# Impact of On-Campus Employment on Retention
## LaGuardia Community College

Nate Dickmeyer
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**Summary**

The combined Fall 2010 to Fall 2011 return/graduation rate for 214 degree students working part-time (for at least two weeks during the 2010-11 school year) at LaGuardia and enrolled in Fall 2010 semester at the College was 86%. A control group of similar students not employed on campus had a Fall 2010 to Fall 2011 return/graduation rate of 77%. Students who graduated just after Fall 2010 or Spring 2011 or who re-enrolled in Fall 2011 contributed to these "return/ graduation" rates.

The 1,625 students in the control group were randomly selected to have a distribution similar to the working student group on the following six characteristics: 1) F-1 visa holders, 2) developmental test completion before Fall 2010, 3) Fall 2010 and Spring 2011 equated credit load (attempted), 4) total credits earned up to Fall 2010, 5) GPA distribution, and 6) financial aid awards. The entire population of 15,594 degree students who were not found to be working (and not necessarily conforming to the working group's distribution of the six characteristics) had a Fall 2010 to Fall 2011 return/graduation rate of 63%. This demonstrates that the characteristics of the working group alone were responsible for some of the improvement in the return/graduation rate. Nevertheless, those who worked part-time on campus returned or graduated after two semesters at a rate nine percentage points above the control group.
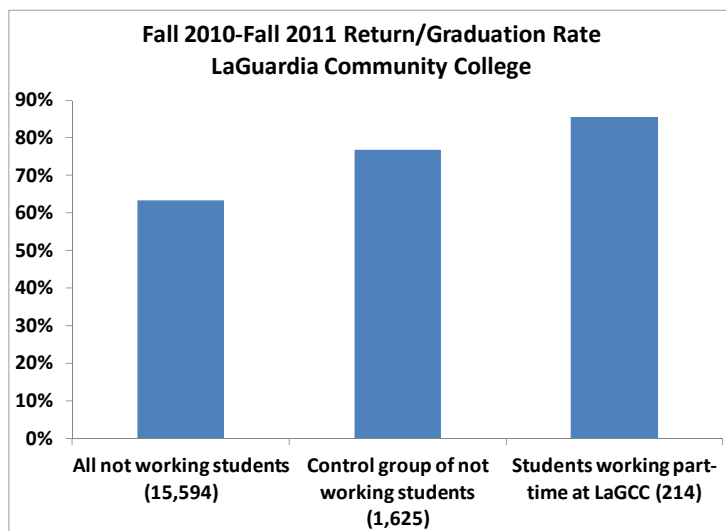
Figure 1

**Interpretation**
Do these data prove that working on campus helps retain students? Not quite, but the evidence is reasonably strong. The question remains, how well have we controlled for "motivation." That is, do students destined to succeed choose to work on campus, while others, destined to fail, choose either to work off campus or not at all?

To a certain extent, the argument is moot. If successful students choose working on campus as part of their success strategy, there must be good reasons for doing so. At the very least, these students have reduced the time taken by the commute to work each day, compared to those who work off campus.

Nevertheless, we can run into the fundamental question of whether a community college is just another sorting mechanism, having no impact on students, or a necessary transformational mechanism for some students changing from failure to success. Do pre-ordained successful students get "recognized" and hired on campus as part of the process of filtering out those who are destined for failure, or does the opportunity to work become one of the ways that colleges transform students from potential failure into success.

If "motivation" were an entirely invisible quality, then this experiment would not be helpful to us in figuring out the role of on-campus work. We know, however, that good grades, heavier course loads, passing quickly out of remediation, and a steady accumulation of earned credits are associated with greater retention and higher graduation rates, signs of what we are calling "motivation." We have attempted to control for these factors, assuming that by doing so we are controlling for "motivation."

This research shows that students who work on campus are retained better than students who do not. These students can earn money with fewer hours spent commuting. They build new relationships and have an opportunity to commit more strongly to education and to identify with people who have already succeeded in education. Whether these activities transform them into successful people or are the success strategies of those who are already successful is difficult to say without an even stronger test. In either case, the College would do well to increase these opportunities.

**Methodology**
Three sets of part-time employee payroll records were matched against Fall 2010 enrollment: 1) tax levy for spring 2011; 2) Research Foundation for 2010; and 3) non-tax levy. The Research Foundation records had last names and first names, and many records also had last-four-digit social security numbers. We attempted a series of partial-match routines with the Research Foundation list until we found 57 suitable matches to Fall 2010 enrolled degree students. 142 part-time tax-levy employees matched with Fall 2010 enrollments, and 15 non-tax levy part-time employee records matched Fall 2010 enrolled degree student records. The total number of part-time employees who were students in degree programs was thus 214, which we called the "working group." There were 15,594 Fall 2010 degree students not established as working

part-time for the college. These constitute the "potential control" or "all not-working" group. Students on the Federal work/study payroll were not included among the working students.

In the 214 member working group 31 had student visas, while 183 did not. Among the working group 61 were missing complete testing records, 135 had passed all developmental requirements, while 18 had not. Adding the number of credits attempted for Fall 2010 and Spring 2011 to determine current credit load, among the working group 30 had fewer than 12, 73 had from 13 to 24, and 111 had 25 or more. Through Spring 2010 only 11 of the working group of students had earned no credits, 23 had earned 1 to 12, 61 had earned 13 to 29, and 119 had earned 30 or more credits. Among the working group, 14 had zero or null cumulative estimated GPAs (estimated GPAs are calculated as sum of all grades multiplied by attempted credits divided by the sum of attempted credits) as of the end of Spring 2010, 23 had GPAs less than 2.00, 24 had GPAs between 2.00 and 2.50, and 153 had GPAs above 2.50. Finally, 133 of these students had been awarded financial aid for 2010-11, while 81 had not. The control group was chosen, as discussed below, to have the same distribution of characteristics.
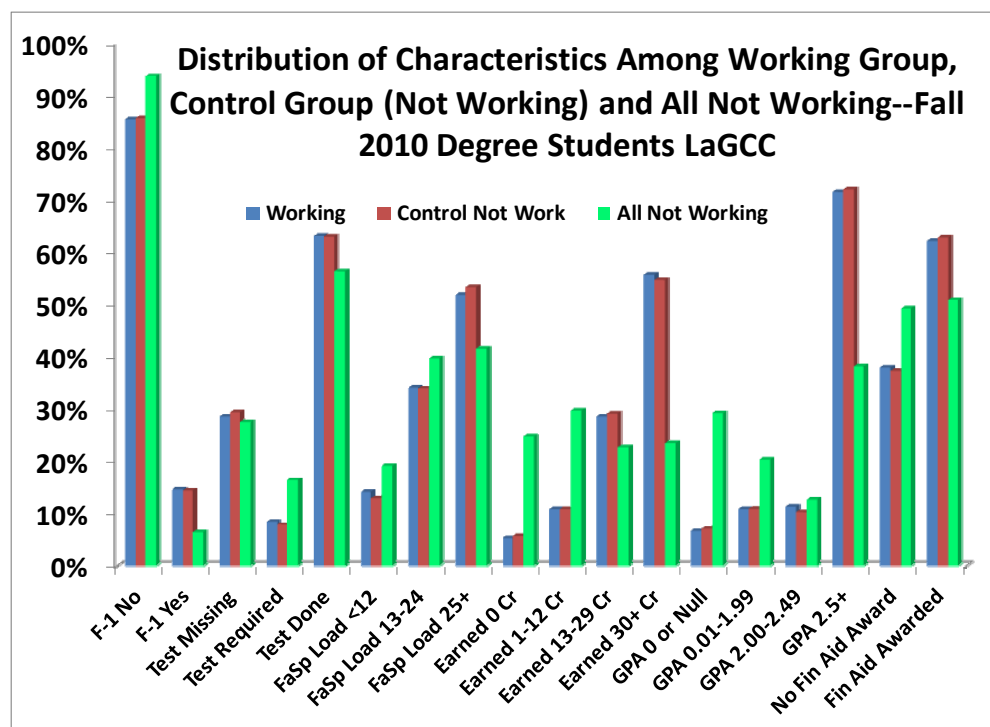


Figure 2

Figure 2 shows how similar the control group was to the group of on-campus working students, and how these two groups differed from the general population of students not working on campus. The working group and control group had proportionately more students on F-1 visas, were more likely to have completed developmental requirements, carried heavier Fall 2010 and Spring 2011 loads, had earned more credits by Fall 2010, had higher GPAs and were more likely to have financial aid than the general population of degree students.

The six characteristics each had between two and four categories which determine the number of possible combinations of characteristics. We will call any particular combination of the six characteristics a cell. The figure above lists all categories which form a 2 X 3 X 3 X 4 X 4 X 2 matrix. This gives 576 possible cells. Many combinations are highly unlikely (like being awarded financial aid and having an equated credit load of less than 12 over two semesters). Among the general not-working-on-campus population of 15,594, only 276 cells had students with that combination of characteristics. Among the 214 working students, only 77 cells had students with that combination of characteristics.

The ratio of working students in a cell to the number of all non-working students in the same cell (same set of characteristics) gave a probability that was used to select students for a control group. That probability was equal-weighted to change the size of the control group. If a cell had zero working students (as many had), the probability of selecting a student of that type from the general population of non-working students was zero by this equation. If there were relatively many students in a working student cell and relatively few non-working students in the cell, then the probability of selecting one of the non-working students for the control group was relatively higher.

The six characteristics were chosen with attention to both those that relate to retention and those that relate to working. Financial aid award, for example, does not predict retention well. Nevertheless, decision makers should find it reassuring that both study and control groups contain equal proportions of students with financial aid. Visa status, credit load, credits achieved, and GPA are better predictors of retention, but the latter three tend to co-vary. Nevertheless, we chose to include all six in an effort to over-design similarity between the study and control groups.

We were able to test varying the size of the control group. We found a broad optimum around 1,500. We calculated an error measurement as the sum of the absolute differences between the proportion of students in each cell between the study and control groups. When the control group was too small, many small cells were unfilled, increasing the error measurement. When the control was too large, small cells ran out of candidates too soon and were under filled.

We also tested whether the particular random sample of the control group made a difference. Four different random samples were drawn. All had return/graduation rates of either 76% or 77%.