Reducing Time-to-Degree: Options for the University of Wisconsin-Madison

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Office of the Provost - Cramer, Huhn, Milner, Singer

Problem Synopsis

The time it takes undergraduates to complete their degree requirements impacts degree affordability, access for other prospective students, equity, and institutional rankings based on outcome measures. With an 83% 6-year graduation rate, UW-Madison is comparable to peers – many large public universities have 6 year graduation rates in the 83 to 85% range. However, UW-Madison lags behind peers in 4-year graduation rate – the rate of 55% is about 10 points lower than the average of peers that have a similar 6-year graduation rate. This report based upon a directive from Chancellor Blank outlines possible actions to increase UW-Madison’s 4-year graduation rate and similarly to reduce time to degree.

Students and those financially supporting them are increasingly paying a higher share of the cost of instruction. The longer students are enrolled, the higher the costs to students and their families in terms of both direct costs and opportunity costs. Identifying and addressing any structural issues that are contributing to longer time-to-degree could decrease student costs and contribute to making a UW-Madison education more affordable. From an institutional perspective, the number of students UW-Madison can enroll at any one time is finite. The institution faces pressure to enroll more students and increase the number of graduates and the percentage of students who graduate. Decreasing the time it takes for students to complete their degrees frees up space to enroll new students and increases the ratio of degrees to enrollment. From an equity perspective, the finding that minority, first generation, and low income students have a longer time-to-degree leads to questions about contributing factors. Understanding them could identify specific and effective interventions that would ensure that all students have the opportunity to graduate on time and with as little debt as possible.

Time-to-degree is a complex issue that is impacted by many variables, many that are subtle and many that are difficult to control in an institutional culture that has traditionally afforded considerable discretion and flexibility to students and instructors (faculty and staff). As a result, the development of this report and possible actions were informed by the following guiding principles:

- Our study focused on aspects of institutional structure and student behavior that can be influenced institutionally if we so choose.
- Our approach sought to preserve the quality aspects of the Wisconsin Experience and experiences that prepare students for productive careers and graduate or professional school. For example, studying abroad and participation in cooperative education are correlated with increased time to degree but these activities are valuable educational activities that we seek to encourage.
- We sought to identify actions that will both improve timely degree completion, and will ensure that a very high proportion of students graduate.
• We sought to anticipate any unintended negative consequences of our recommended actions. Often, there were obvious tradeoffs.

Sources of Information and Methods

The options identified in this report were informed by an analysis of the enrollment patterns, participation in Wisconsin Experience activities, student behaviors, and degree program choices of recent bachelor degree recipients, policy comparisons with other institutions, perceptions gathered from a survey of advisors, and current academic policies.

Linear regression data analysis

• We conducted a predictive analysis (linear regression) of time to degree using student enrollment, participation, and academic variables based on more than 10,000 bachelor’s degree recipients in the last 2 years who started at UW-Madison as new freshmen\(^1\). The analysis included 31 variables such as enrollment and academic patterns, academic preparation, co-curricular participation, demographics, and financial aid participation. From this analysis we could identify predictors of time to degree at the overall campus level and for each school/college.

Comparing with other higher education institutions

• We compared time to degree for UW-Madison and its peers using data exchanged annually at the major level with other AAU institutions through the AAU Data Exchange (AAUDE). We can use these data to evaluate the time to degree of UW-Madison bachelor’s degree recipients compared to the time to degree at peer institutions. See http://www.apir.wisc.edu/timetodegree/UGRADttdPeerProgram_201213.pdf
• We directly contacted several institutions that have higher 4-year graduation rates to learn more about their institutional practices and policies.

UW- Observations from advisors and UW-Madison major declaration/admission policies

• In May 2014 over 150 UW-Madison academic advisors were asked to identify factors, based on their experience advising students, which may contribute to UW-Madison’s relatively lower four-year graduation rate. We reviewed these qualitative responses and grouped them in thematic categories.
• The Academic Advising and Policy Leaders (AAPL) council designed a rubric for categorizing the variety of major declaration/admissions policies across schools and colleges during the Fall of 2014. The AAPL committee estimated the number of students who fall in each of the rubric categories.

\(^1\) The complete numerical details are available from Clare Huhn
Findings

Findings and observations from the linear regression analysis, comparisons with peer institutions, advisor feedback and declaration policies are listed below.

Linear regression data analysis

• Variables related to individual student enrollment intensity and academic success are strong predictors of time to degree. Not surprisingly, students who stop out, fail courses, and have lower semester credit loads have significantly longer time to degree.
• Delayed time to declaration of the first major is a significant predictor of increased time to degree; however, its effect is less than the effect of average credits per semester.
• Attempting and/or completing multiple majors is a significant predictor of increased time to degree as is the effect of a substantial change in degree program (for example, changing from a Letters and Science degree program to an Engineering degree program).
• Strong academic preparation is correlated with reduced time to degree. Students who enter UW-Madison with advanced standing credits (from Advanced Placement, International Baccalaureate, or CLEP exams) have a head start in satisfying degree requirements.
• Several demographic factors are significant predictors of increased time to degree. Targeted minority, first generation, Wisconsin resident, and male students on average take longer to graduate than other students.
• Circumstances impacting time to degree vary by school/college, and constraints or attributes of the associated majors contribute to these differences.
• While this analysis revealed factors correlated with time to degree, identifying the potential for improvement in time to degree is more nuanced, is influenced by academic policies and school/college and institutional cultures, and is generally less quantifiable.

Comparing with other higher education institutions

As indicated in Table 1, UW-Madison’s 6-year graduation rate compares favorably with peer universities and places us in the top 20 among major research universities. However, UW-Madison’s 4-year graduation rate is lower than the average among major research universities; UW-Madison’s rate of 55.5% is almost 6 points lower than the average of that group.

Figure 1 (from an earlier data analysis) shows a sampling of UW-Madison majors and the elapsed calendar years from matriculation to degree completion. The data indicates various programs that take longer (and shorter) compared to comparable by-name programs at a sampling of AAU public universities.

• We identified the University of North Carolina (UNC) as a public research university with a much higher 4-year graduation rate - approximately 70%. To achieve such a high rate UNC mandates that students must graduate within 8 semesters. Students who take longer have a registration hold placed on their enrollment; they are subject to intrusive advising and are required to commit to a plan for completion. This is a very resource intensive approach from an advising
perspective, but it does establish very clear expectations about completion. As a result, their four year graduation rate is one of the highest among large public universities.

Table 1. Graduation Rates, UW-Madison and Peer Universities

<table>
<thead>
<tr>
<th>4-Year Graduation Rates</th>
<th>6-Year Graduation Rates</th>
</tr>
</thead>
<tbody>
<tr>
<td>UW-Madison</td>
<td>55.5</td>
</tr>
<tr>
<td>All AAU Average</td>
<td>61.2</td>
</tr>
<tr>
<td>AAU Public Average</td>
<td>55.2</td>
</tr>
<tr>
<td>Big Ten Average</td>
<td>59.0</td>
</tr>
<tr>
<td>UW-Madison Rank Among the 61 AAUs</td>
<td>27th</td>
</tr>
</tbody>
</table>

Rates are based on 2011-12 data, the most recent year peer data is available. AAU – Association of American Universities, a group of 61 major research universities.

Figure 1. Time to degree for selected majors at UW-Madison, compared to time to degree at peer institutions. “Elapsed calendar years” is a standard metric of time to degree; 3.75 years corresponds to the canonical 4 academic years.
• Another university that provided us information was the University of Maryland (UMD), which has a 4-year graduation rate of about 65%. As a result of a 2010 task force on retention and graduation rates, UMD set high expectations for students to “achieve their educational goals in a timely fashion”. They establish these expectations publicly and have increased the support for students to complete in four years. Increased support takes the form of development of four-year plans, help for students who are not meeting their goals, and a transitional advising program for students who have more than 60 credits and no declared major.

• UW-Stevens Point has seen improvements in time to degree for several programs, especially School of Education teacher preparation programs, as a result of streamlining the campus-wide general education requirements by about 15 credits. Credits that apply to the teacher preparation programs have been cut from 40 to 24 credits, which allow students to start the Education sequence earlier. Thus, UWSP provides an example of an institution that’s made curricular revisions to support both academic success and timely degree completion.

Observations from advisors and UW-Madison major declaration/admission policies

Based on a survey conducted in AY 2013-14, UW-Madison undergraduate advisors identified the following factors as strong contributors to UW-Madison’s comparatively lower four-year graduation rate:

- Access to courses/course sequencing
- Completing multiple majors and certificates
- Complicated changes in major and corresponding transfer between schools/colleges
- Applying to limited enrollment programs (Business, Engineering, others)
- Students who don’t want to graduate for various personal reasons

Undergraduates at UW-Madison enter their selected major(s) in four general ways.2

*Flexible declaration programs (roughly 56% of undergraduates)*

Students in many liberal arts programs spend their initial several semesters meeting foundational requirements while exploring or confirming possible majors, ideally declaring a major by the third or fourth semester. Examples include History, English, Anthropology, Political Science, Sociology, Philosophy, and Zoology. Some majors of this type require specific prerequisite courses, often with a minimum grade point average, prior to major declaration. Examples include Psychology and Communication Arts. In the College of Agricultural and Life

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2 These four ways refer to first major for undergraduates who first matriculated at UW-Madison. The Undergraduate Catalog provides additional details.
Sciences, students must declare prior to achieving senior standing, defined as 86 credits. The Letters and Science curriculum committee will soon consider a proposal to require major declaration by 86 credits but currently do not have a requirement.

*Admission to competitive enrollment programs (roughly 40% of undergraduates)*

Students apply and are admitted to a program after either one or two years of course work. All programs have prerequisites and most have minimum grade-point averages for admission eligibility. Some programs limit the number of times that students may re-apply, while others do not. For these programs, the phrase “admission to program” is used rather than “declaration of major.” Examples of these programs may be found in CALS, Business, Education, Engineering, and Nursing. For Business, Engineering, and Nursing these programs account for all students in the college/school. (Note that pre-business students are enrolled in the College of Letters and Science until they are admitted to the School of Business.)

*Direct admission of first-year students to competitive enrollment programs (roughly 2% of undergraduates)*

In Business, Engineering, and Nursing, a select number of incoming first-year students are offered admission directly into competitive enrollment programs. For some programs these direct-admit students must make year-to-year progress across a set of required courses. These programs are relatively new, having been established within the last five years, and amount to a small minority of students in these units.

*Freshman declaration expected (roughly 2% of undergraduates)*

In these programs the disciplinary preparation and/or curriculum structure assumes students enter the major/degree as early as possible, usually during the first year. These programs often require intensive early study that is foundational to advanced work or require a linear, 8-semester sequencing/order that constrains students who begin later. These programs do not always explicitly “require” immediate declaration upon entry to the university, but the curriculum structure makes it highly advisable to do so. Some programs, such as Music and Dance, also require passing an audition for admissions. Some majors encourage early declaration by limiting course enrollment to declared students. Sometimes it is the course sequence and sometimes it is the nature of the work (e.g., music courses cannot be stacked in senior year and music majors enter college with expertise in the field). Examples of programs in which students usually start as freshmen include Music, Dance, Art, Design Studies, Dairy Science, and Food Science.

**Options for Action**

We have identified a number of options for reducing time to degree at the campus level and the college level. This is not an exhaustive list but identifies those options most promising. Options are listed below in an approximate order of priority with regards to ease of implementation and potential impact.
Some actions can be taken to improve 4-year graduation rate but simultaneously have a negative impact on other strategic priorities or cultural practices. It is assumed that a process for exceptions applicable to individual situations with compelling circumstances would exist with any adopted policy option.

1. **Major declaration/admission:** Require major declaration or admission prior to the 5th semester of residence as a matter of campus policy.
   - Pushing declaration too early is counter to the developmental/educational needs of undergraduates. Forced declaration prior to the 3rd semester as a matter of campus policy may create new problems.

2. **Enforce prerequisites:** Enforcement of course prerequisites during registration could reduce D/F/W rates particularly in early foundation courses where students may be inexperienced in judging their competency. Rather than a default condition of no enforcement, “consent of instructor” could provide an avenue for accommodating exceptional situations where student should progress even though they do not meet the stated prerequisites. Consistent with this action, studies of student performance in STEM courses have shown that weaker students tend to overestimate their understanding of course materials and high achieving students tend to underestimate their understanding.

3. **Plan a 4-year graduation:** Use the current student information system capability to record for each student an intended date of graduation. This data field is currently left blank and is not used. The University could combine recording of this entry with a communication and advising strategy that has each student promptly planning for degree completion after matriculation.

4. **Limit multiple-majors:** Restrict declaration of second and third majors to students who have made substantial progress towards the requirements of their first major and/or students whose time-to-degree will not be impacted by the additional credential.
   - Students who would educationally benefit from an additional major or certificate may be discouraged from pursuing it.

5. **Limit multiple admission attempts:** Some students repeatedly apply to the same limited enrollment program and repeated attempts (particularly the attempts that are more hopeful than realistic) delay graduation when students are forced to select a different major relatively late in their academic career. Currently there are no policy or practice standards for admission requirements to limited enrollment undergraduate programs. The catalog of such requirements is out of date. While limitations on multiple admission attempts has potential to improve 4-year graduation rates, we did not have adequate information on these programs to either propose a single-solution campus level policy or to know if a single-solution policy is in the best interest of the campus. This option would require more study and direct communication with these programs to understand their unique policies and constraints.

6. **Early intervention:** Implement early detection systems to identify and intervene with students at high risk for D/F/W in core courses. Such systems can never be completely reliable and false positives could lead to accusations of stereo-type threat (this assumes the identification would include demographic factors). An additional issue is that we are not currently recording in ISIS most of the high school preparation data that would be necessary to make more accurate
predictions. Doing so would require increased staffing and better integration of Admissions staff into the academic needs of the institution.

7. **Behavioral issues**: Highlight the linkages between destructive behaviors (such as alcohol abuse) and academic success. Teach more Friday classes and encourage exams and quizzes on Fridays and Mondays. Move to an active learning environment that is beneficial to students at risk and encourages positive behaviors in and out of class. Enact stricter penalties for underage drinking.

8. **Examine programs with unfavorable comparison to peers**. Ask programs with a comparatively high time to degree to identify contributing factors and implement interventions when possible. Possible causes related to curriculum might prompt curricular reform.

9. **Full time credit load**: Create policies or incentives that encourage student to enroll in 15 or 16 credits per semester. Have full time status start at 15 credits rather than the current 12.
   - Many students work part time (and full time) to cover expenses. Requiring higher credit loads will negatively impact students who work part time out of necessity.
   - Students whose preparation is not as strong may not be able to handle 15 to 16 credits as freshmen.

10. **Tuition surcharges based on number of credits completed**: Currently there is a UW System mandated tuition surcharge for Wisconsin resident students who remain enrolled with 165 or more credits. Since graduation typically requires 120 to 130 credits, surcharges implemented at a lower level could encourage timely degree completion.

11. **Strengthen financial aid**: Increased discretionary financial aid directed to the financially neediest students should increase the likelihood they will stay enrolled full time at a higher credit load.

**Summary**

UW-Madison’s 4-year graduation rate is low compared to peers with similar 6-year graduation rates. This study has examined possible causes and remedial actions to address this discrepancy. While making significant improvements is challenged by the complex web of policies and behaviors that lead to the current 4-year graduation rate, there are a number of actions possible as identified in this report. Care must be taken in moving forward to minimize unintended negative consequences related to access and equity.