Does employment contribute to higher college dropout rates among students from disadvantaged backgrounds?

R. Kelly Raley

Janet Kuo

Department of Sociology
Population Research Center
University of Texas

Abstract

The goal of this research is to better understand factors that contribute to the positive association between parental education and other aspects of advantage rooted in family background and college success. We begin our analysis by describing variation by parental education in student employment status during the academic year and during the summer. We find that students with college-educated parents have the lowest levels of employment, and are especially unlikely to be employed for more than 20 hours during the school year. Following we explore whether college-student employment is associated college persistence in the first year. Extensive employment is positively associated with the likelihood of dropping out, but only during the academic year. During the summer, employment is positively associated with persistence. Results indicate, however, that employment does not mediate the association between parental education and college persistence in the first year.

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In recent years there has been substantial growth in the numbers of youth enrolling in postsecondary institutions. Between 1990 and 2007, the proportion of young adults age 25-29 who had at least some college education increased from 45 percent to 58 percent, reflecting an overall increase in post-secondary enrollment in the 1990s. Over this time, there also has been an increase in the proportion age 25-29 that has a college degree, but this increase is entirely due to the growth in enrollment. Only about half of those who have some college education have received a degree (Planty et al. 2008). In addition, differences in persistence to degree by characteristics of family of origin continue to be large. According to data from the Beginning Postsecondary Students Longitudinal Study, 84 percent of students who started college at a four-year institution in the 2003-2004 academic year were still enrolled at a postsecondary institution in the spring of 2006. Among those for whom neither parent attended college, 71 were still enrolled, while the comparable figure for students who have at least one parent with a Bachelor's degree was 90 percent (Berkner and Choy 2008). Thus, while our educational system is making progress in terms in increasing postsecondary enrollment, it is doing less well an improving persistence to degree, particularly for those who come from disadvantaged backgrounds.

This paper describes analyses that use data from the 1997 National Longitudinal Survey of Youth to investigate variation in patterns of employment by family background characteristics, to examine the association between four-year college student employment and persistence in the first year of college, and to evaluate whether student employment contributes to higher rates of drop out among students from disadvantaged backgrounds.

BACKGROUND AND CONCEPTUAL FRAMEWORK

The costs of college attendance have increased at a rate substantially above the rate of inflation in recent years. Despite this trend, increasing proportions of students are attending postsecondary institutions and much of this growth is due to first-generation college students.

Possibly as a result, the percentage of college students who are employed, many of whom are working to help to pay for their educational expenses, has been increasing (Riggert et al 2006; Horn & Malizio 1998). Of 2005 high school graduates enrolled in a four-year college in October 2005, 37 percent were employed and another 3 percent were actively looking for work (Bureau of Labor Statistics, 2005). Although findings are inconsistent across studies, some research has found that there is a positive association between extended work hours and the risk of dropping out of college (Horn & Malizio,1998; Riggert et al 2006). If levels of employment are higher among students from disadvantaged backgrounds, employment among college students may be contributing to the higher drop out rates of first-generation college students.

Importantly, not all research finds a negative association between employment and academic success. For example, while some studies find that extensive employment is associated with an increased risk of dropping out, they find that students with low levels of employment (e.g. less than 15 hours a week) are not more likely to drop out and may even be less likely to leave school (Horn & Malzio 1998; Bozik 2007). Moreover, some scholars suggest that on-campus employment can reduce the chance of dropping out (Anderson 1981) and improve academic performance (Astin 1993).

The variability in the observed association between employment and academic outcomes likely arises partly because there are many countervailing forces shaping the relationship. For example, employment interferes with college success by diverting students' attention away from school and reducing the number of hours available for class attendance and study, while at the same time it can help students to learn skills that translate to the academic environment. Another related reason for the discrepancies across studies is that the influence of employment likely depends on the characteristics of the students as well as the characteristics of work. Finally, the study of the influence of employment is complicated by endogeneity issues. For example, it may be that students who are doing poorly in school may decrease their investment of time and effort into academic pursuits and increase their

employment hours. Alternatively, students who are struggling in school may reduce their work hours to try to recover.

As a first step towards understanding whether student employment contributes to the lower rates of academic success among students from disadvantaged backgrounds, this study describes variation in employment status throughout the first year of attendance in a four-year college by family background using a nationally representative sample of youth born in the first half of the 1980s. We consider employment during the academic year separately from employment during the summer and we differentiate between those who are employed for 20 hours or less and those employed for more than 20 hours. We anticipate the summer employment, even extensive employment, should not be as negatively associated with college persistence as employment during the academic year, because employment during the summer break does not interfere with coursework and may provide students skills useful for academic success once they return to school.

DATA and METHOD

Data for this analysis come from the Rounds 1-11 of the 1997 National Longitudinal Survey of Youth (NLSY), a national sample survey of almost 9000 youth born between January 1980 and December 1984. We restrict our sample to 2,789 students who first enroll in a four-year college after completing high school and our window of observation consists of the 13 months following first enrollment – the first year of college. Our sample includes respondents regardless whether they enroll in college directly after completing high school or they wait some years to go to college, but we drop students who first enroll in a two-year college because for these students the first year of four-year enrollment is qualitatively different than for those who begin college in a four-year university. We further drop 446 students from the analysis because they began their first enrollment in a four year college off-time, that is, November through June. By far the majority of students begin their college careers between July and October. We also

estimated models including all students regardless what month they started their enrollment and the general patterns were similar, but the distinctions between employment in the summer and that in the academic year were less crisp – probably because students who enroll off time do not experience the seasonality of the academic year in the same way as those who start their college careers in the normal months.

We convert the data into person-month observations, and our dependent variable is enrollment which indicates whether the respondent is enrolled in a four-year university. The NLSY constructed indicators of postsecondary enrollment status for each respondent for each month from January 1997 to last interview. These variables indicate two-year and four-year enrollment and distinguish between those who are currently enrolled or on break and those who have left school. For respondents who discontinue enrollment during their first year, we include months up until the first month they are not enrolled in a four-year college. Additionally, observations are censored at 13 months after first enrollment or at last interview if this occurs before the 13 months are complete. Enrollment status is lagged to indicate enrollment in the month following the measurement of the independent variables.

Our independent variables include a set of variables describing the respondents' family background, including family structure in 1997 (two-biological parent, single mother, stepparent, and other), race-ethnicity (Non-Latino White, Non-Latino Black, Latino, and other), and education level of the respondents most highly educated parent (less than high school, high school graduate or GED, some college, and college graduate or more). Our measure of employment comes from the NLSY-constructed event-history variables describing employment in each week since January 1997. We start by constructing a variable describing average number of hours worked each week in each month and then create monthly employment variables indicating whether the respondent had 0 hours of employment, 1-20 hours of employment a week, or more than 20 hours of employment a week in each month. Additionally, because we want to test whether the association between employment and

dropping out differs between the summer and the academic year, we include a dummy indicator of whether the month is during the summer (June, July, or August) or the academic year.

Control variables include the respondent's gender, the number of months elapsed between high school graduation and college matriculation, snd highest math course taken during high school. Generally women have lower drop out rates than men and those who delay starting college typically have higher rates of drop out. Additionally, previous research has established high school preparation is a strong predictor of both college going and college success.

We employ logistic regression to estimate our discrete-time event history models of college persistence. All analyses are weighted to correct for the non-proportional sampling design. We also estimated unweighted models and the results are substantively the same.

RESULTS

Table 1 presents levels of employment in the academic year and during the summer by parental education. Those with a parent with a college degree are the least likely to be employed, especially employed for more than 20 hours, during the academic year. Over half of those with parents with an intermediary level of education (high school graduate or some college) are employed and those who are employed are about equally split between low levels of employment and high levels of employment. Breaking the general pattern of increasing employment with decreasing parental education, students with no parent with even a high school degree are *less* likely to be employed than those with parents in the intermediary categories. This is similar to the pattern Bozik (2007) found between family income and student employment. One possible explanation for this could be that the most disadvantaged students qualify for more student aid and thus are less likely to need to work. Another possibility is that some of these students are immigrants and are ineligible to work or their family background

disadvantages them in the labor market. The patterns we observe during the summer provide more support for the later two of these possibilities.

Patterns of employment by parental education differ substantially during the summer, where employment of all students increases. Employment increases most for the children of college graduates so that their levels of employment resemble that of the children whose parents are in the two intermediary education categories. Employment increases more modestly for those with parents with less than a high school degree, suggesting that their low levels of employment during the academic year may not be by choice but due to other factors.

Table 2 presents the results from a discrete-time event history analysis predicting dropping out of college in the first year. Model 1 is the basic model with parent's education and all of the controls. We find that students whose parents had some college or more are more likely to persist than those who had no college experience and this advantage is especially pronounced for those who had a parent who earned at least a Bachelor's degree. Model 2 adds employment status to the model. Similar to some other studies, we find that extensive employment is positively associated with dropping out, while low levels of employment do not interfere with college persistence. Model 3 allows the effect of employment to vary depending on whether it is during the summer or during the school year. With the interaction term in the model, the main effects of employment represent the influence during the academic year. The results are similar to before. Extensive employment during the academic year is associated with an increased risk of dropping gout, but low levels of employment are not. The interaction terms indicate that extensive employment during the summer is actually significantly less disruptive during the summer than the academic year. In fact, the sum of the main effect and the interaction term is negative indicating that employment during the summer is associated with a reduced risk of leaving school.

Although levels of employment during the school year are lower for those students whose parents are in the highest education category and extensive employment is associated

with dropping out, controlling for employment does little to explain the lower dropout rates of students with college-educated parents. We also tested alternative specifications of the employment variable and none was an improvement over the measure we show here.

DISCUSSION

Our results are consistent with the idea that extensive employment during the school year interferes with academic success, but that employment during the summer can provide skills and/or resources to help students succeed at school. Importantly, however, the observed associations may arise because of selection processes that shape who works and who does not and may not be due to the causal effects of employment.

The main goal of this research was to investigate whether employment might mediate the influence of family background on educational success. So far the results do not support the idea that employment is an important mediating factor. In separate analyses we also tested whether the effects of employment vary by parental education, hypothesizing that the types of jobs held by students of advantaged backgrounds might differ and consequently have a less disruptive influence. These interaction terms were not significant. We also tested whether the influence of employment was harmful for less academically prepared students by interacting employment with highest high school math course. This interaction term was also not significant.

In the future we plan to extend this analysis in many way including examining the influence of family income on employment and whether employment mediates some of the influence of family income on college persistence. We also will extend the analyses to later years of college to see if the association between employment and academic success changes by number of years in college.

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Figure 1

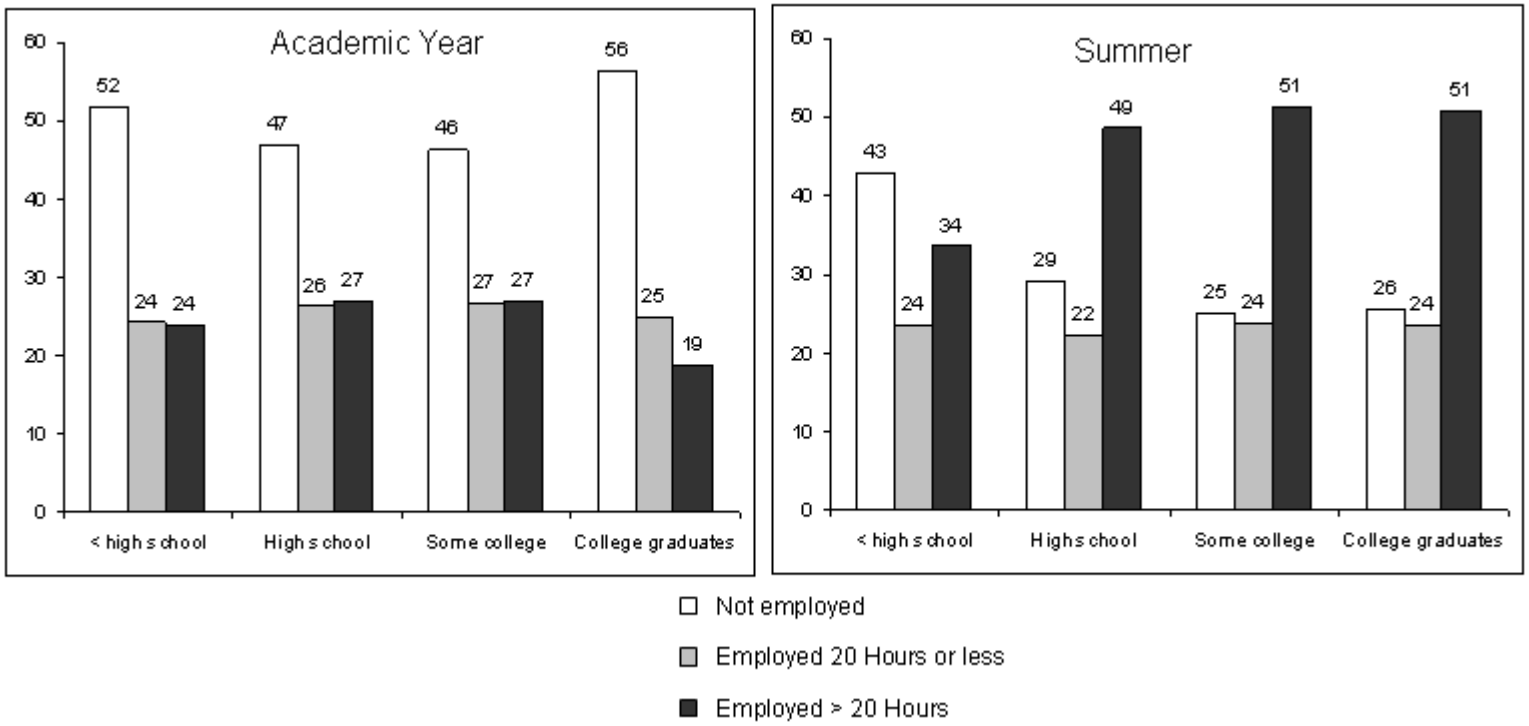
Academic Year
60
50
40
30
20
10
0
52
24
24
47
26
27
46
27
27
56
25
19
< high s chool
High s chool
Some college
College graduates
Summer
43
24
34
29
22
49
25
24
51
26
24
51
Not employed
Employed 20 Hours or less
Employed > 20 Hours

Table 1: Likelihood of dropping out of college within the first year of college education
For four-year college students who first enrolled in college in July through October

	Model 1		Model 2		Model 3	
	Coef.	Std Err.	Coef.	Std Err.	Coef.	Std Err.
Time elapsed since leaving high school till enrolled in college (in months)						
Months elapsed since HS Graduation	0.025 ***	(0.003)	0.023 ***	(0.003)	0.023 ***	(0.003)
Summer time: from July to August)						
summer	-1.586 ***	(0.234)	-1.602 ***	(0.235)	-0.987 ***	(0.293)
Gender (Ref.: Male)						
female	-0.196 *	(0.090)	-0.178 *	(0.090)	-0.182 *	(0.091)
Ethnicity/Race (Ref: Whites)						
black	-0.019	(0.137)	-0.002	(0.138)	0.000	(0.138)
hispanic	0.060	(0.174)	0.052	(0.174)	0.041	(0.174)
other race	-0.529	(0.519)	-0.460	(0.520)	-0.445	(0.519)
Parental education (Ref: High school)						
<high school	0.042	(0.223)	0.047	(0.223)	0.030	(0.223)
some college	-0.255 *	(0.127)	-0.259 *	(0.127)	-0.258 *	(0.127)
>= College	-0.493 ***	(0.119)	-0.486 ***	(0.119)	-0.481 ***	(0.119)
Missing	-0.280	(0.274)	-0.269	(0.274)	-0.260	(0.274)
Family Structure (Ref: Two-biological-parent family)						
singmom	0.167	(0.128)	0.166	(0.128)	0.162	(0.128)
step	0.293 *	(0.134)	0.269 *	(0.134)	0.259	(0.134)
Other family types	0.123	(0.299)	0.122	(0.299)	0.106	(0.299)
High school math taken (Ref: High math)						
no/low/medlow math	0.741 ***	(0.185)	0.728 ***	(0.185)	0.722 ***	(0.185)
medmath	0.256 *	(0.101)	0.238 *	(0.101)	0.236 *	(0.101)
mismath	0.437	(1.083)	0.538	(1.081)	0.561	(1.082)
Employment Status (Ref: NOT employed while in college)						
Employed, work <= 20 hrs a week			-0.133	(0.123)	-0.077	(0.128)
Employed, work > 20 hrs a week			0.277 **	(0.105)	0.380 ***	(0.110)
Interaction terms: Diff. in effect of employment within summer versus academic year (Ref: NOT employed while in college)						
Employed, work <= 20 hrs a week					-0.718	(0.441)
Employed, work > 20 hrs a week					-1.030 **	(0.334)
constant	-3.195 ***	(0.166)	-3.235 ***	(0.173)	-3.275 ***	(0.174)
Number of Observations [1]	25589 [1]		25589 [1]		25589 [1]	
-2 Log L	4567.606		4554.826		4545.525	

***<.001 ** <.01 *<.05 ~.1

Note----

1. Person-month observations. Original sample size of four year college students who first enrolled in college in July through October is 2343 among 2789 people who ever enrolled in a 4-year college .