

# From GED<sup>®</sup> Credential to College: Patterns of Participation in Postsecondary Education Programs

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**From GED® Credential to College:  
Patterns of Participation in Postsecondary Education Programs**

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## Purpose

Postsecondary education has never been more crucial for an individual's economic and social well-being than it is today. During a recent Joint Session of Congress (2009), President Obama declared:

*In a global economy where the most valuable skill you sell is your knowledge, a good education is a prerequisite. . . . By 2020, America will once again have the world's highest proportion of college graduates in the world.*

However, nearly 30 percent of U.S. adults remain “untouched by postsecondary education” (Council for Adult and Experiential Learning [CAEL], 2008, p. 7). CAEL (2008) noted that the federal government and states have focused less attention and effort on encouraging nontraditional adult learners such as those who pass the GED® Test to pursue postsecondary education.

Each year, nearly 500,000 dropouts obtain a GED credential. In a world of new technology, “as higher education became increasingly important for career preparation and economic viability in our society, the GED credential has increasingly been seen not only as an alternative [producer] of a high school education, but now as a gateway to postsecondary education as well” (Reder, 2007, p. 3). Many research studies have indicated that the likelihood of dropouts receiving large economic payoffs as a result of acquiring a GED credential depends upon their participation in postsecondary education. However, few studies focus on the process and pattern of GED credential recipients' participation in postsecondary education programs. Lofstrum and Tyler (2005) called for more research evidence–based studies to untangle the mystery of the GED credential as a route to postsecondary education.

There is a sense of urgency to move more American adults into the postsecondary education pipeline. GED credential holders account for a large proportion of adults who are omitted from the postsecondary education system. A clear understanding of the population that participates in postsecondary education and patterns of participation among different adult groups, as well as factors influencing their participation, will allow educators and policy makers to develop effective strategies to move adults toward education and economic success.

The major purpose of this study was to examine the participation patterns of GED credential recipients in postsecondary education programs, in comparison with high school graduates. The author also wanted to evaluate whether GED credential holders' enrollment in postsecondary programs and the type of program were functions of social and demographic background characteristics. The author examined GED credential recipients' enrollment in two types of postsecondary institutions: degree-granting colleges or universities,

and programs that offer vocational/technical credentials. Three research questions will be addressed in the current study:

1. To what extent do high school graduates and GED credential recipients participate in postsecondary education programs by age, gender, and ethnicity?
2. Do social and demographic characteristics predict whether GED credential recipients enroll in postsecondary education programs?
3. Do social and demographic characteristics predict whether GED credential recipients enroll in a college/university program or vocational/technical program?

## Theoretical Framework

### *Economic returns of GED credential recipients enrolling in postsecondary education programs*

Research has shown that passing the GED Test increases earnings for some dropouts, but that labor-market payoffs take time (Murnane, Willett, & Tyler, 2000; Tyler, 2004; Tyler & Berk, 2008; Tyler, Murnane, & Willett, 2000, 2003). However, these same studies indicate that acquisition of a GED credential is no longer sufficient for increasing access to high-wage opportunities and overcoming poverty. Obtaining a college degree appears to be the real key to helping credentialed dropouts improve their labor-market and educational status. Once an education end point, the GED credential has become a bridge for enrollment in postsecondary educational programs (Patterson, Zhang, Song, & Guison-Dowdy, 2010).

Kane and Rouse (1995) found that completing a single year of college significantly increased hourly wages and annual earnings by 4 to 7 percent. Their research findings also suggested that there were no significant differences in economic returns between earning two-year and four-year college credits. Murnane, Willett, and Boudett (1999) confirmed that increased earnings resulted from an additional year of college, ranging from 5.2 percent to 10.8 percent. Murnane, Willett, and Tyler (2000) also found that the returns on an extra year of postsecondary education were the same for male high school graduates and GED Test passers. Lofstrum and Tyler (2005) concluded that “postsecondary education is beneficial to credentialed dropouts even if credentialed dropouts are less likely to complete degrees and if enrolled, more likely to be enrolled in community colleges” (p. 3).

Increasing the percentage of GED credential recipients in postsecondary education programs remains a challenge. The first step toward a solution is to understand who participates in postsecondary education and what factors influence their participation.

### *GED credential recipients in postsecondary education*

Almeida, Johnson, and Steinberg (2006) analyzed patterns of dropouts who later earned a postsecondary credential by enrolling in degree-granting postsecondary education institutions. Forty-four percent of the credentialed dropouts enrolled in a two-year or four-year college, yet only 10 percent of them eventually earned a college degree.

Berkthold et al. (1998) found that dropouts who either later completed high school or received the GED credential were three times more likely than uncredentialed dropouts to enroll in postsecondary education programs. Half of credentialed dropouts participated in degree programs, whereas nearly all uncredentialed dropouts enrolled in certificate or other non-degree programs.

Other researchers indicated similar patterns regarding the postsecondary education experiences of GED credential recipients (Harris & Ganzglass, 2008; Patterson, Zhang, Song, & Guison-Dowdy, 2010; Reder, 2007). Three major characteristics are associated with GED credential recipients' postsecondary education experiences: (1) Postsecondary enrollment rates for GED credential recipients are much higher than for dropouts, yet lag behind those of high school graduates; (2) few GED credential recipients eventually earn a postsecondary degree; and (3) GED credential holders are more likely to enroll in two-year college programs than four-year programs.

### *Factors influencing adults' participation in postsecondary education programs*

Almeida, Johnson, and Steinberg (2006) found that socioeconomic status is the biggest factor influencing dropouts' decisions to enroll in postsecondary education. Dropouts from the top two-fifths of the socioeconomic ladder are more than twice as likely to enroll in college than those from the bottom one-fifth. Ethnicity also affects the type of institutions in which dropouts enroll, after controlling for socioeconomic status. Black, non-Hispanic students who drop out have significantly lower college enrollment rates compared with white and Hispanic dropouts. Only one-third of black, non-Hispanic dropouts with a high school credential participate in postsecondary education programs, compared with half of white and Hispanic dropouts.

Maralani (2006) found that age played a significant role in explaining the gap between college participation rates of high school graduates and GED Test passers, who take more time than traditional high school graduates to transition from secondary to postsecondary education.

## Methods

### *Data sources*

Data used in this study were from the Adult Education Survey of the 2001 and the 2005 National Household Education Surveys Program (NHES), which was developed by the National Center for Education Statistics (NCES) to study educational issues and provide descriptive data on the educational activities of the U.S. population.

The 2001 and the 2005 Adult Education Surveys were merged into a single dataset in order to extend the available sample and acquire a more reliable estimate of adults' participation in postsecondary education programs by education level (high school graduates, GED credential holders, and dropouts). The dataset was restricted to adults younger than age 65, who are the major enrollees in postsecondary education. Sample sizes for the current study were 15,635 noninstitutionalized adults aged 16 to 64, not enrolled in 12th grade or below, and not on active duty in the U.S. armed forces. The 2001 survey comprised 8,881 adults and the 2005 survey comprised 6,754 adults.

Kienzl (2008) provided detailed comparisons between the 2001 and 2005 Adult Education Surveys samples regarding basic demographic variables: age, gender, ethnicity, and highest level of education. He found, that “First, the percentage of non-Hispanic White adults was lower in the 2005 sample than in the 2001 sample (68 vs. 70 percent, respectively). Second, adults in the 2005 sample were older than adults in the 2001 sample (40.2 vs. 39.6 years of age, respectively). Finally, the percentage of adults with a high school diploma as their highest level of attainment was lower in the 2005 sample than in the 2001 sample (25.1 vs. 27.4, respectively)” (p. 1).

An individual NHES 2001 or 2005 survey, which is administered using a complex sample design, indicates that the original final weight developed by NCES staff could be applied to data analysis. However, merging two datasets necessitated a new weight to be used for appropriate analysis. Hagedorn et al. (2006) recommended the following procedures to produce a new weight for the merged dataset: “First, the original final weight (FAWT) from both AE-NHES: 2001 and AE-NHES: 2005 was adjusted to reflect the design effect for each survey before the parameter estimates were calculated. To do this, the values of the final weights for the sample of interest were summed. This sum was then divided by the total number of unweighted cases in the sample to generate an overall average final weight (AVGFWT). Next, AVGFWT was multiplied by the square of the root design effect adjustment (DEFT). Finally, FAWT was divided by this product, and the quotient (NEWWGT) was the new final weight:

$$NEWWGT_{it} = FAWT_{it} / [(DEFT_t)^2 * AVGFWT_t],$$

where  $i$  corresponds to each respondent and  $t$  equals the survey year. These new weights generate standard errors that approximate the standard errors correctly adjusted for design effects, and thus allow for proper statistical testing” (p. 1).

For this analysis, the average DEFTs from 2001 and 2005 NHES were 1.3 and 1.6, respectively. The average final new weights computed using the above methods were 18,284.08 and 23,721.10, for 2001 and 2005, respectively.

### *Method*

Three sets of descriptive statistics were presented to capture adults’ patterns of participation in postsecondary education programs by their age, gender, and ethnicity for high school graduates, GED credential recipients, and dropouts. However, comparing high school graduates with GED recipients was the major focus, as the participation rates of dropouts were very low.

For this study, the author was interested in identifying factors that predict GED credential holders’ participation in postsecondary education, which was defined in the NHES program as formal postsecondary programs leading to a college or university degree, a postsecondary vocational or technical diploma, or other education certificates related to qualifications for jobs. Logistic regression analyses were employed to answer the second and third research questions.

The present study defined two separate dichotomies as dependent variables: (1) participation in any postsecondary education programs (or non-participation), and (2) participation in college or university degree programs compared with vocational/technical diploma or degree programs. Thus, for each question, one logistic regression model was estimated to identify factors that predict GED credential holders’ participation in postsecondary educational programs. For the third research question, the sample was restricted to GED credential holders who enrolled in any postsecondary education program. A model was estimated to distinguish between participation of college/university degree programs or vocational/technical degree programs.

The NHES 2001 and 2005 data defined *college/university degree program* as participation in a college or university degree or certificate program to earn a college or university degree or certificate in the 12 months prior to the interview. Respondents could report participation in multiple college or university degree or certificate programs. Such degrees and certificates include an associate, bachelor’s, or graduate degree, or post-baccalaureate certificate, post-master’s certificate, or postdoctoral certificate. *Vocational/technical degree program* participants enrolled in vocational or technical diploma, degree, or certificate programs to earn a vocational or technical diploma, degree, or certificate (after high school) in the 12 months prior to the interview. Respondents could report participation in multiple vocational or technical diploma, degree, or certificate programs.

Independent variables were age group (16 to 24, 25 to 34, 35 to 44, 45 to 54, 55 to 64), gender, ethnicity (white, non-Hispanic; black, non-Hispanic; Hispanic; and other), income, and labor force status (working full time, working part time, unemployed, retired, and other). Because two datasets (NHES: 2001 and NHES: 2005) were merged into one, an indicator of the dataset's year was entered as one of the covariates. The goal of this was to determine whether there were differences between independent predictors' effects of the likelihood of postsecondary education program participation between 2001 and 2005 datasets. Categorical variables were dummy coded before entry into regression models.

The major purpose of regression analysis was to establish a prediction equation between participation rates and each social and demographic characteristic; therefore, a stepwise regression procedure was used. The logistic equation began with no predictors, and independent variables were added one at a time if they met statistical criteria ( $\alpha=0.05$ ). They also may be deleted at any step where they no longer contribute significantly to regression.

## Results

### *Adults by high school diploma status*

Among all 15,635 adults in the sample, 12,699 (81 percent) received regular high school diplomas, 991 (6 percent) were GED credential recipients, and 1,945 (12 percent) were dropouts. By applying weights, approximately 80 percent of the adult population in the United States hold a regular high school diploma, 7 percent have earned a GED credential, and 14 percent dropped out, as shown in **Table 1**. Because the research interest was to capture the pattern of participation in postsecondary education among the U.S. population, all following statistics were weighted.

Table 1. Weighted and Unweighted High School Diploma Frequency Status

<b>High School Diploma Status</b>	<b>Frequency</b>	<b>Percent</b>	<b>Weighted Frequency</b>	<b>Weighted Percent</b>
<b>Regular High School Diploma</b>	12,699	81.22	6,619.4140	79.59
<b>GED Credential</b>	991	6.34	557.9759	6.71
<b>Dropout</b>	1,945	12.44	1,140.0120	13.71

*Who were enrolled in postsecondary education?*

Overall, 14 percent of American adults between ages 16 and 64 enrolled in a postsecondary education program for a single year. Sixteen percent of adults who have a regular high school diploma, 10 percent of adults who earned a GED credential, and only 2 percent of dropouts enrolled in postsecondary education.

*Patterns of participation in postsecondary education programs by age, gender, and ethnicity*

**Table 2** displays participation rates for adults in postsecondary education by age, gender, and ethnicity.

*Participation by age.* Participation rates decreased as age increased for all three groups. High school graduates had higher participation rates than GED credential holders. For the younger group (16 to 24 years old), high school graduates had a much higher participation rate (60 percent) compared with GED credential recipients (20 percent). However, the participation gap between high school graduates and GED credential holders narrowed as age increased. Even for the group of 35- to 44-year-olds, GED credential holders had higher participation rates than high school graduates.

*Participation by gender.* Male and female adults have similar participation rates among high school graduates. However, female GED credential holders' participation rates are nearly two times higher than those for male GED credential recipients (12 percent vs. 7 percent, respectively).

*Participation by ethnicity.* For high school graduates, there are not many differences among white, black, and Hispanic adults participating in postsecondary education programs. Among GED credential holders, Hispanic adults have a higher participation rate than white and black adults.

Table 2. Patterns of Participation in Postsecondary Education Programs, by Age, Gender, and Ethnicity

	<b>High School Graduates</b>	<b>GED Credential Recipients</b>	<b>Dropouts</b>
<b>Age</b>	%	%	%
16–24	59.82	20.39	5.46
25–34	18.17	15.75	2.00
35–44	7.70	9.95	1.18
45–54	5.39	5.21	0.82
55–64	2.92	2.53	0.04
<b>Gender</b>			
Male	15.41	7.42	2.05
Female	16.64	11.79	1.45
<b>Ethnicity</b>			
White, non-Hispanic	14.89	8.47	1.52
Black, non-Hispanic	18.63	6.71	1.87
Hispanic	16.91	15.73	2.00
Other	23.68	16.23	2.01
<b>Total</b>	16.05	9.79	1.77

*Note: Percentages are calculated by dividing the total number of adults for each subgroup by the number of adults participating in postsecondary education programs.*

*Patterns of participation in types of postsecondary education programs by age, gender, and ethnicity for high school graduates and GED credential recipients*

*Participation by age.* For college/university programs, as indicated in **Table 3**, the participation rate for each high school graduates age group decreased as age increased. The younger group (aged 16 to 24) had much higher rates compared with the other groups. However, the distribution of participation rates among different age groups did not vary compared with high school graduates. There was only a 1 percent difference of participation rates between the group of 16- to 24-year-olds and the group of 25- to 34-year-olds. Also, the gap between high school graduates (57 percent) and GED credential recipients (12 percent) was most noticeable among the younger group (aged 16 to 24), while for the group aged 25 to 34, the participation rate for high school graduates was only 4 percent higher than that of GED credential recipients. The group aged 25 to 34 exhibited no differences between high school graduates and GED credential recipients.

For vocational and technical programs, participation rates for GED credential recipients were slightly higher compared with those of high school graduates among all five age groups. Again, there were few differences across different age groups.

Table 3. Patterns of Participation in Types of Postsecondary Education Programs, by Age, Gender, and Ethnicity

	College/University Programs			Vocational/Technical Programs		
	High School Graduates	GED Credential Recipients	Dropouts	High School Graduates	GED Credential Recipients	Dropouts
<b>Age</b>	%	%	%	%	%	%
16–24	57.18	11.87	2.32	3.76	8.82	3.37
25–34	15.12	10.69	1.23	2.90	5.05	0.78
35–44	5.59	5.61	0.08	1.83	4.34	1.09
45–54	3.75	2.68	0.39	1.34	2.96	0.43
55–64	1.50	1.04	0.00	1.05	1.48	0.04
<b>Gender</b>						
Male	12.85	2.84	0.69	2.60	4.85	1.43
Female	14.80	8.33	0.80	1.66	3.47	0.65
<b>Ethnicity</b>						
White, non-Hispanic	12.86	5.15	0.89	1.86	3.59	0.65
Black, non-Hispanic	15.55	3.35	0.91	3.33	3.36	1.14
Hispanic	14.39	10.31	0.44	2.84	4.20	1.56
Other	21.54	7.89	0.97	2.10	10.06	1.04

*Note: Percentages are calculated by dividing the total number of adults for each subgroup by the number of adults participating in postsecondary education programs.*

*Participation by gender and ethnicity.* More GED credential recipients than high school graduates enrolled in vocational or technical diploma programs. Female adults were more likely to enroll in college and university programs than males, among both high school graduates and GED credential recipients. However, male adults were slightly more likely to participate in vocational and technical diploma programs than females, among both high school graduates and GED credential recipients.

For college and university programs, the overall participation rate of high school graduates was higher than that of GED credential recipients across all ethnic groups. Still, for vocational and technical diploma programs, GED

credential recipients had a higher participation rate compared with high school graduates for all ethnic groups.

*Predictors of participation in postsecondary education programs for GED credential recipients*

The first logistic regression model included six social and demographic variables, and assessed the likelihood of participation in postsecondary education for GED credential recipients. The final logistic regression model is displayed in **Table 4**. Overall, the chi-square test of the -2 log likelihood was statistically significant, indicating that the prediction model better predicts participation in postsecondary education with the set of independent variables than does the intercept alone. Predictor variables were added one at a time if they met statistical criteria ( $\alpha=0.05$ ), but they also may be deleted at any step to which they no longer contribute significantly to regression. The results of stepwise procedures suggested that the likelihood of participating in postsecondary education programs was significantly related to age and gender. All other variables, such as ethnicity, income, and labor status, were not significantly related to the likelihood of enrolling in postsecondary educational programs. Also, the indicator of a dataset's year of collection was not significantly correlated with the odds of participation in postsecondary education programs, which indicated that the 2001 and 2005 data were similar.

Female GED credential holders were predicted to be nearly twice as likely to enroll in postsecondary education programs compared with male GED credential holders (odds ratio [OR]=1.867, 95 percent confidence interval [CI]=1.006 $\leftarrow$  $\rightarrow$ 3.464), controlling for other predictors. That is to say, female GED credential recipients were 87 percent more likely than male GED credential recipients to participate in higher education. The older GED credential recipients were, the less likely they were to enroll in any type of postsecondary education program. Compared with the younger group (aged 16 to 24), GED credential recipients who were 25 to 34 years old were 31 percent less likely to participate in higher education.

Table 4. Summary of the Logistic Regression Analysis for Variables

<b>Variable</b>	<b>Coefficient</b>	<b>Standard Error</b>	<b>Wald Chi-Sq</b>	<b>Pr&gt; ChiSq</b>	<b>Odds Ratio</b>	<b>95 Percent Wald Confidence Limits</b>	
<b>Intercept</b>	-1.72	0.39	19.28	<0.0001			
<b>Age (16–24)</b>	*						
<b>Age (25–34)</b>	-0.37	0.43	0.74	0.39	0.69	0.30	1.61
<b>Age (35–44)</b>	-0.83	0.44	3.61	0.06	0.44	0.19	1.03
<b>Age (45–54)</b>	-1.54	0.54	8.20	0.00	0.21	0.07	0.62
<b>Age (55–64)</b>	-2.21	0.70	9.87	0.00	0.11	0.03	0.44
<b>Female</b>	0.62	0.32	3.92	0.05	1.87	1.01	3.46
<b>Male</b>	*						
<b>-2 log likelihood</b>	317.67						

\* Stands for reference group.

*Predictors of participating in either college/university degree programs or vocational/technical programs for GED credential recipients*

Overall, the second logistic regression model using six variables was not statistically significant, indicating that the model was not better in predicting GED credential recipients' choice of types of postsecondary education programs than the intercept alone. However, it was found that the likelihood of participating in either college/university degree programs or vocational/technical programs was significantly associated with gender. Female GED credential recipients were nearly four times more likely to choose college/university degree programs over vocational/technical programs, compared with male GED credential recipients.

**Discussion and Scientific Significance of the Study**

A review of current findings from this study highlights several important implications for educational policies and practices. First, the current study indicated that compared with high school graduates, GED credential recipients are more likely to enroll in postsecondary education programs at older ages. The delay before entering a postsecondary education program suggests that those who pass the GED Tests have aspirations of enrolling in postsecondary education and may hold them for a long time. Despite the gap in the participation rate between high school graduates and GED credential recipients for the younger age group (aged 16 to 24), the gap decreased dramatically as the recipients got older,

and eventually the gap disappeared. GED credential recipients were more educationally resilient as they approached middle age (approximately 30 years) compared with high school graduates. One explanation for this may be because the GED credential recipients have been exposed to life hardships at a younger age and had successfully overcome some of the barriers, while traditional high school graduates may have been on the “smooth” path of development before they got older and faced more real-life problems. Life tends to teach GED credential recipients when they are still young. Maralani (2006) also found similar results: Age played a significant role in explaining the gap of college enrollment between high school graduates and GED credential recipients.

Second, the regression analysis showed that age was a significant factor in predicting whether GED credential holders participate in postsecondary education programs. Therefore, policy makers may provide more support for nontraditional-aged adult GED credential holders.

Third, the gender gap between participation rates in postsecondary education in this study could help policy makers allocate their service and support. Also, educators may spend more time helping male GED credential holders move toward postsecondary education or vocational programs.

Fourth, one surprising finding of this study was that income was not significantly associated with the likelihood of participation in postsecondary education programs for GED credential recipients. Unlike other studies that identified social economic status as the major factor of college enrollment, this study found no evidence of a relationship with income.

This paper discussed the participation rate of postsecondary education programs for GED credential recipients, but did not provide details of their experiences with postsecondary education, such as their major of study, credits they were taking, and tuition they paid. The knowledge of their real experiences in higher education would be valuable to identify possible barriers that may prevent GED credential recipients from obtaining a postsecondary diploma. Also, understanding more about their experience in postsecondary education would assist local governments as they explore models to benefit those who are struggling to achieve their higher education dream. In addition, more studies are needed to identify the positive and negative factors that affect GED credential recipients in their pursuit of postsecondary education.

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