

## Differentiating Assessment

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*This article is reprinted, with the permission of the author, from a post to the blog Real Teaching Means Real Learning on May 16, 2018. Minor amendments have been made in accordance with ATA style.*

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*The primary purpose of assessment is to improve student learning.*

*—Anne Davies, PhD*

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The quote above sums up why I challenged my assessment practices. In 2013, as a high school math teacher, here is the model I used:

- Teach concept
- Various quizzes during the learning journey
- Summative unit exam
- Repeat

After eight years of teaching in this model, I realized there was an issue: students who entered my class with a passion for mathematics were leaving the class beaten down, sometimes dropping out and, ultimately, not having the desire to learn more math.

Originally, I thought this was normal! When I went to high school, math classes always ended with fewer students than they started with. As a student, I remember daily expectations of having to do the odd- (or even-) numbered questions on page x, multiple worksheets, and having to prepare for weekly quizzes or tests. This was my normality. This was the machine I wanted to perpetuate when I entered teaching.

Why?

Because this worked for me. I am intrinsically motivated by mathematics, and I find prime, Fibonacci and complex numbers inherently interesting ... because they are! However, too many people have not had the chance to struggle, discover and play with these (and other) awesome mathematical ideas.

In 2013, as an educator, I saw the true problem—my assessment style was more about ranking, sorting and grading, not at all about learning. Furthermore, I was more focused on preparing students for AP or

diploma exams, instead of creating an environment that allowed students to bring their passions and interests in, next to their pencils and paper. My grades were focused on what was easy to test, grade and report on, instead of what was important.

This had to change. If I was differentiating my instruction, why was I focusing on standardizing my assessment?

In 2013, I made a stand: I will only assess in a way that increases learning; if my assessment isn't increasing learning, then the assessment needs to change.

In this year, my late friend Joe Bower reminded me that “the word *assessment* comes from the Latin word *assidere*: to sit beside,” an action that was rarely taken when I was assessing my students.

Here is my journey, along with the steps I took to explore what it means to provide differentiated assessment.

### Manageable Outcomes

In consultation with university professors, colleagues and teachers across the province, I looked at every course outcome through the “Rock, Sand, Water” analogy: if you plan for the rocks first, then sand and then water, it will all fit; however, if you simply plan a course to cover all outcomes equally, all the outcomes will rarely fit.



During this process, I combined parts of one outcome with another, broke up some outcomes into smaller chunks and then created a list of rock, sand and water objectives:

- Rock outcomes (outcomes that pass the endurance, leverage and readiness test)—expect *all* students to master
- Sand outcomes—expect *most* students to master
- Water outcomes—expect *some* of my students to master

I then ensured that these decisions were reflected in my long-range outcomes, course outlines and daily plans. I planned my courses to ensure that the essential learning outcomes were woven throughout the entire year, while less essential outcomes were covered through the lens of a higher-leverage outcome. Of course, I still taught all the outcomes, but I decided to report on only the essential ones, regardless of how difficult it might be to do so.

## Change the Tests

Having a smaller list of outcomes to report on, I decided to ensure that my summative assessments matched this philosophy. Instead of giving tests grouped by question type, I grouped questions based on outcome. Any assessment that covered more than one outcome would be given back to students with more than one grade. Each grade represented the learning of the student on a specific outcome; no longer did I average two or three outcomes into one mark and call it “Unit X Test.” I then changed the categories on the online reporting program to “Outcomes” instead of “Quizzes, tests, homework, etc.” Every mark, on a specific outcome, was reported in the corresponding outcome category.

## Ensure That Learning Is the Focus on Every Assessment

During this time, my summative assessments were one part multiple choice, one part numerical response and one part written, simply scored by outcomes, not by question type.

I quickly realized that when my students answered a multiple-choice question wrong (or even when they guessed right), I was clueless as to how to support them from their current understanding to mastery. If I wanted learning to be the primary focus, I could not administer multiple-choice exams.

In 2014/15, I moved to an entirely written-response assessment strategy grouped by outcomes. Instead of one part multiple choice, one part numerical response

and one part written, I assessed only with questions that forced students to make their understanding visible. It was during this year that I truly started to sit next to my students and provide them with written and verbal feedback that pushed their learning forward, instead of simply saying, “Here are the X questions you answered incorrectly and here are the correct answers.” My feedback was focused on learning, not on the questions they answered incorrectly.

I was writing grades and comments on everything my students handed in. This was the inherent problem: I was giving both grades and comments.

Every time I handed back an assessment with a mark, I quickly noticed that students focused on their individual grade, their friend’s grade and how they ranked within their peer group; most [students] completely ignored the comments. Students were not asking, “How do I understand this better?” but instead, “How do I get an A (or 90 per cent, or Excellent)?”

I had invested a lot of my time into giving useful and effective feedback; however, these comments were being overshadowed by marks. Grades were the commodity of my classroom, not learning. This had to change.

## Challenge the Grading System

*This is the game changer!*

Simply put, I stopped writing grades, learning levels or any other ranking system on student work. Instead, I only provided feedback and asked questions that pushed learning forward. Even if a student demonstrated mastery of an outcome, I would still provide feedback or leave them with a question that pushed them beyond the scope of the outcome.

This was the most profound transformation I have ever experienced in my entire career.

Students truly became engaged in their learning, not their grade or ranking. As well, I was able to truly push my students forward when they made mistakes. When I looked at the work of my students, I simply focused on three essential questions:

- What does success on the essential learning outcome (rock outcome) look like?
- Where is the student now?
- How do we close the gap?

This ensured that the feedback I was providing to students was truly learning focused. Every written comment was also input into our online reporting system.

This meant that when a parent or a student logged into our online reporting tool, they didn’t see grades but, instead, comments for any outcome. Instead of

seeing “80 per cent” on an outcome, parents (and students) would see what work was needed to close the gap—without the support of a grade.

Even the conversations I was having with parents were learning focused and not grade focused. Incredible shift! At the beginning of the year, parents were apprehensive about not receiving any marks as feedback; however, when parents saw the products their children were bringing home from my courses, parents were quick to become allies of this new model of assessment.

## Differentiate the Assessments

I finally started a *differentiated assessment* model. After teaching outcome X, I would have an assessment on the outcome; however, I started to use this time to also assess each student’s understanding of a previous outcome. For example, students who were also being retaught ideas on outcome 2 would have questions on outcome 2 on their sheet; the ones who were working on outcome 3 would see questions on this outcome; truly, every single assessment was tiered to the individual student and what he or she had been working on in the previous weeks.

The assessments Jimmy and Jane received on this day would match only if they were working on

identical material with identical errors and misconceptions, which was rarely the case. Even when designing the questions from previous outcomes, I focused the questions on the feedback the learner had received on their last assessment. For example,

- Jane might be tasked to demonstrate understanding of a specific part of a certain essential outcome, because I saw only a minor learning gap when I previously assessed her on this outcome;
- Jimmy, however, might have more questions on the same essential outcome, because when I assessed him previously I saw major learning gaps.

This is when learning became the focus of every single assessment I gave. I can honestly say that every assessment had learning as the only priority!

Looking back, I have always believed that every child can learn math to the highest levels, but only in the past three years have I taken a differentiated approach to what happens when they don’t.

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*David Martin has a love for numbers, puzzles and everything else mathematics. After teaching high school for 10 years, and finishing his master of mathematics for teachers, he is now a division math lead. You will find him tinkering with code, counting by prime numbers or exploring the mysteries of  $\pi$ .*