Improve Student Course Outcomes Through Course Redesign

A More Holistic View of Student Success

Evolution of Student Success From Support Services To Academic Experience

Student Success Initiatives Can No Longer Ignore What Happens Inside the Classroom

Student success research over the past decade has often focused on support systems outside the classroom such as new advising models, degree planning, financial aid, and living-learning communities.[1] What happens inside the classroom, of course, is critical for student success. Even non-academic risk factors often show up first as issues with attendance or mid-term grades.

While many institutions have made significant progress through non-instructional approaches to student success, a growing body of research has looked at how changes to the classroom experience can measurably improve student learning, retention, and graduation rates. This "evidence-based pedagogy" is now solidly grounded in both science and practice, but its use has been slow to spread.

Course Completion Rates Are an Important Indicator for Student Success

One effective way to identify opportunities for improvement is to analyze course completion rates. The completion rate is simply the percentage of students enrolled in a course at the census date who receive credit for it. The inverse is often referred to as the DFW rate, or the percentage of students who receive a failing grade (D/F) or withdraw from the course (W). Courses with very high DFW rates or large numbers of students who do not complete then become priorities for increased investment, support, and redesign.

Institutional DFW rates typically range from 15%-30%, meaning that hundreds or thousands of students are currently sitting in (and paying for) a class for which they will not receive credit. Failing (or even withdrawing from) a class can lead to a number of negative outcomes for a student:

- Less likely to be retained
- Longer time to degree (and therefore higher cost of degree)
- Potential to lose financial aid if course load drops below full time status
- Potential to lose scholarship if GPA drops below minimum

An analysis of data from 10,000 first-time college students at the University of Wisconsin at Madison, for example, found that six DFW credits led, on average, to an extra four months of time to completion.[2] DFWs also increase institutional costs and reduce instructional capacity as students are forced to repeat courses or take additional courses to meet degree requirements.

1) See, for example, EAB's Hardwiring Student Success, Guiding Student Choice to Promote Persistence, A Student-Centered Approach to Advising, Defining the Faculty Role in Student Success, Promoting Timely Degree Completion.
2) University of Wisconsin-Madison, Predictors of Time-to-Degree for Recent UW-Madison Undergraduates, December 2014.

Improve Outcomes While Maintaining Academic Rigor

Course Redesign Critical to Improving Gateway Course Completion Rates

Some Faculty Remain Skeptical that Improving Pedagogy Is Either Necessary or Possible

While high DFW rates (30%-40%) are typical for many gateway courses, some faculty remain skeptical of attempts to improve course completion rates. Common concerns include:

- Belief that high course failure rates are due entirely to poorly prepared students, increasing class sizes, and greater use of adjunct instructors (i.e., factors outside of faculty control)
- Concern that calls to improve course completion rates are actually implicit demands to reduce the rigor of instruction
- Perception that efforts to improve course completion rates represent administrative interference in teaching
- Fear that course redesign is just a way to enlarge class sizes and increase faculty workload
- Use of gateway courses to screen out students and limit entrance to oversubscribed majors
- Frustration that giving more resources to instructors with low completion rates is "rewarding bad teachers"

Recognizing and addressing faculty concerns is essential to making progress. Pedagogical conversations that focus on blaming weak students (or weak instructors) for poor outcomes are rarely productive.

Hundreds of Successful Course Redesigns Have Demonstrated That Completion Rates Can Be Improved Without Sacrificing Rigor

Research indicates that there are a number of effective ways to increase course completion rates without reducing rigor. NCAT, SCALE-UP, Gateways to Completion, and other course redesign initiatives have demonstrated through hundreds of implementations that changes in pedagogy can measurably improve completion rates and student learning outcomes even at larger class sizes. In many cases, institutions have also succeeded in reducing instructional costs while improving outcomes.

Central to all of these approaches is a shift in teaching philosophy from "screening out" underqualified students to identifying the barriers that students face and providing additional support to enable them to reach high academic standards.

Improving Gateway Course Completion Rates More Than Just a Matter of Pedagogy

Research has shown that redesigning the pedagogical model for gateway courses can measurably improve student success, but complete course redesigns can be expensive, time-consuming, and politically challenging. Simply adding supplemental instruction or early-low stakes assessments, for example, can also have a major positive impact but with significantly less effort. Many approaches to pedagogical innovation require the engagement of instructors, but they do not depend on having large numbers of faculty fundamentally rethinking their teaching philosophy.

Four Steps to Address Course Completion Rates

1. Size the Opportunity

While every institution recognizes that some students do not complete some courses, many are surprised when they actually analyze the data. Quantifying DFW rates at the institutional, college, department, and course level can help administrators and faculty understand just how many credits are being lost and how many students are being negatively impacted.

It is important to look at both the DFW rate (the percentage of students who are not completing a course) and the absolute number of credits lost due to DFWs. Often a very large course with a relatively low DFW rate will impact more students than a very small course with a high DFW rate.

Sharing these data widely across campus can stimulate productive conversations about how to understand the DFW challenge and how to respond to it.

2. Identify Root Causes

While counting incomplete credits is relatively straightforward, determining why students are not passing courses is often significantly more difficult. Common findings include:

- While lack of academic preparation certainly contributes to the issue, high school GPA and standardized test scores are often poor predictors of first semester course performance.[1] Even highly selective institutions face high DFW rates in certain programs and courses.[2]
- Students often struggle in their first year for non-academic reasons (financial, personal, emotional, etc.). While individual instructors may not be able to address these issues in class, these challenges often manifest first as absences or failing grades. Instructors can identify early warning signs and pass them to advising and counseling staff.
- Institutional data typically shows that instructor variation (i.e., large variations in DFW ranges among different instructors teaching sections of the same course) is often a major driver of higher DFW rates. Variability in instructor DFW rates is often due not to differences in student preparation but rather differences in grading philosophy or a lack of standardization of assessments across multiple sections of a single course
- Some institutions have found that certain courses have higher DFW rates for students with different socioeconomic or demographic characteristics (e.g. first generation, underrepresented minority). Identifying these disparities is an important first step in understanding which pedagogical approaches are more or less effective for different types of students.[3]

1) IUPUI, "Promoting First-Year Success," 2010.
2) UCLA, "Enhancing Student Success and Building Inclusive Classrooms at UCLA" December 2015.
3) Ibid.

Four Steps to Address Course Completion Rates (cont.)

3. Prioritize Resources

It is not possible (or necessary) to redesign the majority of courses taught on any campus. Given limited time and resources, it is critical to focus on those courses that have the largest impact on student success and where pedagogical innovation has the most support.

- Look at courses with high DFW rates and high absolute numbers of lost credit hours
- Consider courses with high variability in DFW rates by instructor or by student group
- Focus on high-enrollment courses, especially those with capacity constraints
- Emphasize gateway courses that are major requirements or critical prerequisites
- Start with courses where the instructors are excited by the opportunity to improve student outcomes
- Prioritize courses where the chair and dean are also supportive

4. Engage Faculty

Ultimately, faculty are responsible for what happens in the classroom, and no changes to pedagogy can or should be made without their leadership. It is important to recognize, however, that faculty face many barriers to adopting new approaches in the classroom.[1]

Barrier to Faculty Engagement	Potential Solution
Unaware of the impact of high DFW rate on students/department/institution	Share data on DFW rates at the department and course level regularly
Unfamiliar with new pedagogical approaches	Workshops run by Teaching and Learning Center, faculty learning communities, support for scholarship of pedagogy
Skeptical of new pedagogical approaches	Visits and demonstrations from nationally recognized faculty who have successfully implemented new teaching approaches
Lack time to redesign course/ learn new approaches	Course releases, summer funding, sabbaticals and other support for pedagogical innovation
Concerned that extra effort on teaching will not be rewarded in tenure or promotion	Institutional awards and recognition for teaching excellence, differentiated faculty roles (that emphasize teaching over research)
Worried that new pedagogical approach or technology will fail	Opportunities to experiment with new approaches in low stakes environments
Hesitant that students may respond negatively to new approaches, lowering student evaluation scores	Robust approach to measuring learning outcomes before and after new pedagogical innovations

It is critical to recognize that this work needs to be done by the faculty and that faculty require time and resources to engage in the challenging but productive work of course improvement. While all institutions have a handful of passionate faculty innovators, relying on the intense devotion of a handful of instructors will not be sufficient to make a measurable impact across multiple sections, multiple courses, and multiple departments. A coordinated effort to provide resources, support, time, and incentives is essential.

1) EAB, Scaling Learning Innovations.

Course Redesign Diagnostic

Early and Frequent Low-Stakes Assessment

Analysis to Run

How predictive of final gateway course grades are multiple absences and pre-midterm assessments?

Assessing Current Practice	Yes	No
Are students assessed multiple times outside of the midterm and the final?	☐	☐
Do faculty provide feedback and information on relevant campus services based on those assessments?	☐	☐
Do on-going assessments make up a small percentage of a student's overall grade?	☐	☐
Do on-going assessments use various testing approaches (e.g., multiple choice, short essay, online or computer-based mini-tests, etc.)?	☐	☐

If you answered no to any of the above, see Four Strategies to Improve Couse Completion Rates on eab.com

Standardized Assessment

Analysis to Run

Are DFW rates generally consistent among instructors teaching the same course?

Assessing Current Practice	Yes	No
Do faculty teaching sections of the same course jointly determine the expected learning objectives for the course?	☐	☐
Do faculty teaching sections of the same course use a shared approach to assessments?	☐	☐
Do faculty teaching sections of the same course agree upon a common set of course materials like textbooks and readings?	☐	☐
Do faculty agree upon a uniform approach to grading homework, projects, and exams?	☐	☐

If you answered no to any of the above, see Four Strategies to Improve Couse Completion Rates on eab.com

Course Design Diagnostic (cont.)

Active Learning

Analysis to Run

Do student surveys (NSSE, course evaluations) indicate high levels of active learning across all departments?

Assessing Current Practice	**Yes**	**No**
Do students report being engaged in class?	☐	☐
Are small scale active and blended learning pilots and initiatives communicated across the faculty?	☐	☐
Do faculty receive training and resources on a variety of pedagogies	☐	☐

If you answered no to any of the above, see Four Strategies to Improve Couse Completion Rates on eab.com

Supplemental Instruction

Analysis to Run

Do students who attend additional tutoring or supplemental instruction show measurable improvement?

Assessing Current Practice	**Yes**	**No**
Do courses with high failure and withdraw rates direct students to corresponding supplemental instruction sections?	☐	☐
Do faculty discuss and illustrate to students how supplemental instruction can increase their chances of success in the course?	☐	☐
Do supplemental instruction sections apply interactive learning opportunities for students?	☐	☐

If you answered no to any of the above, see Four Strategies to Improve Couse Completion Rates on eab.com

Course Design Diagnostic (cont.)

Intensive Early Start Cohorts

Analysis to Run

Do academically at-risk students earn credits at a slower rate than other students in their first semester?

Assessing Current Practice	Yes	No
Are borderline admitted students required to participate in some kind of bridge program?	☐	☐
Can students participating in bridge programs gain credits towards their degree?	☐	☐
Can students apply financial aid to cover the costs of summer bridge programs in which they participate?	☐	☐

If you answered no to any of the above, see Build Academic Confidence Through Pre-College Programs on eab.com

Accelerated Catch-Up Terms

Analysis to Run

Do students who drop a class take longer to graduate?

Assessing Current Practice	Yes	No
Are students who drop or withdraw from a course partway through the term given an alternative option to fill in that coursework?	☐	☐
Are accelerated format courses available?	☐	☐
Are students who drop below full-time losing their financial aid status due to course withdrawals?	☐	☐

If you answered no to any of the above, see Create Safeguards for Off-Track Students on eab.com

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