In chapter 1, The Case for Rigor, I introduced our definition of rigor: creating an environment in which each student is expected to learn at high levels, each student is supported so he or she can learn at high levels, and each student demonstrates learning at high levels.
Notice we are looking at the environment you create. Our tri-fold approach to rigor is not limited to the curriculum students are expected to learn. It is more than a specific lesson or instructional strategy. It is deeper than what a student says or does in response to a lesson. True rigor is the result of weaving together the elements of curriculum, instruction, and assessment in a way that maximizes the learning of each student.

Expecting Students to Learn at High Levels

<table>
<thead>
<tr>
<th>Characteristics of Expecting Students to Learn at High Levels</th>
</tr>
</thead>
<tbody>
<tr>
<td>♦ High Expectations</td>
</tr>
<tr>
<td>♦ Challenging Curriculum</td>
</tr>
<tr>
<td>♦ Instruction: High-Level Questioning</td>
</tr>
<tr>
<td>♦ Instruction: Differentiation</td>
</tr>
</tbody>
</table>

Let’s look at this definition in more detail. First, rigor is creating an environment in which each student is expected to learn at high levels. Having high expectations starts with the decision that every student you teach has the potential to be the best, no matter what. There are times this is hard, but I’ve always remembered that students live up to or down to our level of expectation for them. Expecting every student to learn at high levels begins with the curriculum, or content of your lesson. If you think about Gabrielle’s comment from chapter 1, that was her point. We can fall into the trap of reviewing content too much or settling for more basic content. Therefore, we need to evaluate what we teach. In chapter 3, Raise the Level of Content, we will look at how you can compare your curriculum with national standards. That is critical, especially since we know that the rigor of high school curriculum is a better predictor for college graduation than test scores or high school grades (United States Department of Education as cited in Gose, 1999).

But we also need to evaluate how we ask students to interact with that content, or the way we approach instruction. There are three areas of related research that are foundational to the suggestions provided throughout this book: Levels of Questioning, Differentiated Instruction, and Multiple Intelligences Theory.
Levels of Questioning

Understanding is similar to climbing a mountain. You may have to start at the bottom, but to get the full view (the rigorous view), you have to make it to the top. You climb to the top one step at a time; the steps become increasingly more difficult as you go, but the view is worth it. There are many models for organizing higher levels of questions, but we will look at three. Each takes a slightly different approach, and can be adapted for your precise purposes.

New Bloom’s Taxonomy

The original Bloom’s Taxonomy of Educational Objectives, released in 1956, was designed to help teachers write objectives and create tests to address a variety of levels of understanding. In 2001, a group of researchers revised the original taxonomy.

By crossing the knowledge row with the process column, you can plan objectives, activities, and assessments that allow students to learn different types of knowledge using a variety of processes. The revised taxonomy is a complex but useful method for addressing all levels of questioning.
### Bloom's Taxonomy of Educational Objectives

<table>
<thead>
<tr>
<th>The Knowledge Dimension</th>
<th>The Cognitive Process Dimension</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Remember</td>
</tr>
<tr>
<td><strong>Factual</strong></td>
<td>recognize</td>
</tr>
<tr>
<td><strong>Conceptual</strong></td>
<td>recall</td>
</tr>
<tr>
<td><strong>Procedural</strong></td>
<td>define</td>
</tr>
<tr>
<td><strong>Metacognitive</strong></td>
<td>distinguish</td>
</tr>
</tbody>
</table>

Source: Anderson, Lorin W., David R. Krathwohl, *A Taxonomy For Learning, Teaching, And Assessing: A Revision Of Bloom’s Taxonomy Of Educational Objectives* published by Allyn and Bacon, Boston, MA. Copyright © 2001 by Pearson Education. Adapted by permission of the publisher.

Note: The verbs are interchangeable among the columns. For example, one could recognize factual, conceptual, procedural, and/or metacognitive information.
Ciardiello’s Four Types of Questions

In Did You Ask a Good Question Today? (1998), Angelo V. Ciardiello identified four types of questions, as well as corresponding question stems and cognitive operations. They are simple, but provide a clear framework for crafting questions and assignments.

<table>
<thead>
<tr>
<th>Question Type</th>
<th>Question Stems</th>
<th>Cognitive Operations</th>
</tr>
</thead>
<tbody>
<tr>
<td>Memory</td>
<td>Who, what, when, where?</td>
<td>Naming, defining, identifying</td>
</tr>
<tr>
<td>Convergent Thinking</td>
<td>Why, how, in what ways?</td>
<td>Explaining, comparing, contrasting</td>
</tr>
<tr>
<td>Divergent Thinking</td>
<td>Imagine, suppose, predict, if/then, how might?</td>
<td>Predicting, hypothesizing, inferring</td>
</tr>
<tr>
<td>Evaluative Thinking</td>
<td>Defend, justify, judge</td>
<td>Valuing, judging, justifying choices</td>
</tr>
</tbody>
</table>

Quality QUESTIONS

When I wrote Classroom Motivation from A to Z, I included a chapter on good questioning. I developed nine reminders, around the acrostic of QUESTIONS, to help guide your development of questions during lessons.
As you create and adapt lessons to incorporate more rigorous opportunities for learning, you will need to consider the questions that are embedded within your instruction. I recently talked with a teacher who was using higher standards and more complex activities, but asked her students basic recall or memory-based questions to assess their understanding. That defeats your purpose. Higher-level questioning is an integral part of a rigorous classroom.

**Characteristics of Good Questioning**

<table>
<thead>
<tr>
<th>Q—quality</th>
<th>Don’t waste your time on questions that are unclear, confusing, or irrelevant.</th>
</tr>
</thead>
<tbody>
<tr>
<td>U—understanding</td>
<td>Make sure your questions lead to an understanding of content.</td>
</tr>
<tr>
<td>E—encourage multiple responses</td>
<td>Questions with more than one answer lead to higher levels of thinking.</td>
</tr>
<tr>
<td>S—spark new questions</td>
<td>If your question encourages students to ask more questions, you’ve struck gold!</td>
</tr>
<tr>
<td>T—thought-provoking</td>
<td>Prompting students to think is the truest aim of good questions.</td>
</tr>
<tr>
<td>I—individualized</td>
<td>Customize questions to your content and to your students.</td>
</tr>
<tr>
<td>O—ownership shifted to students</td>
<td>Give students the opportunity to create their own questions.</td>
</tr>
<tr>
<td>N—narrow and broad</td>
<td>Some questions are focused, some more open-ended. Use a balance.</td>
</tr>
<tr>
<td>S—success building</td>
<td>Remember the goal of all questioning: successful student learning.</td>
</tr>
</tbody>
</table>

As you create and adapt lessons to incorporate more rigorous opportunities for learning, you will need to consider the questions that are embedded within your instruction. I recently talked with a teacher who was using higher standards and more complex activities, but asked her students basic recall or memory-based questions to assess their understanding. That defeats your purpose. Higher-level questioning is an integral part of a rigorous classroom.
**It's Your Turn!**

How do you currently develop questions to use during your instruction? Which of the three models described would help you improve your questioning skills?

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**Differentiated Instruction and Multiple Intelligences**

Differentiated Instruction (DI) is a popular concept, and I hear many interpretations of its meaning. For most teachers, it means creating lessons that include different elements to meet the needs of each individual student in a diverse classroom. According to the technical definition, in DI, a teacher varies the content (what), process (how), or product (demonstration of learning) of instruction to enhance student understanding.

One concern I hear from teachers is that differentiation means some students will miss some aspects of learning. In sports, there are basic warm-up exercises and drills for every player on the team. Good coaches also work with each player during practice to increase strengths and strengthen any weaknesses. During instruction, we need to do the same thing. We should teach core information to everyone, and adjust our lessons based on what we know about our students to help every individual reach his or her potential.

One of the ways you can differentiate instruction is through the use of Howard Gardner’s Multiple Intelligences Theory. In *Frames of Mind: The Theory of Multiple Intelligences* (1983), he proposed eight intelligences, or ways people learn most effectively.
Once you understand the different intelligences, you can use them to create activities that will enhance learning for your students. I met with a teacher who told me that this means that you should find out each student’s type of intelligence, and then only teach him/her lessons in a way that matches that intelligence. I find that to be limiting, and unrealistic for today’s classrooms. Instead, incorporating activities that address various intelligences allows students to construct deeper knowledge by seeing the concept through the different intelligence lenses. For example, I may be a linguistic learner, but my knowledge of geography is certainly enhanced through visuals (spatial). So, although you may want to provide instruction individually tailored to a student’s intelligence(s), also plan lessons for all students that incorporate elements of the different intelligences. A final important note about differentiated instruction and multiple intelligences; you don’t have to incorporate activities for all intelligences. That is likely not practical on a regular basis. However, you will see in the upcoming chapters that there are ways to incorporate the intelligences into your existing lessons.
**It’s Your Turn!**

Are you familiar with Differentiated Instruction and Multiple Intelligences Theory? If so, how do you anticipate this will assist you in your efforts to increase rigor? If not, what is your initial response to this new information?

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**Supporting Each Student to Learn at High Levels**

**Characteristics of Supporting Each Student to Learn at High Levels**

- Addressing Motivation (Value and Success)
- Increasing Student Engagement

The instructional strategies we choose directly impact the second part of our definition: *each student is supported so he or she can learn at high levels*. It is critical that we craft lessons that move students to more challenging work while simultaneously providing ongoing scaffolding to support them as they learn. We simply cannot increase our expectations without helping students learn to move with us to those higher levels. Rigorous lessons incorporate elements of motivation and engagement in order to help students succeed. In the most effective classrooms, all three elements are linked together.
Student Motivation

If you’ve read Classroom Motivation from A to Z, you know that I believe all students are motivated, just not necessarily by the things we would like. Many of my students were not motivated by a desire to learn; rather, they were motivated by the approval of their friends, or the wish to earn some money, or something else in their lives. In our school, we had a basic system of positive and negative consequences, but it seemed to yield temporary results. I used praise and rewards in my classroom, but with less emphasis. I learned that it was more important for my students to be intrinsically motivated, and that my job was to create an environment in which they were more likely to be motivated.

People are more motivated when they value what they are doing and when they believe they have a chance for success. Those are the two keys: value and success. Do students see value in your lesson? Do they believe they can be successful?

Value

There are many recommendations relating rigor to relevance. That is the value part of motivation. Students are more motivated to learn when they see value, or the relevance of learning. I’ve found that students have a radio station playing in their heads: WII-FM—What’s In It For Me? When I’m teaching, students are processing through that filter. What’s in this lesson for me? Why do I need to learn this? Will I ever use this again?

Ideally, your students will make their own connections about the relevance of content, and you should provide them opportunities to make those connections independently. But there are also times that you will need to facilitate that understanding. I observed a science teacher who was very effective in helping his students see value in lessons. At the beginning of the year, he asked his students to write about their goals for life after high school. During a lesson on chemical mixtures, he realized that Shaquandra was tuning him out. He asked her, “Why is an understanding of chemical mixtures important to you?” Puzzled, she replied, “I don’t know. I don’t think it is.” He then guided her to a realization that, since she wanted to own a beauty shop, she would need to know about mixtures when using chemical treatments on a customer’s hair. Her motivation to participate in the lesson increased tremendously. We’ll discuss several ways you can tap into your students’ goals and dreams in chapter 7, Raise Expectations.

When I lead workshops on motivation, teachers work together in subject area groups to identify the value of a lesson, looking at it from the perspective of their students. Recently, a middle school math teacher told me her students
didn’t see value in a lesson. One student commented, “We are only doing this because it’s on the test.” There are times that we teach something to prepare students for a test, but that answer does not typically enhance a student’s appreciation of the relevance. The teacher was confused, since the lesson was on positive and negative integers, a concept with many practical applications. Before she could respond, another student chimed in. “Half our football team is in this class, and we’re playing Thursday night. Think of the football field as a number line. Positive and negative integers are yards gained and lost.” The math teacher told me how much she appreciated the comments from the students. As she pointed out, “It was a good reminder for me. Sometimes, I focus so much on the content; I forget to think about it like the students do.” That’s the view we need to consider. Through that process, we’ll help our students see value in our lessons.

*It’s Your Turn!*

Look at two or three lessons or units you will be teaching in the near future. What is the value or relevance, from the perspective of your students?

<table>
<thead>
<tr>
<th>Showing Value in Lessons</th>
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<tbody>
<tr>
<td><strong>Lesson or Unit</strong></td>
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<td>------------------------</td>
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</tbody>
</table>

*Success*

Success is the second key to student motivation. Students need to achieve in order to build a sense of confidence, which is the foundation for a willingness to try something else. That in turn begins a cycle that results in higher levels of success. Success leads to success, and the achievements of small goals or tasks are building blocks to larger ones.
In chapters 3 to 7, we’ll look at ways to increase rigor in your classroom. Each recommended strategy is designed to ensure your students’ success. However, chapter 5, Give Appropriate Support and Guidance will focus specifically on strategies to support their new learning, and to scaffold growth to increased levels for every student.

Don’t underestimate the importance of this motivational element. There are two related misconceptions that are stumbling blocks on the road to rigor.

**Misconceptions**
- Students can’t do harder work.
- Students do not like hard work.

First, we say that some students can’t do harder work. I can assure you of one thing: if you don’t believe in your students, they will go out of their way to prove you right. In chapter 7, Raise Expectations, we’ll look at how to adjust our perspective of their success. For now, it’s important to realize that if you believe your students will fail, they know it, and they believe you. And if students don’t believe they can be successful, many will give up before they begin.
Next, we assume that students do not like hard work. Very few students will come to you begging for more work. Some of that is a defense mechanism: “Wait a minute, harder? More challenging? What if I can’t?” For others, they’ll say one thing to you when their friends are around; but they would have a completely different answer if no one else is listening.

I have served as a team leader for the Southern Regional Education Board (SREB). Schools invite a team to come to their middle or high school to provide feedback for school improvement. I particularly enjoy interviewing students. You discover information from them that you simply wouldn’t get otherwise. One of the questions is: “Quality learning is the result of considerable effort to do something exceedingly well. Give an example of an experience that required you to work hard and in which you did well.” The answer I have heard most often is a special project, such as something they did for the science fair. Just about every time, they struggle to even think of an answer.

Actually, students associate feelings of success and satisfaction with challenging work when it is accompanied by appropriate support. They also believe that hard work is important. Students are very insightful; if you give them busy work, they immediately recognize it for what it is. But if you engage them in authentic, real-life problem solving at high levels of challenge, they know you believe in them and respect them. In turn, they will respond appropriately.
It’s Your Turn!

Think of your current students. Make a list of those who are successful in your class, and those who aren’t. For those who aren’t, how can you help them achieve success in your class?

<table>
<thead>
<tr>
<th>Levels of Student Success</th>
</tr>
</thead>
<tbody>
<tr>
<td>Successful Students</td>
</tr>
</tbody>
</table>

Thoughts for my consideration:
Why are some of these students less successful?

Am I possibly sending messages that I don’t believe in them?

What else do I need to think about related to this as I continue reading this book?
Student Engagement

What exactly is student engagement? I read a comment from a teacher on an internet bulletin board. He said that his students seemed to be bored, and after talking with them, he realized that they were tired of just sitting and listening. He said they wanted to be more involved in their learning. I was excited to read further as the teacher said he decided then to “change how I teach, so now I make sure I do one activity each month with my class.” How sad. That means 19 days per month of no activity. That’s the perfect picture of what student engagement is not. Don’t misunderstand me. There is a place in teaching and learning for lecture/explanations and teacher-led discussions. But somehow, many teachers fall into the trap of believing that lecturing AT or explaining TO works. Perhaps it comes from our own experience. Many of my teachers taught that way—it’s what we saw most of the time. But how many of those teachers were really outstanding? Not many. My best, most memorable teachers were highly engaging. I felt as though we were learning together.

I also remember that, as I grew older, the more I was talked at. When did we somehow decide that as children grow up, they should be less involved in their own learning? Let’s be clear on some foundational points:

1. Although students can be engaged in reading, reading the textbook (or the worksheet) and answering questions is not necessarily engaging.
2. Although students can be engaged in listening, most of what happens during a lecture isn’t engagement.
3. Although students working together in small groups can be engaging, simply placing them in groups to read silently and answer a question isn’t. When one or two students in a group do all the work, that isn’t engagement. Small groups don’t guarantee engagement just like large groups don’t automatically mean disengagement.

What does it mean to be engaged in learning? In brief, it boils down to what degree students are involved in and participating in the learning process. If I’m actively listening to a discussion, possibly writing down things to help me remember key points, I’m engaged. But if I’m really thinking about the latest video game while nodding so you think I’m paying attention, then I’m not. It really is that simple. Of course, the complexity is dealing with it.

Think for a moment about a slinky. For a slinky to work, you have to use two hands to make it go back and forth. If you hold it in one hand, it just sits there, doing nothing. It doesn’t move correctly without both ends working. Similarly, if the teacher is the only one involved in the lesson, then it isn’t as
effective. The foundation of instructional engagement is involvement by both the teacher and the student.

**It’s Your Turn!**

Reflect on a lesson you taught recently. Use the guiding questions to think about the level of student engagement.

<table>
<thead>
<tr>
<th>Lesson Reflection About Student Engagement</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Type of Activity</strong></td>
</tr>
<tr>
<td>Teacher Lecture/Teacher Talk during Discussion</td>
</tr>
<tr>
<td>Individual Students’ Responses During Lecture/Discussion</td>
</tr>
<tr>
<td>Students Talking To Each Other (Partners, Small Groups)</td>
</tr>
<tr>
<td>Students Involved In Written Response to Learning (Individual)</td>
</tr>
<tr>
<td>Students Involved In project or Creative Response to Learning (Individual, Partner, Small Groups)</td>
</tr>
<tr>
<td>Other:</td>
</tr>
<tr>
<td>How can I adjust this lesson to increase student engagement?</td>
</tr>
</tbody>
</table>

**Rigor Does Not Stand Alone**

In order to effectively increase the rigor in your classroom, it is essential to incorporate elements of student motivation and engagement. In *The Silent Epidemic* (2006), 47% of the high school dropouts who participated in the study stated that one of the major reasons they quit school was that their
classes were not interesting. As a result, they were disengaged. There is a clear
link between motivation and engagement, and when you increase expecta-
tions without considering those two factors your students are more likely to
fail. If we want to help all our students succeed at high levels, we must tap
into their intrinsic motivation by helping them see value in our lessons, pro-
vide support for them to be successful, and structure our lessons to ensure
high levels of engagement. By doing so, students will respond more posi-
tively to the increased expectations. Then their learning will increase.

Demonstrating Learning at High Levels

<table>
<thead>
<tr>
<th>Characteristics of Demonstrating Learning at High Levels</th>
</tr>
</thead>
<tbody>
<tr>
<td>♦ Challenging Assessments</td>
</tr>
<tr>
<td>♦ Varied Assessments</td>
</tr>
<tr>
<td>♦ Formative Assessments</td>
</tr>
</tbody>
</table>

Finally, in a rigorous classroom, *each student demonstrates learning at high
levels*. You might think, “If I provide more challenging lessons that include
extra support, won’t this last part just happen?” I wish teaching was that easy.
Nothing “just happens.” If we want students to show us they understand
what they learned at a high level, we also need to design assessments that
provide them the opportunity to demonstrate they have truly mastered new
content. Throughout the upcoming chapters, you will notice that many of the
learning activities are, in themselves, an assessment of student understand-
ing. As I said earlier, it is critical to incorporate higher-level questioning
throughout the process, or you will dilute the quality of learning.

You may choose to use a test to check for mastery of content, but we’ll be
looking at other alternatives to move beyond testing. Varying the types of
assessments you use will produce quality, sometimes from unexpected
sources.

For example, Scott Bauserman, from Decatur Central High School in Indi-
ana, asks his students to choose a topic from a completed social studies unit
and design a game to show what they have learned. The finished product
must teach about the topic, use appropriate vocabulary and processes, and be
fun to play. As he explains,

Students had to construct the game, the box, provide pieces and a
board, and write the rules. I received a wide variety. One game I will
always remember was about how a bill gets passed into law. We spent time in class talking about all the points where a bill in Congress or the state General Assembly could be killed, pigeon-holed, or defeated. The student took a box the size of a cereal box, set up a pathway with appropriate steps along the way, constructed question/answer cards, and found an array of tokens for game pieces. If a player answered a question correctly, he or she would roll the dice and move along the path to passage. But the student had cut trap doors at the points where a bill could be killed, and if a player landed on a trap door/bill-stopper, the player to the right could pull a string, making that player’s token disappear from the board. The player would have to start over. Not a bad game from a student who has fetal alcohol syndrome and is still struggling to pass his classes.

Finally, it is important to balance evaluation of learning with formative assessment. We will devote chapter 8, Assessment and Grading to that topic. For now, simply keep in mind that the best assessments help you understand what your students know and don’t know, so that you can adjust your instruction to help them learn more effectively.

**It's Your Turn!**

How does this definition of rigor compare with what you have heard about rigor or read in other books? As you consider the three foundational components of rigor, which would you like to focus on as you increase the level of rigor in your classroom?

<table>
<thead>
<tr>
<th>Rigor is Creating an environment in which:</th>
<th>My Thoughts</th>
</tr>
</thead>
<tbody>
<tr>
<td>Each student is expected to learn at high levels.</td>
<td></td>
</tr>
<tr>
<td>Each student is supported so he or she can learn at high levels.</td>
<td></td>
</tr>
<tr>
<td>Each student demonstrates learning at high levels.</td>
<td></td>
</tr>
</tbody>
</table>
Conclusion

Now, let’s make this practical. In chapters 3 through 7, we’ll look at five specific ways to increase rigor in your classroom.

### Ways to Increase RIGOR

- R  Raise level of content
- I  Increase complexity
- G  Give appropriate support and guidance
- O  Open your focus
- R  Raise expectations

The chapters follow a consistent format. After a short introduction, we will discuss five useful strategies you can apply in your classroom. In addition to a description of the strategy, you will find examples from a range of subject areas, which can be adapted to your specific grade level and/or content. You may find that you are already using some of the activities. I purposely included many commonly used ones, adapting them to make them more rigorous. I believe that rigor does not necessarily mean throwing away everything you are doing. Rigor in many cases means adjusting what you do to increase your expectations and the learning of your students.

Finally, chapters 3 through 7 are not sequential. You may prefer to start with chapter 5, Give Appropriate Support and Guidance. Or, you may want to read chapter 4, Increase Complexity and then skip to chapter 6, Open Your Focus, because they are similar. That is entirely up to you. On p. 38, you’ll find a listing of the topics for each of those five chapters. You can use that to determine where to go next!

### Final Insights

- ♦ The most important idea I read was …

- ♦ One way I plan to apply this information in my classroom is …

- ♦ I wonder …
Overview of Chapters 3 Through 7

Chapter 3: Raise the Level of Content
- Valuing Depth
- Increasing Text Difficulty
- Creating Connections
- Evaluating Content
- Reviewing Not Repeating

Chapter 4: Increase Complexity
- Complexity Through Projects
- Complexity in Writing
- Complexity as You Assess Prior Knowledge
- Complexity With Vocabulary
- Complexity in Review Games

Chapter 5: Give Appropriate Support and Guidance
- Scaffolding During Reading Activities
- Modeling Expected Instructional Behaviors
- Providing Clear Expectations
- Chunking Big Tasks
- Presenting Multiple Opportunities to Learn

Chapter 6: Open Your Focus
- Open-Ended Questioning
- Open-Ended Vocabulary Instruction
- Open-Ended Projects
- Open-Ended Choices for Students
- Open-Ended from the Beginning

Chapter 7: Raise Expectations
- Expecting the Best
- Expanding the Vision
- Learning is Not Optional
- Tracking Progress
- Creating a Culture