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Mackenzie Keene

University of New Hampshire, Durham

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The Effect of Working for Pay during the School Year on Academic Achievement

Makenzie Keene

ABSTRACT

Are college students who hold paying jobs systematically disadvantaged in terms of academic achievement? This study draws on a sample of 340 undergraduate students at a large public university to examine the relationship between socioeconomic status and academic achievement. Socioeconomic status was measured by the presence of a paid job during the school year, and achievement was measured using GPA. The findings indicate that students who worked during the school year were less likely to be "A" students than students who did not work during the school year. This relationship was more pronounced for female college students than for male college students. Future research on this topic should use a larger sample that is more representative of the population, in order to generalize these results. The results of this study show possible reproduction of inequality present in post-secondary education.

INTRODUCTION

Are college students who hold paying jobs systematically disadvantaged in terms of academic achievement? Education is one of the most important social institutions in our world. School is the main arena where we obtain academic, social, and cultural knowledge. Some students are able to utilize this knowledge to improve their position in society. However, there are many students who are systematically disadvantaged due to their socioeconomic status (SES). Lack of resources, a stressful home life, and especially a lack of time for studying can impact how students perform in the classroom. This study seeks to expand on previous research in order to show the relationship between SES and academic achievement, specifically for college students.

LITERATURE REVIEW

Multiple research studies have examined the relationship between socioeconomic status and academic achievement. Most of these studies have found that those of lower SES have lower levels of academic achievement. However, these variables are measured in various different ways.

Albrecht and Albrecht (2010) describe the social importance of education as a way for the disadvantaged to elevate themselves in society. However, the possibility for the reproduction of inequality within the educational system is also addressed. Those who are

more economically advantaged are believed to have higher education goals, get better grades in school, perform better on tests, and are more likely to finish high school and attend college (Albrecht and Albrecht 2010). In this study socioeconomic status is measured by using household income and parent's educational attainment. Academic achievement is measured by using GPA and percentile rank in high school. Using the National Longitudinal Study of Adolescent Health and data analysis researchers find a positive significant relationship between household income and high school GPA and parent's education level and GPA (Albrecht and Albrecht 2010). This study supports the idea that socioeconomic status has an effect on academic achievement.

Edgerton, Peter and Roberts (2008) focus on the relationships among education, economic opportunity, and the reproduction of inequality. They describe education as the "Great Equalizer", when in reality there is inequality present within the educational system as well. One of the main hypotheses in this study expresses the belief in a positive significant relationship between socioeconomic status and all academic achievement measures. A large survey was used to obtain information about the achievement levels of 15 year old students in math, reading and science. In order to measure these subjects, students were given a test, and scores were then generated by how many questions students got wrong and the difficulty of those questions. Socioeconomic status was measured by parents' education levels, occupational status, and an index of household possessions. The researchers found a positive significant relationship between their measures of socioeconomic status and their measures of academic achievement. This study suggests that higher socioeconomic status leads to a higher level of academic achievement for students.

As shown above, many studies rely on parent income to measure socioeconomic status. This measure is again used in a study by Crosnoe (2009), however, this number is then compared to the Census poverty threshold in order to generalize low, middle, and high class. This study also examines the relationship between SES and academic achievement, but it looks at both individual students and public high schools. A stratified sampling technique was used with a random selection of high schools. Those incomes that were up to 185% of the poverty threshold were considered lower class. Those incomes that were anywhere from 185% to 300% of the poverty threshold were considered middle class, and incomes higher than 300% of the threshold were considered high class. Academic achievement is measured using students GPAs, exposure to challenging work in school, and ability to meet college requirements. The authors found that those students of middle or high family income had better grades and less depressive symptoms than low income students (Crosnoe 2009). They also found a positive significant relationship between SES and academic achievement.

Other studies have analyzed the relationship between SES and academic achievement using qualitative methods. In a study by Dunne and Gazeley (2008), in-depth interviews were performed in order to obtain information from teachers about students' achievement levels. Teachers were able to give their own definitions of academic achievement, so researchers had little control over definitions for the study which is a limitation. Biographical information was

collected about pupils, and then teachers were asked to identify which students were underachieving. In addition, teachers were also asked to identify the perceived social class of those students. Of the students that were considered underachievers, 70% were also considered to be low/working class (Dunne and Gazeley 2008). This study shows that even when using qualitative data, the relationship between SES and academic achievement remains the same.

As seen above, previous research has focused on a few general measures of SES and mostly high school or elementary school students. Household income and parents' education levels are strong measures of SES for students, especially in primary or secondary school. However, these may not be good measures of SES for college students. This is due to the fact that many college students live independently from their parents and have their own incomes and expenses. There is little research that examines the relationship between SES and achievement for college students. Since college students have already taken the step to better their education, researchers may overlook the fact that inequality in education could still be present. Just as SES affects academic achievement in high school it may affect academic achievement in college. This reproduces inequality within one of the main institutions that is- at least superficially- meant to break the cycle of inequality. For these reasons, this study will measure the SES of college students, through the presence of a paid job during the school year. Academic achievement will be measured using GPA.

HYPOTHESES

The main hypothesis for this research project states that working for pay during the semester negatively affects student's grade point averages. This means that students who work for pay during the semester will have lower grade point averages than students who do not work for pay during the semester. Alternatively there may be no relationship between working for pay during the semester and GPA.

METHODS

Sampling

In order to find a sample for this research project, convenience sampling was used. Professors in four large general education classes at a large public university were contacted, and agreed to have their students participate. A survey was administered during class time to students in order to collect data. Students were assured that the survey was completely anonymous, and reminded that their participation was greatly appreciated. There was no compensation.

There was limited psychological risk to the participants, as some questions were very personal. Participants benefitted by having the satisfaction of helping other students. The community could also benefit, because there will be a greater understanding of the makeup of

the student body. This could lead to university policy changes that could better the community as a whole.

By using convenience sampling researchers were able to save time, money, and effort. There was no need to find a sampling frame, use a random number generator, or contact countless professors at the university. Classes that fulfilled a general education requirement were chosen in the hope that this would bring a diverse sample of students. However, there are limitations to convenience sampling. Due to the fact that the sample was not chosen using random sampling, the results cannot be directly generalized to the university population, or the U.S. college student population. There can be no assurance that this sample is representative of either of these populations.

Variables

The underlying goal of this research project is to further examine the relationship between socioeconomic status and academic achievement. As discussed above, previous research has found a negative relationship between SES and academic achievement. However, these researchers often use parents' income and educational attainment as measures of the students' SES (Albrecht and Albrecht 2010; Edgerton, Peter and Roberts 2008; Crosnoe 2009). These measures do not necessarily represent the SES of a college student. It is also important to measure whether or not students have to work during the year in order to pay for school or living expenses. For this reason, the independent variable in this study is whether or not respondents hold a paid job during the semester. This variable is measured with the following survey question "During the school year, about how many hours per week do you work for a paid job?" Response options included an option for those who do not work for pay during the school year, five different options for hours worked per week, and two options for those who wished not to respond or did not know. During data analysis categories were collapsed in order to have a group of those who work and those who do not work.

A student's grade point average is a relatively universal measure of their academic achievement. For this purpose, GPA will be used as the dependent variable to measure academic achievement. This was measured with the following survey question "What is your overall grade point average (GPA)?" Freshmen were asked to provide their overall high school GPA. Response options were divided into five different ranges for GPA, which were accompanied by their associated letter grade (i.e. A, B, C, D, F). Again, categories were collapsed during data analysis. Few respondents answered in the C, D or F range. This is most likely due to the small sample size. Therefore, the categories were collapsed into those respondents who were "A" students, and then all of the respondents with a less than an "A" average.

RESULTS

In order to discover the relationship between working for pay during the semester and GPA, raw data from the surveys was analyzed using Small STATA 10. Characteristics of the sample as well as cross-tabulations of the variables are reported below.

Sample Characteristics

The surveys generated approximately 340 respondents, out of the 394 that were given surveys. This produces a response rate of approximately 86%. Of those respondents almost 72% are female and 27% are male. Responses are available for multiple other measures of gender, but there were very few responses. This is reflected in Figure 1 below. According to university statistics, the population is 55% female and 45% male. Therefore it can be said that this sample is not representative of the gender breakdown at the university. Also included in Figure 1 is the breakdown of those who work for pay and those who do not. Approximately 51% of the sample work for pay during the semester and approximately 49% of the sample do not work for pay during the semester. Figure 1 also displays how GPA was condensed into students with “A” averages and students with averages below an “A”. Approximately 72% of students in this sample had averages below an “A”, and about 28% had “A” averages.

Figure 1. Sample Characteristics	
	Percentage %
Gender	
Female	71.47%
Male	27.35%
Other	0.59%
N/A	0.59%
Work for Pay	
Work	50.60%
Do NOT Work	49.40%
GPA/A Students	
Non-A Students	72.19%
A-Students	27.81%

Cross-Tabulations

As seen in Figure 2 below, a cross-tabulation was conducted to show the relationship between working for pay during the school year and GPA (which has taken the form of “A” students and Non-A students). Results show that a majority of respondents (72%) fall into the Non-A category, but those students who work for pay were 8 percentage points more likely to

be Non-A students. Of the 28% of respondents that are “A” students, those who do not work are 8 percentage points more likely to be “A” students. This shows that there is a negative association between the two variables.

A chi-square test shows a probability value of .094, which means that the results are statistically significant at a .10 alpha level. These values indicate that there is less than a 10% chance that the significant relationship is due to some other unknown factor or error. Therefore at the .10 alpha level, the null hypothesis is rejected. Working for pay during the school year has a negative effect on GPA.

Figure 2. Work for Pay During the School Year by GPA

GPA	Work for Pay		
	Do NOT Work	Work for Pay	Total
.67-3.66 Non-A Students	103 67.76%	125 76.22%	228 72.15%
3.67-4.0 A Students	49 32.24%	39 23.78%	88 27.85%
Total	152 100%	164 100%	316 100%
Pearsons Chi2= 2.8075			Pr= 0.094

To further examine this relationship, the sample is broken up by gender and then the variables are analyzed, where the results are presented in Figure 3. When looking at female respondents, those who work for pay are about 14 percentage points more likely to be Non-A students. Those females who do not work for pay were 14 percentage points more likely to be “A” students. There is an association between these two variables. A chi-square test reveals a probability value of .030. This indicates that there is statistical significance at a .05 alpha level. It can be said that there is a less than 5% chance that this relationship is due to random outside factors or error. When comparing these female results to the results of all of the participants, it is evident that the relationship between work and GPA is even more significant for females. Therefore, the null hypothesis can again be rejected.

There is no significant relationship present for males or the “other gender” response categories. This is most likely due to the fact that the sample is not representative of the university population in terms of the male/female divide. If a larger, more representative sample was obtained it could be possible to find a significant relationship for male respondents as well.

Figure 3. Work for Pay During the School Year by GPA, Females			
GPA	Work for Pay		
	Do NOT Work	Work for Pay	Total
.67-3.66 Non-A Students	59 61.46%	96 75.00%	155 69.20%
3.67-4.0 A Students	37 38.54%	32 25.00%	69 30.80%
Total	96 100%	128 100%	224 100%
Pearsons Chi2= 4.7195			Pr= .030

CONCLUSION

A statistically significant relationship was found between the measures of socioeconomic status and academic achievement. Those who hold a paid job during the school year are less likely to be A students, than those who do not hold a paid job. The significant relationship is even stronger when simply looking at female respondents. Due to these results, the null hypothesis is rejected.

These findings are incredibly important for the university population as well as the United States population. The significant relationship discussed above shows reproduction of inequality at the college level. Those who work for pay during the school year, perhaps to pay for school or living expenses, are disadvantaged in terms of their academic achievement. This could have future implications when these students graduate and try to find jobs. They may not reach the professional level of those with higher GPA's who already have a higher SES. These results could be very important to university administration when deciding where to cut funding and who to give financial aid to. In the future more attention and funding could go towards financial aid to ease the burden for many students. These results could also be helpful for U.S. government administrators, by showing the importance of funding for universities. In our tough economic climate, funding for education is being cut which may exacerbate this issue.

In order for this study and these results to really produce change at the university or within the U.S. government, methodological changes would need to be made. The sample for this study was obtained using convenience sampling. Therefore, the results cannot necessarily be generalized to the greater population at this university or college in general. The sample was not representative of the university population, especially in terms of gender. Also, the sample was quite small. Future research could use similar variables and techniques, but should use a larger sample size. Also, a random sampling technique should be used in order to obtain a representative sample that can be generalized to the greater population being measured. If this topic was examined further with these suggested changes in methodology, the lives of many

college students would change. Reproduction of inequality within one of our main social institutions could be reduced.

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