

Student, Institutional, and State Policy Effects Upon Time to Bachelor's Degree
Attainment

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Abstract

Tuition sensitivity and concern over efficient use of institutional resources point to the need for decreasing students' time to bachelor's degree attainment. This presentation enlarges upon an earlier study; it investigates the effects of state- and institutionally-sponsored policies that were designed to decrease time-to-degree, and also some additional factors such as student participation in learning communities and first year programs. Time-to-degree decreased substantially in four years since the previous study. Participation in a tuition discount program, total student credit hours earned, average credit hour load per semester, and student credit hours transferred were among the strongest predictors of time-to-degree.

Concerns on the part of students, parents, governmental agencies, and the media over ever-increasing tuition levels have led to calls to improve the effectiveness and efficiency of higher education (Boehner & McKeon, 2003; National Center for Public Policy and Higher Education, 2002). This external accountability mandate accompanied with institutional sensitivity about efficient use of scarce resources has pointed to the need for decreasing undergraduates' time to bachelor's degree attainment (Adelman, 1999; Astin, Tsui, & Avalos, 1996; Volkwein & Lorang, 1996). A readily apparent example of federal government concern with this problem is the existence of the IPEDS Graduation Rate Survey. Several states such as Florida, Louisiana, Ohio, South Carolina, and Virginia have linked graduation rates to performance funding initiatives. A recent development in Ohio is the availability to state universities of Success Challenge funds, which rewards them for the timely degree completion of undergraduates.

A number of sources, relying upon national data, have concluded that five years of elapsed time to bachelor's degree completion, rather than the traditionally recognized four, has become the de facto average. The National Center for Educational Statistics High School and Beyond longitudinal study indicated 57 months as mean time-to-degree (Adelman, 1999). Numerous anecdotal reasons are offered for increased time-to-degree: more students are attending part-time, more are transferring between institutions, more are employed while attending college, a greater percentage need remedial coursework, etc. Educational authorities and state legislatures have also begun to question whether lengthened time-to-degree is the fault of malingering students or of the institutions themselves through practices such as poor advising, insufficient class availability, and a proliferation of degree requirements. Higher education governing boards including those of Oregon (cited in Volkwein & Lorang, 1996) and Texas (Texas Higher Education Coordinating Board, 1996) have proposed policies to address increased time-to-degree, notably in the absence (at least initially) of reliable research.

A small but growing literature has been developed over recent years concerning effects upon time-to-degree. Adelman (1999) found that students who exhibited no "stop out" behavior, did not transfer between institutions, had higher freshman grade point averages, were enrolled for a larger number of classes per term, withdrew from fewer classes or took fewer grades of "incomplete," and who were female graduated more quickly. Belcheir (2000) determined that college grade point average was significantly positively related to timely graduation. The California State Postsecondary Education Commission (1988) related time-to-degree to students' financial need, employment, and class loads. DesJardins, Ahlburg, and McCall (2002) found that students with higher grade point averages and financial aid in the form of campus-based employment tended to graduate more quickly. DUBY and Schartman (1997) concluded that students who initially were enrolled for more classes per term graduated more quickly. The major finding of Hall's (1999) study was that "extender" students (those for whom time-to-degree was increased) took fewer classes per term. Ishitani (2003) found that students who had lower high school grade point averages, were older, had lower family incomes, had lower SAT verbal scores, and who were among the first generation of their families to attend college were more likely to take longer to graduate. Knight (1994) noted that students with higher cumulative grade point averages at graduation, fewer total credit

hours earned, fewer classes dropped, and higher SAT scores graduated more quickly. Lam (1999) studied both total terms enrolled and total terms elapsed (including “stop out”) for graduates; he found full-time enrollment, higher grade point average at graduation, being an out-of-state student, being female, changing majors fewer times, percent of loan dollars in relation to students' total financial aid package, not being employed, and being a student of color to be predictive of more rapid degree completion. Noxel and Katunich (1998) spotlighted the role of greater student institutional commitment as facilitating more rapid degree completion. The Oklahoma State Regents for Higher Education (1996) associated transfer, class load per term, and major-changing behavior with time-to-degree. Volkwein and Lorang (1996) found that lower class loads per term, receiving financial aid in the form of grants, and higher grade point averages were associated with longer time-to-degree. Zhu (2003) found that students with higher high school grade point averages, with fathers with higher education levels, who spent more hours per week studying, and who did not stop out graduated more quickly.

BGSU's Office of Institutional Research carried out a comprehensive study in the Spring of 2000 (Knight, 2002) of the effects of a large set of potential predictor variables (student background characteristics, remedial class and summer freshman program participation, pre-enrollment perceptions, enrollment behaviors, student experiences and perceptions, financial aid data, and academic outcomes) on time to degree attainment (measured both in total terms elapsed and also total actual terms enrolled prior to graduation) for the population of 1998-1999 baccalaureate graduates. Higher average credit hour load per semester, higher high school grade point average, being a dependent student as defined for financial aid purposes, and greater transfer credit hours were significantly related to decreased semesters *elapsed* prior to degree attainment, while greater number of failed classes and higher total credit hours at graduation were found to be significantly related to increased time-to-degree in terms of semesters *elapsed*. Higher average credit hour load per semester and greater transfer credit hours earned were found to be significantly related to fewer semesters *enrolled* prior to degree completion, while greater total credit hours earned, greater number of summer semesters enrolled, greater numbers of failed, cooperative education, withdrawn, and repeated classes, and participation in the Academic Forgiveness Program were found to be significantly related to increased time-to-degree in terms of semesters *enrolled*. Predictors that did not prove to be significant included dollar volume of student financial need unmet through financial aid, graduation with honors, the ratio of student credit hours earned at graduation to the minimum hours required in the student's degree program, almost all of the college experience and perceptions variables taken from the BGSU Undergraduate Experiences Questionnaire, and all of the pre-college perceptions variables taken from the BGSU First Year Student Questionnaire. The study's primary implication concerned that the need to get students, in appropriate circumstances, to carry heavier credit hour loads as a mechanism to shorten time-to-degree. The study recommended that University-wide discussions should be held about undergraduates' class loads and how, when appropriate, students can be encouraged to increase them; that academic advisors should encourage students, when appropriate, to take higher class loads; that University policies (registration, financial aid, etc.) that define full-time enrollment for undergraduates as 12 credit hours should be discussed in light of these findings; that BGSU should continue to

monitor and improve class availability; and that reasons for extended time-to-degree should be discussed with students by a variety of persons within the University.

The Office of Institutional Research was asked to repeat and enlarge upon the earlier study for the population of 2002-2003 baccalaureate graduates. One reason for this was to determine whether the findings of the previous study still held true after four years. A second reason was the availability of some additional possible predictor variables for the current study, such as intercollegiate athletic participation, employment (both on-campus and off-campus), and whether students participate in a number of learning communities and special programs during their first year of college. A Spring 2002 study by the Office of Institutional Research (Knight, 2003) concluded that students who participated in these learning communities and first year programs were often better retained and sometimes had higher grade point averages, even after entering student characteristics were controlled. Finally and most importantly, the study was repeated to gauge the effects of state and institutional policies designed to decrease time to degree attainment. Ohio's Success Challenge program has been providing performance funding to institutions whose students graduate in a "timely manner" (typically four years with some documented exceptions). In response BGSU has reviewed its curricula and taken a number of steps to attempt to decrease time-to-degree; one of these is to provide tuition discounts to students to enroll in their final summer term if this allows them to complete their programs in 48 months. Evaluating the effects of the Success Challenge program generally and of the Summer Success Challenge tuition discounting specifically were important reasons for repeating the study at this time.

Methods

Participants

The study examined influences upon time-to-degree for the entire population of BGSU students earning bachelor's degrees in 2002-2003 (N=3,097). Sixty percent of the population was female, seven percent were students of color, and 94% were state residents. Average high school grade point average for the population was 3.17 and average ACT composite score was 21.8. Two percent of the population participated in the University Program for Academic Success, which provides special services to new students who would otherwise be inadmissible due to their academic credentials. Eleven percent were enrolled in the university's College Reading and Learning Skills class (EDCI 100), 10% in remedial English (ENG 110), and 14% in remedial mathematics (MATH 095). Slightly less than 1% (N=21) of the students took advantage of the university's Academic Forgiveness Program, which permits students returning to the institution after a period of at least five years away to have their grade point averages calculated from the point of readmission without losing credit for previous coursework with a grade of "C" or better.

For purposes of this study, students' major areas of study were grouped into areas corresponding either to colleges within the University or divisions within the College of Arts and Sciences. Approximately 16% of the students graduated in business

administration, 31% in education and human development, 8% in health and human services, 7% in technology, 7% in mathematics and sciences, 8% in social sciences, 3% in humanities, 8% in arts, and 10% in communications. A final 3% of the students had majors in liberal studies or individually-planned programs; their majors were not included in the study.

Seventy percent of the students graduated in programs whose curricula were subject to the influence of accreditation standards. Seven percent graduated with double majors and 29% graduated with one or more minors. Nineteen percent of the students enrolled in at least one cooperative education class and 14% completed two or more. Seventy-four percent of the students were enrolled for at least one summer semester; 38% were enrolled in two or more, and 14% were enrolled in three or more summer terms. Sixty-three percent changed their major at least once; 25% changed twice or more, and 8% changed three or more times. Thirty-three percent of the population retook at least one class; 19% withdrew from at least one class, and 32% failed at least one class. One percent of the students participated in the university's honors program. Students on average earned 42 credit hours in general education classes and earned a mean grade point average within general education of 3.06 on a 4.00 scale. The mean credit hours students completed per semester was 15.6 (median 14.2). Students graduated with a mean cumulative grade point average of 3.14 and with an average of 137.8 credit hours total; 22% graduated with honors.

Median semesters elapsed (including "stop out" semesters) from matriculation to degree attainment was 12. The median number of semesters of enrollment prior to degree completion for the population was nine. As shown in Figure 1, median semesters elapsed prior to degree attainment decreased from 14 for the 1998-1999 graduating class and median semesters enrolled decreased from 10.

Transfer students (N=640) were excluded from the population; 2,457 remaining students constituted the population for the remainder of the analyses. These students were excluded since significant differences between transfer and "native" students were found in both total semesters enrolled and semesters elapsed to degree (7.2 semesters enrolled for transfer students vs. 10.2 semesters for native students and 8.8 semesters elapsed for transfer students vs. 13.8 semesters for native students) and also to allow greater comparability to most previously published studies. Please note that although transfer students were excluded from the study population, students may have still had transfer credit through activities such as AP, CLEP, simultaneous high school and college enrollment, and through taking classes at other institutions, typically in the summer at an institution near to students' permanent residence.

Table 1 arrays characteristics of the study population and also lists the potential predictor variables used in the study as well as the two dependent variables, semesters elapsed prior to degree attainment (including stop-out) and semesters actually enrolled prior to graduation. The same potential predictor variables (student background characteristics, enrollment behaviors, financial aid data, and academic outcomes) as were used in the Office of Institutional Research's 2000 study were used in the current one in

order to test whether the same pattern of results still held, although, as noted earlier, some additional potential predictors that were not available earlier were also included. Although none of the BGSU First Year Student Questionnaire (FYSQ) variables were found to be significant predictors of time-to-degree in the earlier BGSU study, parents' education levels were extracted from FYSQ data for the current study since other recent published institutional studies found first generation status to be a significant predictor of longer time to graduation. Table 2 provides median semesters both elapsed and enrolled prior to degree completion for students in each major.

Design and Procedure

Data on students' time-to-degree, demographic and pre-college educational characteristics, enrollment behavior variables, academic outcomes, financial aid, learning community and first year program participation, parents' education levels, and program accreditation status were assembled into a series of data files by the Office of Institutional Research.

Dichotomous potential predictor variables were used in a set of t-tests with semesters elapsed prior to degree completion and actual semesters enrolled prior to degree completion as the dependent variables. Continuous potential predictor variables were included along with the same two dependent variables in a correlation analysis.

Two separate multiple regression analyses were carried out, one with semesters elapsed prior to degree completion as the dependent variable and another with semesters enrolled prior to degree completion and the dependent variable. Variables used in the univariate analyses noted above that were omitted from the regressions due to multicollinearity concerns included ACT sub-scores, grade point average at the end of students' freshman year and in general education classes, number of fall/spring and summer semesters enrolled, and student credit hours earned in fall/spring and summer semesters. Average student credit hours completed per semesters was also omitted from the multiple regression analysis with semesters enrolled prior to degree completion as the dependent variable due to multicollinearity concerns.

It should be noted that the two multiple regression analyses were also carried out with both dependent variables converted to their logarithmic and squared counterparts in an attempt to determine whether a non-linear relationship better fit the research models. The pattern of results was essentially the same and there was less than a 1% change in percentage of variance accounted for by either model, so the results are presented here using the more familiar approach.

Results

Univariate Analyses

The results of the set of t-tests are shown in Table 3, which is sorted according to the *t* statistic value for semesters elapsed. Eighteen of the predictor variables showed

significant differences with mean semesters *elapsed*; participation in the Academic Forgiveness program, enrollment in the UNIV 131 class, graduation in the College of Technology, and participation in the Student Support Services program were highly significantly related to decreased semesters elapsed, while students being defined as dependent for financial aid purposes, participation in the Honors, Postsecondary Enrollment Options, and Summer Success Challenge programs, having financial aid record data available, and being female were highly significantly related to increased semesters elapsed. Twenty-nine of the predictor variables showed significant differences with mean semesters *enrolled*; graduation in the College of Technology, participation in the Academic Forgiveness program, participation in the Student Support Services program, enrollment in the MATH 095, ENG 110, and UNIV 100 classes were highly significantly related to decreased semesters enrolled, while students being defined as dependent for financial aid purposes, graduation with honors, being female, receiving financial aid, having financial aid record data available, participation in the Postsecondary Enrollment Options programs, participation in the Honors program, graduation in the College of Health and Human Services, and graduation in the social sciences were highly significantly related to increased semesters enrolled.

The results of the correlation analyses appear in Table 4, which is sorted according to the size of the correlations with semesters elapsed. Most of the continuous predictor variables were significantly correlated with time-to-degree, both in terms of semesters elapsed prior to degree attainment and semesters enrolled prior to degree attainment. Greater average student credit hours earned per semester, greater high school grade point average, higher grade point average at end of the freshman year, higher grade point average at graduation, and higher grade point average in general education classes were highly significantly correlated with decreased time-to-degree, while greater number of fall, spring, and summer semesters enrolled, greater total student credit hours earned, greater number of quarters employed off-campus, greater number of classes failed and repeated, and greater number of cooperative education classes completed were highly significantly correlated with increased time-to-degree. Greater number of student credit hours transferred was significantly correlated with increased average semesters elapsed, but decreased average semesters enrolled.

Multivariate Analyses

The results of the regression analysis with semesters *elapsed* prior to degree attainment as the dependent variable are shown in Table 5. The regression model explained 48% of the variance in total semesters elapsed to degree attainment. The significant predictors with the largest effect sizes included participation in the Summer Success Challenge program, average student credit hours earned per semester, participation in the President's Leadership Academy (related to decreased time-to-degree attainment), student credit hours earned at the time of graduation, and students being defined as dependent for financial aid purposes (related to increased time-to-degree attainment).

The results of the regression analysis with semesters *enrolled* prior to degree attainment as the dependent variable are shown in Table 6. The regression model explained 50% of the variance in semesters enrolled to degree attainment. The significant predictors with the largest effect sizes included student credit hours transferred, graduation in the arts disciplines, students being defined as dependent for financial aid purposes, need-based loan dollars received, students enrolling in the College Reading and Learning Skills (EDCI 100) class (related to decreased time-to-degree attainment), the number of cooperative education classes completed, student credit hours earned at graduation, the number of classes repeated, participation in the Art Freshman Interest Groups program, participation in the Post Secondary Enrollment Options program, participation in the Honors program, graduation from the College of Technology, and students receipt of financial aid (related to increased time-to-degree attainment).

Conclusions and Recommendations

Some of the findings held few surprises; they support the literature on time-to-degree and remain the same from the Spring 2000 study. Average student credit hours completed per semester and student credit hours transferred (through activities such as AP, CLEP, simultaneous high school and college enrollment, and transient enrollment at other institutions) continued to be related to decreased time-to-degree, while total student credit hours earned, number of cooperative education classes completed, and number of classes repeated continued to be related to increased time-to-degree. Interestingly, there is only minimal correspondence between this study's findings and the major reasons cited by respondents to the 2002-2003 BGSU Graduating Senior Questionnaire for extending their enrollment beyond four years: changing majors (33%), working while enrolled (24%), lack of class availability (19%), involvement in cooperative education and internships (17%).

Some of the current findings are different from those of the earlier study. Enrollment in the College Reading and Learning Skills (EDCI 100) class, which is significantly related to decreased time-to-degree in the current study, was not a significant predictor earlier. Graduating in the arts disciplines, which is significantly related to decreased semesters enrolled prior to degree attainment in the current study, was related to increased time-to-degree in the Spring 2000 study, but showed a much weaker effect. Students being defined as dependent for financial aid purposes, which is significantly related to increased semesters elapsed prior to degree attainment in the current study, was significantly related to decreased time-to-degree in the earlier study. Dollar volume of need-based loans received, which is significantly related to decreased semesters enrolled prior to degree attainment in the current study, was significantly related to increased semesters enrolled in the Spring 2000 study, but showed a much weaker effect. Many of the significant predictors of time-to-degree in the literature cited earlier were not found to be significant in the current study based upon the multiple regression results, but none of the significant results contradicted those of the other published studies.

Predictors that were unavailable in the Spring 2000 study that were found to be significant in the current study were participation in the Summer Success Challenge tuition discount program, and participation in three special programs for first year students: the President's Leadership Academy, the Arts Freshman Interest Groups, and the Honors Program. It should be noted that the Arts Freshman Interest Groups has been discontinued and that both it and the President's Leadership Academy have a very small number of participants (51 and 16 students among 2002-2003 graduates, respectively). Other predictors of time-to-degree that were not available previously, including participation in other learning communities and first year programs and in intercollegiate athletics, and employment on- and off-campus, were found to have very weak effects that were not significant in the multiple regression analyses in the current study.

Before proceeding with a discussion of the implications of the findings, mention of the limitations of the study are in order. The study was designed to examine the impact of a number of factors on time to degree attainment for a group of students who did in fact graduate. It does not, by design, address issues related to students who did not graduate. Data on parents' educational levels (gained from the BGSU First Year Student Questionnaire) were not available for the majority of students in the study. Some of the learning communities and first year programs were new at the time that students in the study could have participated in them; it is possible that effects on time-to-degree for freshmen participating in such programs this year, for example, could perhaps be different. Finally, it is certainly true that not all factors (e.g., motivation, time management skills) that could potentially significantly predict time-to-degree are included in the study.

One obvious implication of the study is that Ohio's Success Challenge program has been successful in decreasing time-to-degree at BGSU as evidenced by substantially decreased median time-to-degree for 2002-2003 bachelor's degree graduates. A recent report produced by the Provost's Office indicates that Success Challenge funds have been used in a wide variety of ways to facilitate student success, including funding for learning communities and first year programs, enhancement of services in the Office of Student Financial Aid, funding for the Honors Program, expansion of services in Academic Enhancement, enhancements of assessment of student learning, redesign of General Education classes, curricular redesign to facilitate four-year degree completion, funding for the Bowling Green Experience, support for student travel, and expanded research opportunities for undergraduate students. The Summer Success Challenge tuition discount has also clearly facilitated timely graduation at BGSU.

Participation in the President's Leadership Academy, enrollment in the College Reading and Learning Skills (EDCI 100) class, and graduation in the arts disciplines facilitated more timely degree attainment in the current study. It would be worthwhile to follow up with more research that explores the uniqueness of these educational environments for promoting decreased time-to-degree.

Since students' completion of a greater number of credit hours per term remains a significant predictor of decreased time-to-degree, it is useful to repeat some of the

implications related to this finding that were noted in the earlier study. As Volkwein and Lorang (1996) note, many baccalaureate programs require a student credit hour load of 16-17 or greater per semester for students to graduate in four years without enrolling in summer (this also excludes the need to take remedial or elective classes, change majors, etc.). Yet campus policies allow students to be considered as “full-time” for registration, fee payment, financial aid (federal and state policies come in to play here as well), and other purposes if they enroll with just 12 semester credit hours per term. While a lighter class load may be in the best academic or personal interest of some students, a systematic approach to academic advising that encourages students to take higher class loads when warranted would significantly decrease time to degree attainment for most students. Advising interventions may also help to decrease the number of failed, dropped, or repeated classes.

As was the case in the Spring 2000 study, the fact that enrollment in cooperative education classes had a relatively strong effect upon increased time-to-degree illustrates the important caveat that timely degree completion is not all that matters in terms of college student outcomes. Both analytical and student self-report evidence supports the fact that enrollment in cooperative education classes, involvement in internships, etc., while extending time-to-degree, significantly improves student learning and skill development, affective outcomes, career prospects, and the like. Significantly reducing time-to-degree could perhaps demand a trade-off against other long-term (and maybe more important) outcomes. As is often the case in higher education policy and practice, and as has been observed by many, the actions we take and the outcomes we hope to facilitate are ultimately a function of our values.

The Office of Institutional Research offers several following recommendations based upon the results of this study. First, the University should continue and expand where possible the efforts funded through the Success Challenge program to decrease time-to-degree. Second, although average time-to-degree has decreased since four years ago, it remains important for academic advisors to encourage students, when appropriate, to take full (i.e., 15 or 16 credit hours per semester) class loads. Finally, barriers to timely degree attainment should continue to be discussed by a variety of persons within the University. With these thoughts in mind, it is recommended that the University’s Undergraduate Council review the 122 credit hour graduation requirement with an eye towards possibly returning it to the earlier 120 hour level.

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