Fail-to-Succeed Exams

Turn panic into progress: Two exam attempts in one class period allow students to learn from mistakes.

Basic Information

Time Required

Instructor Prep: 60 min
In-Class: 60 min
Out-of-Class: 0 min

Context

Department/Area: Mathematics
Affiliation: UT Austin
Group: TxMI
Course Size: Medium (31-80)

Author


Tara Craig

Other Contributors

Eric N Smith (Editor)
Kristin Patterson (Reviewer)

Practice Overview

Fail-to-Succeed Exams give students two attempts on each exam within the same class period, with immediate feedback after the first try. This approach helps students learn from mistakes in real time, reduce test anxiety, and demonstrate true understanding.

Downloadable Resources

Fail-to-Succeed Exams - Student-Facing Instructions (.docx)

Fail-to-Succeed Exams - Instructor Implementation Notes (.pdf)

My Story

Introductory math courses are often a major obstacle for college success. Even the strong UT Freshmen come into my math courses with the perception that they are terrible at math and hate math. They come to UT as the top students at their school and they think "if I refuse to fail, I will be successful in math" which creates a lot of math anxiety, particularly around high stakes assessments.

The problem is that failure is an essential task towards success, not only in mathematics, but in all fields. One issue I observe again and again is students' fear that if they fail it means that they are not cut out for math or more broadly they do not belong in their major or even at UT. I have never had a first draft of a research article ready for print, and I would be willing to bet that Leonardo Di Vinci threw a few canvases in the garbage bin before finishing the Mona Lisa. So I want to teach my students how to fail well by reflecting on their failures, making necessary revisions, building on past failures and even finding those past failures to one problem that may be exactly what you need for a different problem.

To do so, I allowed my students to take every exam twice within the same class period. I wanted to ensure my students knew it was not only okay to make mistakes, but necessary. What matters is what you do with those mistakes. A major theme in my classroom is what to do, when you don't know what to do. Everyone can get it wrong, right?

What does this practice look like?

With each summative assessment, such as a midterm exam, my goal is to best determine what I have taught my students. Exams are normally a mix of computation and conceptual questions that build on the content skills as well as the thinking skills focused on during the course. In the past, a student may get a question wrong due to a small "careless error" and if this question did not offer partial credit, the assessment would measure this as if the student does not know that topic. I also found that we would spend so much time grading and providing feedback to students, then when exams were returned students would look at the numeric score and go on with their day. This lost opportunity for students to learn and reflect brought me to the Fail to Succeed exam format.

So I tried something new: I allowed my students to take every exam twice within the same class period. On each exam, students are given 75 minutes to take the exam (T/Th) or 60 minutes (MWF) and provided two attempts within that time frame to take the same exam. After they submit the first time, the exams get automatically graded and students see which ones they got wrong. They don't see the correct answer, so they need to figure out what exactly went wrong. Often it was only a small computation error, other times they needed to really delve into the problem again and try something completely different. This format provides a last chance to learn the content from their mistakes and build their confidence in problem solving.

This format also affords students autonomy over their assessment by providing choice on how to divide their timing on each attempt, based on what works best for them. Some students will take a long

time on the first attempt and really give it their all, while other students go through the first attempt quicker so they leave themselves more time for the problems they got wrong.

How did it impact students?

Between the first and second attempts of the exam, students earned an average of 21% higher scores on exams. This really helped them build confidence and show what they were capable of doing--not just what they could do on a first attempt. Students' feedback was overwhelmingly positive about this testing. As one student wrote,

> *"...the 'Fail to Succeed' exam format has really opened my eyes to the importance of truly understanding concepts, no matter what grade I receive."*

Another student wrote,

> *"As a rather test-anxious person, I always find myself checking my answers 3-5 times, even if I am very confident... With the "Fail to Succeed" exam format, there is much comfort in knowing that I will be graded on what I know rather than how good I am at taking tests."*

Implementation Tips and Resources

Here are a few tips that can help you be successful with this practice:

1. In Canvas or other LMS, enable two attempts, keep the highest score and show missed items only (no answers) after the first submission. This gives students targets without handing them solutions.
2. Be sure to set up students expectations for what these exams look like and why you are doing it. See the "Instructor Implementation Notes" attachment above for more details.
3. Although I have not implemented in-person exams, you could design the exam in such a way that students can fold the paper exam in half, stand up, and manually enter the letter/numeric answers on a clicker or cell phone testing application for immediate feedback.