

Lesson Planning with Rigor



White Paper

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Introduction - What is Rigor?

If you look up the word “rigor” in the dictionary, you will probably be greeted with definitions that include words like “severe” and “strict”, concepts that seem far from what teachers are trying to accomplish in their classrooms. But as you dig further, you may find words that are more suitable, such as “demanding” and “challenging”. The answer lies in cognitive complexity and growing the student’s ability to interact with and synthesize new information.

Rigor may be the most used word in the world of education today, but few educators truly know what they mean when they try to introduce rigor in the context of learning. The purpose of this report is to not only discuss what rigor represents to an educator, but also what it looks like in the classroom and, most importantly, how every teacher can provide rigor for their students.

Here is how we meet those objectives:

- First, a discussion about the modern state of education. Most of the educational standards being used by states today, whether they subscribe to the Common Core State Standards or not, call for increased rigor for students. What do those standards look like and how have they changed from previous generations?
- Once you have a handle on those standards, it is time to unpack them, modifying them from abstract words to actionable ideas for your students to reach.
- A standard is a goal for the teacher, but is hardly meant for student consumption. How do you set standards-based learning goals for your students so they understand what is expected of them?
- You cannot go where you want to go without knowing where you are. Not surprisingly, assessment plays a big part in the rigorous classroom. What do rigorous assessments look like and how often should they occur?
- Finally, once the student-friendly goal is set, we will discuss what the rigorous classroom looks like. What are the students doing in that room that is different from a classroom that is not as rigorous?

Once we have finished this journey, you will have a step-by-step process for achieving rigor in your own classroom. This process need not start at the beginning of the next school year—it can be implemented during the next school day!



College and Career Readiness and Rigor

Interestingly, the word “rigor” itself does not appear in either the math or English/language arts versions of the Common Core State Standards or College and Career Ready standards based on the common core (a state-by-state analysis of those which are not using the CCSS is outside the purposes of this paper), although it does appear a few times in the introductory and supporting pages of the Common Core website, corestandards.org. Rigor is referenced to repeatedly by the US Department of Education in its guidance papers and in the new federal education law, the Every Student Succeeds Act.

But every set of modern standards sets goal for what a student should be able to do once they enter the world of college and/or career. These are skills that have been identified by economic, political, and education leaders as critical for our nation to compete in the international, 21st century economy. These proficiencies include things like critical thinking, perseverance, collaboration, and analysis, among others. The thinking is that a more demanding and challenging course of study will help produce those outcomes for our students.

Nowhere in the standards do they call for the most common misconception of rigor: that it is synonymous with more work. Rigor is not tacking on more homework or more essays. It’s about choosing the right homework, the right essays, and mixing in some other tasks (which we will discuss later) that help students not only learn but grow.

Step 1

Understanding and Unpacking Your Standards

All educators spend a considerable amount of their time researching and considering the appropriate standards to address with a particular lesson or unit. But it can be hard to distill the action from the mandate. And after all, isn't the goal for students to be able to perform an action—the desired skill?

First, let's consider a standard as written, taken from the fourth grade math CCSS.

CCSS.MATH.CONTENT.4.OA.A.3

Solve multistep word problems posed with whole numbers and having whole-number answers using the four operations, including problems in which remainders must be interpreted. Represent these problems using equations with a letter standing for the unknown quantity. Assess the reasonableness of answers using mental computation and estimation strategies including rounding.

The teacher taking this standard at face value would interpret it to mean that students need to be able to use the four operations in various ways. This is correct, but does not offer depth and breadth—two signs that you are on the track toward rigor.

Instead, identify the verbs in the standard. In this case, they include solve, represent, and assess. Now, pull out your favorite taxonomy and put those tasks in order by complexity.

This is your roadmap to rigor.

For most taxonomies, that would be the same order. That is not the case for most standards. This is your roadmap to rigor. Yes, students should learn how to solve word problems first. They should then also know when an answer is right and when it is wrong (and why), which is analysis. Finally, they should be able to synthesize their own uses for the skills they have just learned by representing information using equations. Move your lesson along that line and the tasks become more complex—and more rigorous. They are also scaffolded correctly, layering on complexity systematically without overwhelming the students.



Step 2

Setting an Appropriate Learning Goal

Standards are written for teachers. And, as discussed in the previous section, they are often misinterpreted in a less-than-rigorous manner. They are also better descriptions of an end result rather than a goal to strive for. Schools and districts often mandate that teachers

display the standard(s) they are addressing on their boards. This is a solid attempt at giving students ownership of their education, but there is no guarantee that they will understand a standard as written.

Instead, adopt the practice of sharing a learning goal, which is simply an age-appropriate version of the standard. For example, the standard given in the previous section, reworded into language appropriate for a fourth grader, would be something like:

I can solve word problems by adding, subtracting, multiplying, and dividing.

I can make my own equations based on a word problem.

I know how to tell when a word problem answer is right or wrong.

When a student looks up at those goals on the board—which they should be reminded to do multiple times during the lesson—they can now easily tell whether they have accomplished their goal and can move on to the next, or need to stay back and continue working. The question then becomes, how do they (and you) know where they stand?

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Step 3

The Role of Assessment

If “rigor” has a rival for most-used word in education, it would be “assessment”, usually with a negative connotation. Yet, assessment is a necessary and natural part of the educational process. The trick in the rigorous classroom is to assess not only what a student knows, but how they know it and what they can do with it. The answer, not surprisingly, is to systematically ratchet up the complexity of the tasks you are asking the students to complete, following along with the learning goals you created from the standard.

You may know that between formative and summative assessment, formative has the deepest wealth of research toward its efficacy. Formative assessment should be administered much more frequently, and master teachers often do. It is the only way for students to be able to move themselves (with your help) towards progress in your learning goals.

There are a few misconceptions about formative assessment that directly affect both its usefulness and the classroom culture you are trying to build by having accessible learning goals.

First, students should know when formative assessment is going on. The idea that assessment needs to be a secret in order to be effective is outdated. Students should not only know that they are being assessed for their progress toward the learning goal—they should know at what point it’s coming and be looking forward to it.

With formal assessments, students should also know if they haven’t met expectations using a scale that is easy to follow. They should also be able to ask what they should do next; self-advocacy is another important skill that needs to be taught. Students should be partners in their own learning. As soon as you know where they stand in terms of their learning, so should they.

Most formative assessment is given informally. What does a rigorous, cognitively complex informal assessment look like? First, it probably takes the form of an open-ended question. That may be the teacher using a questioning strategy, but it can also be the students working collaboratively to piece together new information, using it in a way that generates new thoughts and ideas.



Is the teacher lecturing away while stringently guiding the lesson as if it were a ship at sea? Or is the teacher like the cruise director, simply guiding students to their next activity?

Step 4

Identifying Rigorous Learning Tasks

To picture the rigorous classroom, the first thing to ask is who is doing the work? Is it the teacher, lecturing away while stringently guiding the lesson as if it were a ship at sea? Or is the teacher more like the cruise director, simply guiding students to their next activity and offering assistance when needed? If your answer is the former, much more rigor can be squeezed out of that classroom.

Striving for a student-centered classroom doesn't mean that the teacher is not working hard. They are the ones designing the activities. What are those activities? Let's review some of the main points from earlier in the paper.

First, the new sets of standards call for students to be able to—among other things—think critically, work collaboratively, synthesize knowledge in real-world situations, and persevere until a goal is met. If the tasks you are asking of your students include those activities, you're almost there.

Second, rigor in education requires a certain level of autonomy. Again, are you the captain or the cruise director? The captain tells people what to do. The cruise director gives people options and lets them figure out the best way forward. Yes, autonomy requires the teacher to give up some control, and autonomous tasks also tend to feature questions with more than one answer with no one correct path.

Finally, rigorous learning tasks are scaffolded, just like we covered when we were unpacking the fourth grade math standard. Taxonomies are not obsolete in the era of 21st century learning standards. Far from it. In fact, they are still our most reliable road maps toward rigor. Progress systematically toward your learning goals with tasks that get gradually more complex. A good rule of thumb: the last task should not be about what the student knows, but what they think about that content and what they can do with it.

How Classworks Helps Teachers Achieve Rigor

Classworks is an instruction and assessment solution that leverages the latest technology with best practices in classroom instruction.

One more time, let us consider that 4th grade math standard, our process toward rigorous lessons, and how Classworks can help in that context.

CCSS.MATH.CONTENT.4.OA.A.3

Solve multistep word problems posed with whole numbers and having whole-number answers using the four operations, including problems in which remainders must be interpreted.

Represent these problems using equations with a letter standing for the unknown quantity.

Assess the reasonableness of answers using mental computation and estimation strategies including rounding.

With Classworks, teachers are supported with lessons for direct instruction that promote conceptual understanding, scaffolded content, and higher-order thinking skills, while still leaving a level of student autonomy. In other words, the steps in our process calling for scaffolding and setting appropriate learning goals are already done for you. Not only can this standard be presented in kid-friendly language, but it's also easier for the teacher to translate into actionable lesson plans or use those that are already provided.

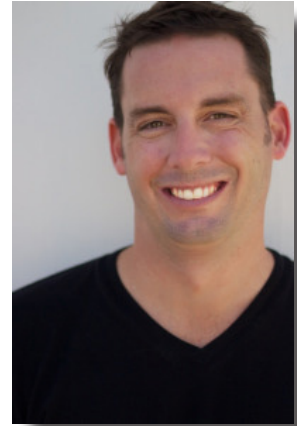
The second half of the process toward rigor is assessing students on a consistent basis and organizing rigorous learning tasks. Through Classworks, students are

consistently engaged and assessed through in-person and online learning tools that embody cognitively complex tasks, informing the ongoing instruction provided by the teacher. Learning is personalized for each individual student, providing a plan that can be used by the teacher to make sure every student reaches their learning goals. In this case, teachers will have access to tasks that present word problems, estimation, and mental math in ways that call for students to think creatively and approach problems from different directions – all with student engagement in mind.



About the Author

Scott Sterling is an education journalist and commentator with five years of experience in Title I education. His work has appeared in the New York Times, Education Week, District Administration, and other digital outlets. He is based in St. Petersburg, Florida.



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About Classworks

Classworks is an online instructional and assessment solution proven to help students become critical thinkers and independent learners. Classworks offers K-8 math, reading, language arts, and science instruction as well as assessment and productivity tools. Classworks provides both on-grade level classroom instruction and individualized instruction that is flexible, powerful, and drives student growth. Classworks results-driven, engaging educational solutions are built upon strong instructional pedagogy and technological innovation.

For more information, please visit www.classworks.com, contact Classworks at 888.841.4790 or email info@classworks.com.

