College Student Employment, Academic Progress, and Postcollege Labor Market Success

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This article investigates the consequences of employment on college students' academic performance and their success in the labor market after leaving school. A nationally representative longitudinal data set of 1980 high school graduates is used to compare the grade point averages, dropout rates, and postcollege wages and employment rates of students who worked while in school and those who did not. The article concludes that employment is a mixed blessing for college students. While working students are more likely to dropout than nonworking students, they also tend to do better in the labor market if they do graduate. Employment does not have a strong effect on students' grades.

Conventional wisdom of work-study programs within the student aid community suggests that such employment does not adversely impact academic performance. However, this study, which reviews the issue from some different perspectives, raises new questions. In October 1991, 47% of 16- to 24-year-old full-time college students were employed (BLS, 1991) and the average working student put in over 20 hours a week. This employment among college students potentially influences their academic performance and later labor market success. This article examines the relationship between student employment, grades, and dropping out. It also looks at the effect of student employment on time spent in school, postgraduation employment, and wages.

In recent years, increasing numbers of college students have taken jobs. The employment rate among 20- to 24-year-old students (including part-time students) rose from 25% in the late 1940s to 44% in the late 1950s, 45% in the late 1960s, 51% in the late 1970s, and 56% in the late 1980s (Table 1). In the most recent decade, financial pressures that

TABLE 1
Employment Rates of 20- to 24-Year-Olds Enrolled In School, 1947-89, by Race and Sex

	Total	Men	Women	White	Black*
1947–49	25.2%	25.5%	24.0%	—	—
1950–54	34.4%	32.8%	30.7%	—	—
1955–59	44.0%	44.3%	43.3%	—	—
1960–64	43.6%	46.5%	37.6%	—	—
1965–69	44.9%	47.3%	40.9%	45.1%	43.2%
1970–74	48.5%	49.1%	47.6%	49.8%	37.9%
1975–79	50.7%	49.8%	51.7%	52.9%	35.8%
1980–84	51.6%	50.0%	53.4%	54.1%	36.5%
1985–89	55.9%	53.5%	58.4%	59.0%	38.3%

Source: *Handbook of Labor Statistics,* 1985; *Employment and Earnings,* 1985–1989.
* Prior to 1972 the category "black" included all nonwhites.

may lead students to work have grown. Between 1980 and 1988, college costs rose by as much as 52% in real terms (at private universities). Over the same period, average federal financial aid per student (including loans, grants, and work-study funding) fell by 6% (Lewis, 1988).

There are reasons to believe that holding a job could contribute positively or negatively to students' well being. On the negative side, since holding a job takes time, employed students may spend less time studying than nonworkers. As a result, they may receive lower grades. Presumably, low academic achievement leads to poor post-college labor market performance (Wise, 1975; James, et al, 1989). If the burden of simultaneous involvement in college and the labor market is too great, student workers may fail out, transfer to easier schools, or drop out. Alternatively, employment pressures could lead students to take lighter than average course loads, drop particularly difficult classes, or arrange their class schedules around their work schedules. These adjustments may cause them to take longer than normal to graduate, thus raising the total costs of college.

Employment does not inevitably have such dire consequences, however, and certain students may actually benefit from holding a job (in addition to the obvious benefits of earning money). For example, their experiences on the job may be helpful to them in the classroom. Their work experience may also give them information about their skills and preferences. While this information may lead some students to leave school, if the dropout decision is made based on increased self-awareness, it is a rational decision (Manski, 1988). Another possible benefit of employment is that contacts made at work could help students secure employment after graduation or could stimulate interests that lead to graduate school. Finally, specific or general skills gained at the workplace might be rewarded with higher wages in post-college employment.

Previous Research

Previous research has provided little support for the claim that employment hurts grades. Trueblood (1957), Henry (1967), Kaiser and Bergen (1968), Merritt (1970), Gaston (1973), Barnes and Keene (1974), Bella and Huba (1982), and Ehrenberg and Sherman (1987) all conclude that a limited amount of work (15 to 20 hours per week) has no adverse impact on students' grades. Several other studies, however, found that working a large number of hours per week negatively and significantly influences grades (Hay and Lindsay, 1969; Augsburger, 1974; Ma and Wooster, 1979). However, all of these studies have a number of limitations. With one exception, their samples are small and limited to students at a single school. While Ehrenberg and Sherman (1987) use a nationally representative data set to study this issue, the quality of their grade data is questionable. The variable they use to represent grades is self-reported by students and covers a period of time longer than a single school term.

Many studies have examined the question of whether working leads to a higher probability of dropout. The results generally indicate that working on-campus for a limited number of hours does not lead to dropout, but that working off-campus or for a large number of hours

does raise a student's chances of dropping out (Astin, 1975; Anderson, 1981; Ehrenberg and Sherman, 1987). I am aware of no study that estimates the relationship between student employment and the length of time it takes graduates to earn their degrees.

Finally, there is mixed evidence on whether working in college raises students' wages after graduation. Griliches (1980), Stephenson (1980, 1981), and San (1986) find a positive relationship between college employment and postcollege wages. Ehrenberg and Sherman (1987), on the other hand, find no relationship between these two variables.

Data

The data for this study come from the High School and Beyond survey (HSB). This Department of Education funded project began in 1980 when 28,000 high school seniors were interviewed. A subsample of 12,000 was chosen to be given follow-up surveys in 1982, 1984, and 1986. These follow-ups yield information on respondents' labor market experiences over this six-year period.

In addition to the main respondent file, HSB includes a transcript file containing data from the transcripts of every respondent who attended a postsecondary institution. These data cover the 1980–84 time period. The transcript file yields information on students' periods of enrollment in four-year colleges, their grade point averages during each term of enrollment, and whether they graduated, dropped out, or remained in school following each term. This information is combined with the main respondent file to construct a data set that covers every HSB respondent who attended a four-year college over the 1980–84 period. The resulting data set contains 4,068 students who attend four-year colleges for a total of 23,182 terms.

Does Employment Hurt Students' Grades?

Data from the HSB survey confirm the fact that employment is common among college students. The data show that during the typical college term, 52.3% of students are employed, and the average working student is on the job for 25.9 hours a week. Over the 1980–84 period, 76.9% of respondents were employed during at least one term, while 28.4% were employed during each term they were enrolled.

The grades of students who are employed and those who do not work do not differ substantially, on average. The mean term-level grade point average of working students is 2.72, slightly higher than the 2.69 GPA of nonworking students (Table 2). However, among students who

TABLE 2
Mean Term-Level GPA by Employment Status and Hours

Employment Status	GPA	# of Terms
Not Employed	2.69	11072
Employed	2.72	12110
1–10 hours	2.94	1605
11–20 hours	2.75	4047
21–30 hours	2.66	2649
31–40 hours	2.63	2376
41 + hours	2.69	1433

Source: High School and Beyond Data File, 1980–84.

work, grades are negatively related to the number of hours per week worked. Students working 1–10 hours a week have a mean GPA of 2.94, while those working 31–40 hours a week earn a GPA of 2.63, on average.

The figures in Table 2 suggest that employment does not harm students' grades, except perhaps for a small group of students who work a large number of hours. However, this conclusion could be premature, since employed students may differ from those who do not work in ways that independently influence grades. For example, working students may be more highly motivated and energetic. Thus, they may do better in school than nonworking students even if employment does not influence academic performance at all. Alternatively, working students may be attending easier schools or taking easier classes than nonworking students. These differences could also lead employed students to earn higher grades.

To determine how employment influences grades, it is important to try to control for any differences that exist between working and nonworking students. Table 3 presents the estimated effect of employment on grades after controlling for a number of student and school characteristics that could conceivably be related to both employment and grades (see Gleason, 1991). Students' ability level, the quality of their college, the type of classes they take, and a variety of attitude variables designed to capture their level of motivation are all controlled. The table shows the estimated effect on a given student's GPA of working 10, 20, 30, or 40 hours a week compared to not working at all.

These more sophisticated estimates of the effect of employment on grades are consistent with the simpler estimates presented in Table 2. Employment still has a very small effect on grades. Students who work 10 hours a week are estimated to earn slightly higher grades than those who do not work. Working for 30 hours a week has a negative effect on grades, but the magnitude of this effect is very small. A student who begins a 30 hour a week job can expect his or her GPA to fall by a mere 0.05 points. If this student is taking 5 three-credit courses each term, this effect amounts to a decrease of one-half letter grade in a single course in every other term.

TABLE 3
Estimated Effect of Various Levels of Employment (Relative to No Employment) on Students' Term Level GPA

Employment Status	Estimated Effect
Employed 10 hours	.0655 (.0146)
Employed 20 hours	-.0068 (.0118)
Employed 30 hours	-.0481 (.0134)
Employed 40 hours	-.0584 (.0137)

Source: High School and Beyond Data File, 1980–84.

Note: These figures are based on OLS regression estimates. Standard errors are in parentheses.

Is Employment Related to Dropping Out?

Students who must work to pay tuition may find that the burden of employment and study is too great, and drop out as a result. Of HSB respondents who entered four-year colleges between 1980 and 1984, 42.5% had not earned a degree and were no longer enrolled by 1986. In this section, I examine whether students' employment during college is related to the probability that they drop out.

Table 4 presents a life table of the time students spend in school. The table contains the number of students who survive in school up to the beginning of a semester and the percentage of that group who drop out after the semester ends (the dropout hazard rate). The table presents dropout hazard rates for all students, for students who have never been employed up to the current semester, and for students who have been employed in every semester up to the current one. If employment leads to dropping out, the hazard rate among "always employed" students should be greater than the hazard rate among "never employed" students.

The life table shows that employment is positively related to dropping out. The dropout hazard rate is higher among "always employed" students than among nonworking students in eight of the first ten semesters in school. Overall, an average of 7.3% of students who have worked in every semester up to the current one drop out, compared to only 5.7% of students who have never worked. This difference refers to only a single semester; over an eight-semester period the difference is more striking. Given the single semester hazard rates, the cumulative probability of dropping out among "never employed" students over an eight semester period is 37.5%. Among "always employed" students, the cumulative dropout probability is 45.5%.

Although employment is positively related to dropping out, the results in Table 4 do not necessarily mean that employment causes dropping out. The positive relationship could result from the fact that individuals who are not committed to school are both more likely to

TABLE 4
Life Table of Students' Time in School

	Semester All		Never Employed		Employed Every Semester	
Semester	N	Dropout Hazard	N	Dropout Hazard	N	Dropout
1	2361	.051	1295	.044	1066	.059
2	2214	.085	1103	.071	895	.087
3	2004	.062	763	.043	698	.076
4	1870	.074	544	.070	598	.089
5	1708	.043	418	.033	424	.045
6	1619	.058	358	.067	389	.039
7	1473	.045	268	.030	331	.066
8	1311	.101	224	.138	268	.112
9	517	.066	63	.016	87	.092
10	378	.087	43	.093	58	.172
All	15455	.065	5079	.057	4814	.073

Source: High School and Beyond Data File, 1980–86.

Note: Only students enrolled in schools on the semester system are included in the sample.

work and more likely to drop out. Their decision to drop out may have little to do with their jobs.

To give an indication of the role of employment in the dropout decision, Table 5 presents the reasons that HSB respondents gave for dropping out. Employment was an important factor for many of these dropouts. Among those who left school between 1980 and 1982, 20.8% cited part-time employment and another 11.5% cited full-time employment as a reason for their decision.

Does Employment Delay Graduation?

Even if employment does not cause college students to drop out, it may have an adverse effect on their academic progress. If students lower the intensity of their academic efforts to accommodate their work schedule, they might take longer than nonworking students to earn their degree. This would be costly for working students, since spending more time in school would mean paying more tuition and delaying the economic benefits of a college degree.

There is mixed evidence on whether employment causes students to delay graduation. A small amount of employment does not appear to slow students down. In fact, those who worked at some point during college actually take fewer semesters to earn their degree than those who never worked (Table 6). On the other hand, constant labor market involvement does lead to longer college careers. Students who work in each semester graduate after 9.2 semesters, compared to 8.9 semesters for those who have at least one semester without a job.

In addition, the intensity of employment among working students is also positively related to time until graduation. For example, students working 31–40 hours a week (when employed) take an average of 9.7 semesters to finish, while those working 1–10 hours a week finish in 8.3 semesters. The numbers indicate that heavy involvement in the labor market delays graduation by a small amount (about one semester).

Does Employment Help Students After Graduation?

The previous sections have shown that while employment does not hurt students' grades, it may lead to dropping out, and it may delay graduation for individuals who do earn a degree. Why, then, do students work? The obvious reason is that they need the money, either to pay

TABLE 5
Reported Reason for Dropout Among HSB Respondents Who Dropped Out of College, 1980-82 (N = 1787)

Reason	%
Cost too high	26.5%
Part-time employment	20.8
Full-time employment	11.5
Family	11.3
Indecision about career	38.9
School workload too great	23.6
Program not relevant	19.1
Failure	26.6

Source: High School and Beyond Data File, 1982.

Note: Respondents may have reported more than one reason for dropping out.

TABLE 6
Number of Semesters to Graduation Among Students Who Do Not Drop Out, By Employment Status

Employment Status	Mean # of Semesters	# of Students
All	9.15	1287
Ever Employed?		
No	9.23	196
Yes	8.64	1091
Employed Every Semester?		
No	8.93	867
Yes	9.20	420
Average Hours Worked When Employed		
1–10	8.30	161
11–20	8.77	413
21–30	9.68	269
31–40	9.72	290
41+	9.27	154

Source: High School and Beyond Data File, 1980–86.

Note: In calculating the number of semesters to graduation, students who are still in school at the end of the survey are assumed to graduate in two semesters.

tuition or to cover living expenses. However, work may also be beneficial to students by giving them experiences that help them in the labor market after graduation. Students who work might gain skills that are rewarded with high wages in postcollege jobs. They may also make contacts that enable them to find suitable jobs more rapidly after graduation.

Table 7 summarizes the postcollege labor market experiences of the HSB respondents who graduated by the spring of 1985. For each student, there is at least one year of postcollege data, and the overall average amount of data is 21 months. The table presents three measures

TABLE 7
Postcollege Labor Market Success Among Graduates, By Employment Status During College

		Postcollege Outcomes		
Percentage of "Potential"* Hours Worked in College	Number of Students	Mean % of Months Employed	Mean Wage When Employed	Mean Hours/ Week When Employed
0	130	55%	$6.38	30.3
1–5%	77	53	5.82	30.0
6–10%	70	56	5.79	30.2
11–15%	62	56	5.22	29.1
16–20%	74	69	7.38	34.8
21–25%	63	65	6.74	33.0
26–50%	252	71	7.26	34.8
71–75%	105	75	7.16	33.9
76–100%	26	79	7.46	40.0
ALL	859	65	6.70	32.8

Source: High School and Beyond Data Files, 1980–86.

* "Potential" hours are assumed to be 45 hours a week in every month in every semester.

of postcollege labor market success: the mean wage when employed, the percentage of months employed, and the average hours worked per week when employed. The mean value of each of these variables is presented for different groups of students having different amounts of employment in college. College employment is measured as the percentage of "potential" hours worked, where "potential" hours are assumed to be 45 hours a week in every month in every semester. For example, a student who worked 45 hours a week in every month in 4 of 8 semesters would be considered to be working 50% of potential time. The comparable figure for a student working 10 hours a week in every month in every semester would be 22%.

"Previous research has provided little support for the claim that employment hurts grades."

Students who worked more in college are more successful in the labor market in their first year or two after graduation. First, their wages tend to be higher than students who did not work much in college. For each group of students who worked fewer than 15% of potential hours, the mean wage is under the overall mean of $6.70. The mean is as low as $5.22 for those who worked 11 to 15% of potential hours. Each group that worked over 15% of potential hours receives a mean wage exceeding $6.70. Students who worked between 26 and 50% of potential hours earn a mean wage of $7.26.

Table 7 also shows that employment in college is positively related to postcollege employment. Both the percentage of months employed and average hours worked per week after graduation are higher for those groups who worked over 15% of the time in college than for those who worked under 15% of the time. For example, students who worked 26 to 50% of potential hours in college work an average of 34.8 hours a week in 71% of months following graduation. The corresponding figures for students who never worked in college are 30.3 hours and 55% of months.

In interpreting these results, two caveats should be kept in mind. First, Table 7 presents the relationship between employment in college and postcollege labor market success without controlling for relevant personal or college characteristics. The positive relationship between these variables could simply result from the fact that student workers tend to have greater ability than nonworkers. Without controlling for factors such as ability and college quality, it is impossible to determine the causal influence of employment on postcollege labor market success.

Second, the wages and employment figures shown in Table 7 represent as little as one year of data after graduation. With these data, it is impossible to say anything about individuals' long-term labor market success. Some graduates may start out in low-paying jobs because they are receiving a great deal of on-the-job training. These individuals will enjoy sharp earnings growth after a few years on the job. Other graduates may be out of work for some time after they graduate because they are travelling or waiting for a job to begin. Finally, some the most successful graduates may not work because they have enrolled in graduate school. For all of these individuals, not working in the first year after graduation does not reflect a failure in the labor market.

Conclusions

This article has attempted to give a full picture of how employment affects college students. Using a nationally representative sample of 1980 high school graduates who entered four-year colleges between 1980 and 1984, the article has compared the grades, probability of dropping out, time until graduation, and performance in the labor market after graduation among students who worked while enrolled and those who did not. One purpose of this comparison has been to determine the impact of recent changes in the labor market for college students and in students' financial situations that have led to increases in the percentage of students who work.

Perhaps the greatest concern about student employment is that it causes students to reduce their study time, and as a result they receive lower grades. HSB data have shown that this concern may be exaggerated. Both a comparison of the overall mean grades of employed and nonemployed students and estimation of the effect of work on grades after controlling for student and school characteristics show that work has very little impact on grades. This lack of a relationship may mean that students cut back on leisure time rather than study time when they become employed.

Although work does not hurt students' grades, there appears to be a small group of students for whom the burden of employment and study becomes excessive. These students manage to work and study successfully for a semester or two, but eventually the burden becomes too great and they drop out. This conclusion is based on the positive relationship between working every semester in college and dropout found in the life table of time spent in school. In addition, interviews with dropouts reveal that a substantial percentage of them felt that the fact that they needed to work during college contributed to their dropout decisions.

Work also seems to have a small cost for students who do not drop out. Among students who eventually receive their degree, those who have a substantial amount of labor market involvement take longer to do so. The average student who works more than twenty hours a week in each semester in college takes about a semester longer than the average nonworking student to obtain his or her degree.

On the positive side, employment in college is positively related to several indicators of successful transition to full-time work after graduation. Students who worked a substantial amount in college tend to earn higher wages, work longer hours, and be employed a larger percentage of months in the first year or two after graduation. However, there are several potential explanations for this relationship that have little to do with the benefits of college employment. Further research needs to be done in examining the relationship between employment in college and postcollege labor market success.

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