

“A curriculum that exemplifies academic rigor is focused, coherent, and appropriately challenging... is appropriately challenging from a cognitive or intellectual perspective in that topics are not excessively repeated but move students into an ever deeper and broader exposure to the discipline moving from basic concepts to more developed ones.” (William Schmidt)

“Academic rigor quite simply means giving students a curriculum that will prepare them to succeed in college or the world of work.” (Jerry West)

“Rigor is more than difficult work or a set of expectations we have for our students and ourselves. It is our basic philosophy of learning. It means that we have to set high expectation for ourselves, our colleagues, and our schools. There has to be a commitment by all involved to stay ahead of the curve in their content areas and in the educational arena.” (Jeffrey Robinson)

“It’s time to expect more from our students. It is time to prepare every child, everywhere in America, to out-compete any worker, anywhere in the world. It’s time to give all Americans a complete and competitive education from the cradle up through a career.” (President Obama)

Increasing Rigor

STUDY MODULE I

AUGUST, 2010

What is Rigor? Rigor Defined.

Academic rigor is determined not just by what is taught, but how it is taught and how it is assessed, according to Barbara Blackburn, who teaches at the University of North Carolina, Charlotte, and who helps teachers and school districts raise the level of rigor in their classrooms. A demanding curriculum isn’t so demanding if it’s taught in a way that students can’t learn it or if, on tests, they’re not really expected to know it. There are three major components of rigor—content, pedagogy (teaching strategies), and assessments.

A rigorous curriculum is “focused, coherent, and appropriately challenging,” said William Schmidt, a Michigan State professor who studies the educational practices of countries that surpass the United States on international tests. In order to achieve that goal, the Montgomery County, MD school district analyzed the content of high school AP classes and then figured out what students would have to learn starting in preschool in order to do well in those classes. Now, said Superintendent Jerry Weast, his schools meet his definition of rigor by “giving students a curriculum that will prepare them to succeed in college or the world of work.”

“Too often, rigor becomes, ‘Let’s give more homework,’” said Dick Flanary of the National Association of Secondary School Principals. “Lessons *must* be ‘rigorous’ if they make kids suffer.” This is not the case.

In theory, one teacher wrote recently on an educational blog, rigor

means “developing students into not merely passive learners, but active thinkers and doers.” But in practice, we must be careful to not hold all students accountable for the same level of learning, since students learn at different paces, have different abilities, often come from disengaged families, and high-level material is simply beyond their developmental level. What is rigorous for one child may not be rigorous for another child.

The debate between knowledge and skills has raged for centuries. Is rigor advanced content or is it developing skills of thinking and inquiry? Research into learning seems to confirm that students learn best when they are taught content and basic processes at the same time they learn to think and solve problems.

“Knowledge and thinking must be intimately joined,” said the University of Pittsburgh’s Lauren Resnick, a leading cognitive science expert.

The social research group MDRC defines academic rigor as “a demanding yet accessible curriculum that engenders critical-thinking skills as well as content knowledge.” Students should “raise questions, think, reason, solve problems, and reflect,” said Beverly L. Hall of Atlanta, the 2009 National Superintendent of the Year. In addition to gaining knowledge about a subject, students “should be asked to comprehend, apply, analyze, synthesize, evaluate—using that knowledge,” according to Education Trust, a Washington-based nonprofit devoted to closing racial and socioeconomic achievement gaps.

Whatever the definition, making classrooms more intellectually rigor-

ous is no small challenge. No matter how demanding a state’s standards, nothing will change for students unless teachers change their lessons. To see if this is occurring, Blackburn suggests asking the following questions:

- What kind of questions is the teacher asking? True or false? Just recalling facts? Or are students asked to recall something they already know and use it to solve a new problem?
- Are all students engaged and thinking, or only those who answer a question?
- Are students given time to think through answers? If they don’t have the answer immediately, does the teacher move on to something else or give students adequate time to process?
- Are students talking and sharing information appropriately, or is there total silence? “If a classroom is silent for a long time, I start wondering,” she said.

In a rigorous classroom, Blackburn said, teachers create “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.”

Material in this article was reproduced and adapted from *Understanding and Reporting on Academic Rigor* by The Hechinger Institute.

The Critical Need for Rigor

Concern about rigor is not new. Since the release of "A Nation at Risk" (1983) the debate about the quality of America's schools has grown exponentially. This debate calls for dramatically different schools, schools that are much more responsive to student needs, and provide a rigorous curriculum that prepares students for success in higher education and the workplace.

Many suggest that a more rigorous education is the solution to our industrial problems, the solution to an under-prepared workforce, and a necessity for our future. The High School Alliance, a

partnership of fifty organizations committed to high academic achievement, released a pair of reports examining rigor in American high schools. They identified four core principles of a school with a rigorous program:

1. Minimum graduation requirements that prepare students for college
2. High level content and instruction
3. Wide range of supports for students to help them succeed
4. Alignment of requirements with post-secondary education and work.

From "Strategies Leaders Can Use to Improve Rigor in Their Schools" (Williamson and Blackburn)

Most importantly, the Alliance said that having a rigorous course title was not sufficient. "Efforts to increase rigor also require careful examination of course content to ensure it is at an appropriately high level, and teaches students higher order thinking skills." Other efforts recommended by the Alliance include improved guidance and counseling, individualization and personalization; academic supports for struggling students and substantial investment in professional development and other teacher supports.

Newmann's Characteristics of Rigor

From Fred Newmann's, "A Guide to Authentic Instruction and Assessment: Vision, Standards, and Scoring."

"AVID defines rigor as using inquiry-based, collaborative strategies to challenge and engage students in content resulting in increasingly complex levels of understanding."

*AVID's Working Definition of Rigor, 2010
www.avid.org*

Characteristics of Higher Order Thinking:

- Student produces meaning as opposed to reproducing meaning.
- Student is able to perceive the purpose of the learning.
- The purpose of learning must have application beyond the test and school.
- Student must be able to understand the bigger picture, which is always "outside the box."
- The higher order may not be about the details, but evolves from the details.
- Higher order thinking is a process that one comes to. The process needs to be highlighted for kids at different stages of progress.
- The purpose of learning is to move to the generalization, the "therefore."
- The ability to conceptualize

learning should be a habit of mind.

Characteristics of Deep Learning:

- Deep learning has the ability to be transferred and applied to other learning; it is not understood without transfer.
- Deep learning requires being open to the idea that new knowledge may confound or contradict prior thinking.
- Deep knowledge is constructed layer upon layer from the assimilated knowledge of others.
- Deep learning is rendered and interpreted through many different conduits so that nuance can be discovered.
- The communication of deep learning is complex and varied, and deep learning is just that: deep, not wide.
- Deep learning teaches the learner how to learn.

Characteristics of Substantive Conversations:

- The purpose of school is academic; therefore substantive conversation is always content-based. The teacher's role is to keep conversation from straying to the general or affective.
- Non-specific and affective conversation may be practice for the content-based conversation.
- Learning is clarified, crystallized, and concretized as it develops.
- Substantive conversations are highly elaborated and complex, with the individual demonstrating the process and progress of thinking and learning ("I used to think _____, but now I believe _____").
- Substantive conversation demonstrates the learner's taking on the role of and emulating a thinker in a particular discussion.
- These conversations reinforce the purpose of learning, and substantive conversations must be scaffolded for students to engage in them effectively.

Yes! Rigor is for ALL Students

Information in this article taken from “Removing Roadblocks to Rigor” and “Struggling Learners Can Achieve in the D Quadrant” from the International Center for Leadership in Education.

Academic, social, and developmental needs of students must be addressed in order for them to respond to high expectations and to achieve rigorous academic standards. A network of academic and social supports is critical to ensure that all students—regardless of their socio-economic background or previous educational experience—have the opportunity to succeed at high levels. Academic and social support comprises intentional strategies that enable students at all levels to benefit from academically rigorous curricula. These strategies are interrelated, developmentally appropriate, and provide integrated, coordinated, and comprehensive support in order to improve student achievement.

According to the International Center for Leadership in Education, struggling learners *can* achieve in the “D” Quadrant (high rigor and high relevance). They just need a structure that includes scaffolding of instruction and gradual release of responsibility to the student.

Tips for Rigorous Learning for All Students:

- The Big 8 Literacy Strategy Areas (1. vocabulary; 2. grouping; 3. writing to learn; 4. graphic organizers; 5. questions and questioning; 6. leveled materials or resources; 7. use of media, technology, color, non-linguistic representations; and 8. use of document, technological and quantitative literacy strategies for charts, maps, graphs, math, internet,

and other non-paragraph forms).

- Flexible Grouping Models (peer dialogue makes rigor more accessible to student)
- Quick Writes

Overview of the Rigor and Relevance Framework and the Four Quadrants:

The Rigor and Relevance Framework places Rigor on the vertical axis and Relevance on the horizontal axis dividing instruction into four quadrants:

Quadrant A (Acquisition): low rigor and low relevance; teacher works, students explain and describe content.

Quadrant B (Application): low rigor and high relevance; student works, students demonstrate application of skills or ideas.

Quadrant C (Assimilation): high rigor and low relevance; student thinks, students analyze and summarize.

Quadrant D (Adaptation): high rigor and high relevance; student thinks and works, students evaluate, self-evaluate, integrate, create, and adapt.

For more information on the Rigor and Relevance Framework, see the addendum to this module or visit the International Center for Leadership in Education online at: www.leadered.com.

With appropriate planning and scaffolding, all learners can reach their own level of academic rigor.

Rigorous instruction emphasizes the upper levels of DOK and Bloom’s Taxonomy. All students may not be able to perform at the advanced level, but every student should be challenged to achieve objectives one level above where they are testing. That is rigor.

There are many websites that offer free lesson plans focusing on rigorous instruction. Simply conduct a Google search using the keywords “rigorous lesson plans.”

How can teachers enhance academic rigor?

Teachers should:

- Develop a shared understanding of their “ideal academic culture.”
- Engage in discussion about rigorous teaching with peers.
- Ask tough questions such as, “How does this learning experience challenge students to achieve at higher levels or demonstrate greater understanding of content?”
- Create substantive changes in individual learners.
- Engage learners as full partners in the learning process, with learners assuming primary responsibility for their own choices.
- Create and offer as many options for learning as possible.
- Assist learners to form and participate in collaborative learning activities.
- Define their roles as learning facilitators by the unique needs of the learners.
- Succeed only when improved and expanded learning can be documented for all of their learners.

Rigorous Thinking/Active Use of Knowledge

Students synthesize several sources of information.

Students refer to a variety of texts as sources of information.
Students connect ideas within and between texts.
Students use previous knowledge to support ideas and opinions.

Students construct explanations.

Students acknowledge that more information is needed.
Students use sequential ideas to build logical and coherent arguments.
Students employ a variety of types of evidence.

Students formulate conjectures and hypotheses.

Students use “what if?” scenarios as challenging questions or supporting explanations.
Students formulate hypotheses and suggest ways to investigate them.
Students indicate when ideas need further support of explanation.

Students test their own understanding of concepts.

Students redefine or change explanations.
Students ask questions that test the definition of concepts.
Students draw comparisons and contrasts among ideas.
Students identify their own bias.
Students indicate to what degree they accept ideas and arguments.

Classroom talk is accountable to generally accepted standards of reasoning.

Students use rational strategies to present arguments and draw conclusions.
Students provide reasons for their claims and conclusions.
Students fashion sound premise-conclusion arguments.
Students use examples, analogies, and hypothetical “what if?” scenarios to make arguments and support claims.
Students partition argument issues and claims in order to address topics and further discussion.

Students challenge the quality of each other’s evidence and reasoning.

The soundness of evidence and the quality of premise-conclusion arguments are assessed and challenged by discussion participants.
Hidden premises and assumptions of students’ lines of argument are exposed and challenged.
Students pose counter-examples and extreme case comparisons to challenge arguments and claims.

Classroom talk is accountable to standards of evidence appropriate to the subject matter.

Guiding PLC Discussion Questions

1. What is the essential content knowledge that learners must demonstrate?
2. What are the key essential understandings that you want all students to learn in your content area? You can’t teach all the standards so what are key, essential learnings, and what items are tested items?
3. What are the strategies that get students to engage in rigorous work in your content area?
4. Look at the descriptions of Rigorous Thinking/Active Use of Knowledge above. How have you invited students to actively engage in the content you’re teaching?
5. How can you use data to determine appropriate levels of rigor for ALL learners in your classroom?
6. What supports can you offer for struggling learners?
7. How can you make use of PLD’s and other district tools to ensure ALL students are being appropriately challenged and to facilitate students moving into higher achievement level categories.

Socratic Seminar Guidelines

In a Socratic seminar, participants seek deeper understanding of complex ideas in the text through rigorously thoughtful dialogue, rather than by memorizing bits of information.

The Text: Socratic seminar texts are chosen for their richness in ideas, issues, and values and their ability to stimulate extended, thoughtful dialogue. A seminar text can be drawn from readings in literature, history, science, math, health, and philosophy or from works of art or music. A good text raises important questions in the participants' minds, questions for which there are no right or wrong answers.

The Question: A Socratic seminar opens with a question either posed by the leader or solicited from participants as they acquire more experience in seminars. An opening question has no right answer; instead it reflects a genuine curiosity on the part of the questioner. A good opening question leads participants back to the text as they speculate, evaluate, define, and clarify the issues involved. Responses to the opening question generate new questions from the leader and participants, leading to new responses.

The Leader: In a Socratic seminar, the leader may play a dual role as leader and participant. The seminar leader consciously demonstrates habits of mind that lead to a thoughtful exploration of the ideas in the text by keeping the discussion focused on the text, asking follow-up questions, helping participants clarify their positions when arguments become confused, and involving reluctant participants while restraining their more vocal peers. Assuming this dual role of leader and participant is easier if the opening question is one which truly interests the leader as well as the participants.

The Participants: In a Socratic seminar, participants carry the burden of responsibility for the quality of the seminar. Good seminars occur when participants study the text closely in advance, listen actively, share their ideas and questions in response to the ideas and questions of others, and search for evidence in the text to support their ideas.

Structure of a Socratic Seminar:

1. Use an article or piece of literature that is controversial or can inspire discussion from multiple points of view. Participants should have pre-read the piece of literature and developed questions.
2. Use an inner and outer circle (or one circle with all participants). Large groups may have multiple Socratic seminar circles going on simultaneously. Outer circle participants observe an inner circle participant. They may have an observation form or simply take notes of both the verbal and nonverbal participation of the inner circle participant.
3. A "hot seat" is an empty chair within the inner circle. Outer circle participants may jump in to share a comment or question, but then must jump back out.
4. All participants take notes during the Socratic seminar. At the end of the seminar, reflections of the process and discussion may be shared with the whole group.

Participant Tips:

- Cite specific evidence or text in questions and responses.
- Ask for clarification.
- Engage other members,

Other Ways to Incorporate Rigor

Writing

- Have all students take notes in Cornell format—help them to write their summaries via group or class discussion about the lesson's focus.
- Help students decide what to include in portfolios and write a brief rationale for each inclusion.

Inquiry

- Use open-ended questions that require students to think at higher levels, analyzing cause and effect, predicting outcomes and supporting their predictions, synthesizing information to draw original conclusions, extending their learning by connecting it to other learning, etc.
- Encourage students to ask questions at higher levels (getting past the definitions).
- Provide students with opportunities to wonder "what if?" and to investigate possibilities.

Collaboration

- Allow students to use their notes to study together in small groups for a test.
- Teach students to work together to formulate and research questions regarding your subject.
- Encourage students to use one another as resources for understanding assignments.

Reading

- Incorporate strategies to help students read increasingly more difficult text.
- Scaffold reading instruction to develop students' comprehension skills.

Real World Connections

- Allow or encourage students to utilize technologies to complete assignments. Students might conduct research using the internet, use word processors, databases, and spreadsheets to organize and report their thinking, use graphing calculators to help them conceptualize in math, and video essays to publish their responses to critical questions.

Philosophical Chairs

DIRECTIONS:

1. Chairs/desks are set up facing each other with about half facing one way and half facing the opposite way.
2. A controversial statement is presented to the students. This statement might be based on a reading or content under study. The statement should be one that will divide the class into those who agree with the statement and those who disagree. Be sure the statement is written on the board for reference during the activity.
3. Those who agree with the statement sit on one side and those who disagree sit on the other side.
4. A mediator who will remain neutral and call on sides to speak is positioned between the two sides (this role is usually played by the teacher in the elementary and middle school grades). In addition to facilitating the discussion, the mediator may at times paraphrase the arguments made by each side for clarification. It is important that the mediator always remain neutral.
5. The mediator recognizes someone from the side of the classroom that agrees with the statement to begin the discussion with an argument in favor of the position stated. Next, the mediator will recognize someone from the other side to respond to the argument. This continues throughout the activity, and part of the job of the mediator is to ensure participation by as many students as possible and to keep just a few students from dominating the discussion. The mediator may also put a time limit on how long each side addresses the issue on each turn.
6. In addition to speaking in the discussion, students may express their opinions by moving from one side to the other. Anyone may change seats at any time. Changing seats does not necessarily mean that a person's mind is changed, but rather that the argument made is compelling enough to sway the opinions. Students may move back and forth throughout the discussion.
7. The discussion and movement go on for a designated period of time—usually one class period. The mediator may bring the discussion to a close at any time. Each side may be given an opportunity to make a final statement on the issue. If time allows, each participant states his/her final opinion and may also tell which arguments he/she found most convincing.
8. An additional piece to this activity can be to have a few students observe the process and take notes instead of participating. These students will debrief their observations to the class at the end of the activity. You may have students who were absent or unprepared to participate fulfill this role.

MODIFICATIONS:

It is recommended that you begin this activity with just two sides. If students have difficulty choosing a side to begin, encourage them to sit on the side that they agree with the most even if they do not completely agree. Once students are accustomed to this format, you may choose to add this additional component: You may add a third section of seats with a few chairs for students who are undecided. This section is placed between the two opposing sides. During the discussion, you may allow students from the undecided section to participate or you may require that they take a position before participating. Students may move from the sides that agree or disagree with the statement to the undecided section if they wish. Before you end the discussion, require that all students still sitting in the undecided zone move to one side or the other depending on which they believe made the most compelling arguments.

EVALUATION:

Leave time at the end of the class for students to reflect on the activity. Have them answer questions like: How open-minded was I as I listened to other people talk? Why did your position change or not, and what were the reasons for your thinking? Explain. What was the most frustrating part of today's discussion? What was the most successful part? What statements led you to change your seat or to remain sitting in your original position? Why? What conclusions can you draw about how you form your beliefs based on today's discussion? What would you change about your participation in today's activity? Do you wish you had said something that you did not? Did you think about changing seats but didn't? Ex-

Cornell Note-Taking

<u>Topic</u>	<u>Heading</u>
Questions Subtitles Headings	Class Notes <ul style="list-style-type: none"> • Use Bullets • Use Abbreviations

Summary—3-4 sentence summary across the bottom

Effectively Using Cornell Notes:

- Teach and model how to use Cornell notes.
- Use daily.
- Teach the importance of highlighting key information, emphasizing the main idea, and using questions to gain clarification.
- Cornell notes are a tool for processing information and self-assessing understanding of material.
- For more information, do a Google search of "Cornell Notes."