Improving Gateway Course Completion Rates

Analyses and Tools to Improve Student Outcomes in Critical Gateway Courses
1. **Course Completion as a Student Success Imperative**

2. Four Steps to Addressing Course Completion Rates

3. Tactics for Improving Course Completion Rates
Student Success Depends on Course Completion

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

Course Completion Rates Are an Important Indicator for Student Success

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

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

Improving Gateway Course Completion Rates More Than Just a Matter of Pedagogy
Obvious but Often Overlooked

What Happens in the Classroom Is Critical to Student Success

Most Common Student Success Approaches Focused Outside the Classroom
- New advising models
- Enhanced financial aid
- Living-learning communities
- Degree planning
- Best-fit majors

Growing Research on the Science of Pedagogy
- Improve learning
- Improve engagement
- Improve retention
- Improve graduation rates
A Large Body of Empirical Research Supports Course Improvement

**Course Redesign**
- Supports institutions in course redesign efforts aimed at improving student learning and reducing costs
- Over 195 redesign projects undertaken

**Active Learning Environments**
- Active learning classroom design developed by North Carolina State University meant to scale active learning to large courses
- Over 250 institutions SCALE-UP sites in the US

**Gateway Course Assessment & Improvement**
- Comprehensive gateway course improvement processes involving analytics and F2F and virtual course redesign support communities
- 39 participating colleges and universities
1. Course Completion as a Student Success Imperative

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Four Steps to Addressing Course Completion Rates

1. **Size the Opportunity**
   - Quantify DFW rates at the institutional, college, department, and course level
   - Look at both the DFW rate and the absolute number of credits lost due to DFWs

2. **Identify Root Causes**
   - Academic preparation
   - Nonacademic challenges
   - Instructor variation
   - Student socioeconomic and demographic characteristics

3. **Prioritize Resources**
   - Courses with high DFW rates and high absolute numbers of lost credit hours
   - Courses with high variability in DFW rates by instructor or by student group
   - High-enrollment courses, especially those with capacity constraints
   - Gateway courses that are major requirements or critical prerequisites

4. **Engage Faculty**
   - Identify interested faculty
   - Provide time, financial resources, pedagogical support, and incentives
   - Address faculty concerns about lowering standards
A Few Courses Generate Most Unproductive Credits

Improving Large Gateway Courses Has Disproportionate Impact

**Attempted and Unproductive Credits from Top 20 Largest Courses**

- **All Course Offerings**
  - Attempted Credits: ~1%
  - Unproductive Credits: 22%

- **Top 20 Largest Courses**
  - Attempted Credits: 22%
  - Unproductive Credits: 35%

Source: EAB interviews and analysis.
## The Usual Suspects

Most Institutions Leaking Credits from Same Intro Courses

### Course Completion Rates in Gateway Courses at Seven Universities

<table>
<thead>
<tr>
<th>Regional Comprehensive</th>
<th>Institutional Completion Rate</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pass</td>
<td>DFW</td>
</tr>
<tr>
<td>70%</td>
<td>30%</td>
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</table>

<table>
<thead>
<tr>
<th>High-Research Comprehensive</th>
<th>Institutional Completion Rate</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pass</td>
<td>DFW</td>
</tr>
<tr>
<td>54%</td>
<td>46%</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Very Large Research</th>
<th>Institutional Completion Rate</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pass</td>
<td>DFW</td>
</tr>
<tr>
<td>68%</td>
<td>32%</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Small, Teaching-Focused</th>
<th>Institutional Completion Rate</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pass</td>
<td>DFW</td>
</tr>
<tr>
<td>61%</td>
<td>39%</td>
</tr>
</tbody>
</table>

### Average Unproductive Credit Rate

<table>
<thead>
<tr>
<th>Course</th>
<th>Rate</th>
</tr>
</thead>
<tbody>
<tr>
<td>Calculus 1</td>
<td>37%</td>
</tr>
<tr>
<td>General Biology</td>
<td>20%</td>
</tr>
<tr>
<td>Chemistry 1</td>
<td>27%</td>
</tr>
<tr>
<td>General Psychology</td>
<td>12%</td>
</tr>
</tbody>
</table>

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1) Academic Performance Solutions data and analysis.

Source: EAB interviews and analysis.
Not Just the Student’s Fault

Failure Rates Vary Drastically, Even Within a Single Course

Instructors Often a Major Source of Variability

Completion Rates for Sections of Same Course at More Selective, Public Research University

Source: Academic Performance Solutions data and analysis; EAB interviews and analysis.
Prioritizing Investments in Course Redesign

Identify Courses Where Improvements Would Have the Greatest Impact

Course Redesign Prioritization Criteria

- **Redesigns entire courses within a department, rather than individual sections**
- **Targets general education, introductory, and/or prerequisite gateway courses**
- **Targets courses with historically high DFW (D/F/withdraw) rates**
- **Targets high-enrollment courses with seat capacity constraints**

- **Demonstrates support from departmental faculty, chairs, and deans**
- **Includes a plan for financial sustainability and/or an overall reduction in costs**
- **Describes how the course will use technology to reduce costs and improve outcomes**
- **Preserves academic rigor and course content while adapting delivery methods**

For more information and resources, see the National Center for Academic Transformation’s online repository at thencat.org

Source: EAB interviews and analysis.
The Role of Faculty Learning Communities in Course Redesign

Phase 1: Exploratory FLC
- Members pursue individual pedagogical exploration
- Share practice, outcomes, and assessment
- Build consensus around effective pedagogy

Outcome: Multiple instructors engaged in individual and collaborative redesign efforts

Phase 2: Collective Action FLC
- Agree on common structural elements
- Pilot unified approach + share feedback
- Ongoing discussion and course material development

Outcome: Development of shareable resources and clear recommendations for common practice

Calculus I Delivery

Redesign Continuum
~16-month period

Source: EAB interviews and analysis; Bullock D, Callahan J, Shadle S, Coherent Calculus Course Design: Creating Faculty Buy-in for Student Success, 122nd ASEE Annual Conference & Exposition, 2015.
Addressing Faculty Concerns

When You Say “Reduce DFWs,” They Hear “Lower Academic Standards”

Common Faculty Concerns About Course Redesign

**Factors Out of My Control**

High course failure rates are due entirely to poorly prepared students, increasing class sizes, greater use of adjunct instructors.

**Administrative Overreach**

Efforts to improve course completion rates represent administrative interference in teaching.

**We Need to Weed Out Students**

Gateway courses need to screen out students and limit entrance to oversubscribed majors.

**Reduces Institutional Rigor**

Calls to improve course completion rates are actually implicit demands to reduce the rigor of instruction.

**Way to Increase Workload**

Course redesign is just a way to enlarge class sizes and increase faculty workload.

**Rewards Bad Teaching**

Giving more resources to instructors with low completion rates is “rewarding bad teachers”
Identifying DFWs Through the Platform

Leveraging the Advanced Search Functionality
The Case of Middle Tennessee State University

Refining and Expanding Learner Support to Improve Outcomes

Course Redesign

Campus analytics allowed leadership to identify which courses were the greatest predictors for future student success.

Graduation Rate in HIST2010 by Grade Earned

Targeting Support Services

Students in predictor courses receive additional learner support, including free tutoring and supplemental instruction.

27 Courses officially redesigned to date.
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3. Tactics for Improving Course Completion Rates
Tactics for Improving Course Completion Rates

**Assessment**
1. Early and Frequent Low-Stakes Assessment
2. Standardized Assessment

**Instruction**
3. Active Learning
4. Supplemental Instruction

**Course-Level Advising**
5. Course Behavior Alerts
6. Automated Withdrawal Advising

**Pre- and Post-Course Support**
7. Growth Mindset Priming
8. Intensive Early Start Cohorts
9. Accelerated Catch-Up Terms
Tactics for Improving Course Completion Rates

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Supplemental Instruction

Challenges to Scaling Tutoring

- Tutors have limited capacity
- Students uncomfortable with one-on-one attention
- Tutors unfamiliar with specific course section content
- Students ashamed they’re struggling
- Students don’t know what questions to ask

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Supplemental Instruction

Scaling Additional Academic Support

Supplemental Instruction Demonstrates Measurable Impact at MTSU

Scaling Academic Support

- Targets high-enrollment courses and high-DFW courses
- Peer-assisted group study and discussion sections meet several times per week
- Sessions cover difficult course concepts, study skills, test prep, communication skills

Source: “MTSU Unveils Reforms Geared to Improve Student Success,” mtsunews.com; “Quest for Student Success 2013-2016,” MTSU, http://www.mtsu.edu/docs/QuestforStudentSuccess.pdf; Supplemental Instruction at MTSU, mtsu.edu/si; EAB interviews and analysis.
Supplemental Instruction

Implementation Guidance

1. **Determine Which Courses to Target**
   Target large courses, particularly those that are lecture-based, courses with high DFW rates, general education courses, and critical gateway courses.

2. **Increase Student Engagement**
   Show students how supplemental instruction can improve learning by providing data on the performance of those who did and did not participate—this is particularly effective coming from instructors.

3. **Improve Student Learning**
   Create an active learning environment where students are able to ask questions and have input on the focus of supplemental instruction sessions. Use mini-assessments to help identify where students need the most support.

Source: EAB interviews and analysis.
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Course Behavior Alerts

Reaching Out to Students with Two or More Absences

Attendance Tracking at Mississippi State Boosts Student Outcomes

Percentage of Students with 3+ Absences by Midterms

- 32% No Absences
- Over Three Absences

Average First-Year GPA

- 1.98
- 2.96

Sophomore Year Retention

- 64%
- 89%

Course Absence Intervention at Mississippi State

- Faculty manually track attendance
- Attendance alerts sent to support staff and RAs
- RAs contact students with 2+ absences
- 62% of students resolved attendance issues

Source: Mississippi State University, Starkville, Mississippi; EAB interviews and analysis.
Course Behavior Alerts

Implementation Guidance

1. Implement a Simple Reporting System
   Provide faculty with a single referral point for any student concern. Reporting should be built directly into the electronic course rosters, and submissions should auto-populate with the relevant course and student data.

2. Permit and Encourage Assistants to Submit Alerts
   Teaching assistants and resident assistants should be encouraged and enabled to submit alerts since they have frequent contact with students. Include early alerts in teaching assistant job descriptions to normalize compliance.

3. Contacting Students
   Emphasize next steps, not alert status and ensure alerts are handled in a way that is sensitive to both faculty and students with regard to privacy, tone, and intervention triggers.
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Why Students Withdraw

Some Withdrawals Are Unavoidable; Others Are Not

Students have many reasons for choosing to withdraw from a course or the institution

Some are “good” reasons

“I’m avoiding a failing grade”

“I’m overwhelmed and worried about my grades in other courses”

Many are “bad” reasons

“I’m not earning the grade I want”

“I dislike the instructor”

“I don’t want to get up this early”

“I’ve lost interest in the material”

Suboptimal advising practices let too many students make “bad” choices

Structure

Few institutions require an advising meeting prior to withdrawing

Quality

Some advisors simply rubber stamp all withdraw requests

Capacity

Even the best advisors cannot always dedicate adequate time to assessing all requests

Absent a meaningful conversation, many students do not understand the long-term implications of their withdrawal decisions

Source: EAB interviews and analysis.
Automated Withdrawal Advising

**Are You Absolutely Sure?**

Penn State’s Online Withdrawal Process Highlights Implications

**Each Stage of Module Provides New Information and Opportunity to Back Out**

<table>
<thead>
<tr>
<th>Broad Implications</th>
<th>Initial Student Decision</th>
<th>Personalized Advice</th>
<th>Final Student Decision</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lists impact on aid, time to degree, standing, grades, benefits, and enrollment status</td>
<td>For course drop, student inputs major, reason for drop, and anticipated grade</td>
<td>Based on info provided in previous step and student degree audit</td>
<td>Re-lists implications</td>
</tr>
<tr>
<td>For withdrawal, student selects from list of 22 academic and non-academic reasons</td>
<td></td>
<td>Requires student password to confirm final decision</td>
<td></td>
</tr>
</tbody>
</table>

40% Students dissuaded from course drop

1) Estimate based on 2012 withdrawals

Source: EAB interviews and analysis.

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Automated Withdrawal Advising

Implementation Guidance

1. **Direct Withdrawing Students to Meet with Advisor**
   Advisors can use survey data to help students develop a personalized plan to complete their degrees at the institution.

2. **Simplify Withdrawals for Necessary Reasons**
   Permit students to withdraw for health or family reasons without encountering bureaucratic roadblocks.

3. **Use Survey Data to Better Predict Attrition Risk**
   Student characteristics and commonly selected reasons for withdrawal should be used to identify where resources may need to be expanded or better targeted.

Source: EAB interviews and analysis.
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Intensive Early Start Cohorts

**Summer Bridge to Nowhere**

Traditional Bridge Programs Lack Graduation Impact

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The Summer Bridge Program (SBP) is a four-week program [for] select first-time freshmen students [...] 

**Participants take math and English workshops**, designed to...

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...is designed for students from our partner high school and **students who self-identify as students of color or new American** [...] focuses on mentoring, community building, grit and identity development...

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No credit for remediation or skills courses

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Confidence undermined by being classified “at-risk”

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Getting a Head Start on Credit Momentum

Four-Step Guide to a Financially Sustainable, Credit-Bearing Summer Start

1. Mandatory “retroactive enrollment” of borderline admits in summer of previous academic year
   - High GPA
   - Low SAT
   - Low GPA
   - High SAT

2. Students must fill out two FAFSAs

3. Enroll in 6+ summer credits in core requirements
   - English (3 credits)
   - History or Political Science (3)
   - FY Orientation (1)

4. Students gain summer aid but lose regular 12th-term Pell eligibility

Credit Momentum Gains Outweigh Pell Eligibility Risk
Success Academy participants get head start on credit accumulation and expected to graduate in fewer than 12 terms.

Source: EAB interviews and analysis.
Intensive Early Start Cohorts

A Sprinting Start for Our Riskiest Students

Boosting Credit Accumulation and Confidence

Head Start on All-Purpose Credits

Day One Credit Accumulation

Raising the Retention Average

Fall-to-Fall Retention, Borderline Admits

Easily Clearing GPA Expectations

A Tool for Building Grit

“The role of Success Academy (SA) is not just to create flexibility, but also to build confidence and show students they are capable of college-level work. Students with some on-campus experience under their belt will do better in challenging courses later on.”

Tim Renick
Vice President, Georgia State University

Sources: Timothy Renick, “Georgia State University’s Student Success Initiatives,” Georgia State University: http://oie.gsu.edu/files/2014/04/Student-Success-Award.pdf; EAB Interviews and Analysis.
**Implementation Guidance**

1. **Ensure Students Take Productive Credits**
   
   Target lower-division gateway courses with high student fail or withdrawal rates—frequently English, writing, and math courses—and offer courses that apply to all majors to ensure credits remain productive even if a student changes his or her intended major.

2. **Provide Students with Targeted Support Services**
   
   In addition to traditional advising activities, build students’ financial literacy and study skills. Help students succeed in their courses by requiring them to attend support services such as tutoring and supplemental instruction as a group.

3. **Keep Program Messaging Positive**
   
   Frame participation in the program as exclusive, similar to a special session for honors students or athletes. To prevent students from feeling discouraged, do not use "at risk" in any student-facing documents.
Introducing the Course Completion Playbook

The Course Completion Playbook

Analyses and Tools to Improve Student Outcomes in Critical Gateway Courses