

**Digital Bridge Academy:
Findings from a Multivariate Analysis of Educational Outcomes**
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The Community College Research Center (CCRC) at Teachers College, Columbia University partnered with Cabrillo College’s institutional research (IR) office to analyze the educational outcomes of the first nine cohorts of students who participated in the DBA.

An earlier study (Badway, 2007) had examined the persistence and attainment of DBA students over time, but only had aggregate statistics on California community college students generally as the basis for comparing the performance of DBA students with that of other students.

In this study, the CCRC – Cabrillo IR team used data from Cabrillo’s student information system and multivariate analysis to compare attainment of DBA students with other students at Cabrillo who did not participate in the program. The researchers also compared the effect on student outcomes of the original “accelerated” version of the DBA program model, in which college-level English instruction was incorporated into the curriculum (even though most of the students tested at a remedial level), with those of students in the a “non-accelerated” model in which the college-level English component was dropped because of state regulations requiring that students who test at a particular level of instruction need to be placed into that level. The first three cohorts of DBA students participated in the accelerated model, while the ones since have experienced the non-accelerated version.

The CCRC – Cabrillo IR team used multivariate regression analysis to estimate the effect of participating in either the accelerated or non-accelerated models of the program on the following outcomes: one- or two-semester persistence, full-time attendance in the next semester, the number of transfer credits and total college credits earned within two years, and whether or not the student passed associate-level or transfer-level English within two years. The sample included the 208 DBA students who enrolled in the first nine cohorts of the program and the 11,578 Cabrillo students who took an English placement test during a semester corresponding to the first nine DBA cohorts (if they took the test multiple times, the semester of their most recent score was used). The idea behind the selection of this comparison group is that students become more serious about their enrollment in college when they take the placement test. Also, we can use the placement test scores to control for students’ level of academic preparedness.

The regression models created for the analysis included controls for the following student characteristics: age, gender, Latino status, whether or not the student had a high school diploma or GED, and whether he or she lived in a low-income zip code. The models also controlled for the student's assessed level of English, the number of credits taken prior to the DBA semester, whether the student had previously taken an ESL course, and whether the student participated in Extended Opportunity Programs and Services (EOPS).

The CCRC-Cabrillo team found that, controlling for other factors, while participants in the *non-accelerated* version of the program generally had significantly better outcomes on most measures than did students who did not participate in DBA, the estimated effects for the *accelerated* model were usually higher. For example, the researchers estimated that non-accelerated DBA students were about 8 percent more likely than students who did not participate in the program to persist in the next semester. The corresponding increase in probability for students in the accelerated program was 16 percent. Students in the non-accelerated version earned an estimated 9 more college credits on average than did non-program participants, while accelerated DBA students earned 21 more college credits on average than did non-participants. Also, students in the non-accelerated DBA were 25 percent more likely on average than non-participants to enroll full-time in the semester following enrollment in DBA. The corresponding figure for students in the accelerated DBA was 33 percent. Neither DBA group saw any significant differences in GPA in the subsequent semester, compared to the non-participants.

Neither DBA group earned a significantly different number of transfer credits than did non-participating students, again controlling for other factors. Yet, students who participated in the accelerated model were substantially more likely to pass associate-degree level English than were non-participants. A similar effect was not evident for students in the non-accelerated program. This is perhaps not surprising, since instruction in associate-level English was incorporated into the accelerated DBA model. It is notable, however, that accelerated DBA students were also 40 percent more likely to complete *transfer*-level English than were non-participants. Non-accelerated DBA students had no significant difference from non-participants in their likelihood of completing transfer-level English.

While the results of this analysis show that participation in the DBA program is correlated with better outcomes on most measures for students in both the accelerated and non-accelerated models, they do not provide definitive evidence that the DBA program *caused* the superior outcomes. It could be that, because of the way students are selected into the program, those who participate have higher motivation or other characteristics not measured in this study that make them more likely to succeed in college. And yet, the DBA program staff intentionally seeks out students who face major barriers to success in college. Indeed, based on risk indicator data that the program staff collects on participants, DBA students are almost certainly more disadvantaged than are Cabrillo College students generally. For example, over 60 percent of DBA students in the first nine cohorts had parents who were migrant workers, a quarter attended an alternative or continuation high school, and around one in five had a history of substance abuse or gang involvement. Thus, DBA students are very likely more at-risk than are Cabrillo students with similar levels of academic preparation, although comparable risk statistics are not available for non-participating

Cabrillo students. To the extent that the DBA students in the sample were substantially more disadvantaged than other students, it may be that the estimates produced through this analysis *understate* the effect of participating in DBA.

In summary, this study found significant positive effects for participation in both the accelerated and non-accelerated versions of the DBA, although the effects for the accelerated model were generally greater than for the non-accelerated one. To the extent that colleges are seeking strategies for increasing the rate at which academically unprepared students complete “gatekeeper” courses such as college-level English and earn college credits, the accelerated version of the DBA program seems to hold particular promise. The findings from this study suggest that the DBA staff consider ways to resurrect the accelerated model and perhaps try a similar approach with college-level math and other college courses that often present stumbling blocks to students seeking a college degree.

References

Badway, N. (2007, September). *Watsonville Digital Bridge Academy. Report 2: Persistence and Attainment*. Higher Education Evaluation Research Group.