 18.6%.

Factors identified by previous research such as SES and academic performance (GPA) before dropping out were also significant predictors for completion of school among dropouts, while a 1 unit change in SES and GPA results in a small change in completion rate (0.001% and 3.3%, respectively). Moving to a new home and changing schools were found to be negatively associated with the completion of school, which is consistent with previous research (Rumberger & Larson, 1998).

Two student variables, number of hours spent on homework per week in base year (HOMEWORK) and hours watching TV (TV), are significantly associated with the likelihood of completing high school. If a student increases time spent on homework by one hour per week, the likelihood of degree attainment increases by 4.5% (=1.045 1-1). The odds ratio increases by 11.6% when a student increases the homework hours by 0.5 hour per day (2.5 hours per week). On the other hand, frequent TV watching on weekdays reduces dropouts' chance of earning a degree. The likelihood of degree attainment increases by 5.5% (=0.948-1 -1) when TV watching is reduced by one hour per day.

Two commonly referenced demographic factors, race and gender, are associated with the likelihood of degree attainment among dropouts. Hispanic and Black dropouts were found to be less likely to gain a degree in a Southwestern regional study (e.g., Wayman, 2001), and this result was supported by the national data.

Discussion

Students drop out of high school for various reasons. Characteristics of dropouts are well documented (Rumberger, 1987; Suh, Suh, & Houston, in press). Once students dropped out, their decision to complete a high school education afterwards was associated with factors different from dropout characteristics. Even when adolescents drop out for the same reason, the eventual educational outcome is not be the same. Using the NELS:88/00 survey, the present research found that commonly referenced factors such as grade level at the time of dropping out, academic test scores or GPA, socioeconomic status, and mobility are significant factors related to school completion among dropouts. Features unique to this study are measures of students' internal factors, such as time spent on homework, hours watching TV, and regional differences of school completion.

Among nine independent variables in the logistic regression model (Table 3), grade level at the time of dropping out was the most prominent predictor of school completion for dropouts. One more year in high school increases the likelihood of degree attainment by about 124%. It appears that an additional year at school forms academic resilience as well as academic ability necessary for eventual high school completion. This will be a warning sign for many dropouts who leave school for a GED credential. Entwisle et al. (2004) found that 45 % of dropouts reported that they left school because getting a GED was faster than earning the diploma. The actual outcome of this study did not support dropouts' reasoning and the average age of GED attainment is much higher than the average age of diploma attainment. Contrary to dropouts intention, early school leavers were associated with a significant decrease in completing a high school education. In future research, there is a need to expand this finding to investigate how grade level at the time of dropping out works differently between completers and non-completers.

In addition to the grade level at the time of dropout, region, socioeconomic status, grade point average, time spent on homework, hours watching TV, and mobility (family moving in last two years) were significant predictors for school completion. Regional differences in educational attainment among dropouts are an interesting subject, but little research has covered the issue because of statistical insignificance in many surveys (e.g., Boesel et al., 1998). Using the wave 1-5 survey of the National Longitudinal Survey of Youth

(NLSY 96/01), Suh et al. (In Press) found that there were significant differences in dropout rates among regions and that region was a strong predictor of school completion. Further research needs to be performed to investigate the related factors that account for the regional differences.

Socioeconomic status and academic performance are long-accepted measures of school completion and proven to be statistically significant. Hours spent doing homework and watching TV are considered to be indicators for study habits or student attitudes towards education and thus, correctable through education when the student is motivated to do well in school. Longitudinal studies have even linked childhood learning behavior to academic, social, and mental health outcomes in late adolescence (e.g., Smokowski, Mann, Reynolds, & Fraser, 2004). The present study shows that acquiring good study habits and spending less time watching TV during weekdays while in school will significantly increase the attainment of high school degree after youths drop out of school.

Moving within two years before or after dropping out is significantly negatively associated with getting a high school degree. Previous research indicated that students who experienced frequent changes in their school environment showed the significantly low level of educational achievement, which was due to the teachers-student relationship changes (Feldlaufer, Midgley, & Eccles, 1988) or changes in self-esteem (Seidman, Allen, Aber, Mitchell, & Feinman, 1994). Rumberger and Larson (1998) found that school change between the eighth and twelfth grades was a symptom of disengagement and an important risk factor for high school dropout.

Conclusions and Implications

As most of returning dropout studies posit, this research confirmed that academic achievement (GPA), socioeconomic status (SES), and the grade level students attended have a significant impact on dropouts' eventual completion of high school education. In addition, hours spent on homework and hours spent watching TV during weekdays were found to be significant predictors of school completion. In contrast to other factors such as SES and GPA, the two factors, HOMEWORK and TV, can be controlled and shaped by students themselves when appropriate education and supervision are provided. Developing good attitudes toward education and good study habits seem to be the attainable goal to increase the rate of high school education attainment among dropouts.

Another noteworthy finding is that grade level at the time of dropout is the most significant predictor of completing high school credentials. Youths who dropped out at 12th grade are more likely to complete school than students who left school at 10th grade. By staying in high school one more year dropouts can increase the likelihood of degree attainment significantly. It may be that students who see the opportunity to obtain a high school degree in a relatively short period of time are more likely to come back to school to finish their degree, or that students who completed higher grades may have higher academic capability than students dropped out at a lower grade level.

The present study also confirms Wayman's (2001) assertion that dropping out of school is not the termination of education for many dropouts. In the current study, the majority (66%) of dropouts successfully completed high school with approximately 17% receiving a diploma and 49% obtaining a GED certificate. The encouraging feature of the dropout phenomena is that, in fact, many initial dropouts go on to complete high school education. This renewed perspective suggests that the dropout event should be understood as a part of normal life process for some students and avoid stigmatizing them as failures. The shift of paradigm will enable a policy shift that underscores the completion of a high school education among dropouts as well as a case for dropout prevention. Accordingly, further research efforts should also be targeted to this population in identifying factors, both before and after dropout, that contribute to their completion of high school by attaining either a high school degree or a GED certificate. This assertion is in line with Lehr, Hansen, Sinclair, and Christenson (2003) and Wayman (2001) who stressed to increase efforts in promoting school completion among dropouts as the dropout prevention efforts.

Finally, this research suggests that further investigation should address regional differences in school completion rates. Dropouts who live in the Midwest or Northeast are consistently more likely to complete their high school education than those who live in the West or South. This result indicates the need for further studies investigating the factors contributing to regional differences in diploma attainment rates among dropouts. Restricted data series (e.g., NLSY97 Geocode Data) allow researchers to access a variety of statistics by county and individual student transcripts. Future research that combines the rich longitudinal records with the geographic variables assists in investigating factors influencing geographical differences in dropout rates and eventual school completion rates among dropouts.

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