

# Tips for Teachers:

## Rigor and Relevance as Key Elements of Student Success

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### A Message from Terri H. Mozingo, Chief Academic Officer

*In our rapidly changing, globally connected, and technology-rich world today, students learn best in environments that are engaging, relevant, and rigorous. As you will see in this tenth volume of “Tips for Teachers,” educational research provides us with rich ideas for strategies to promote rigor in our classrooms—and help students perceive their education as relevant and authentic—In effect, they should be able to “see themselves” in what they are studying. As always, the compelling why is essential: What am I learning? Why am I learning it? Why is this relevant and meaningful to me?*

### What Does the Research Tell Us About Rigor and Relevance?

- Cognitive Learning Theory:** Students are engaged when they are involved experientially in the act of constructing personal meaning about what they are studying. Learning occurs when students move from teacher modeling toward levels of guided practice and independent transfer (Pearson, Gallagher, Vygotsky)—known as “gradual release of responsibility.”
- Neuroscience and Brain-Compatible Teaching and Learning:** Rigor is present when the frontal cortex is activated, activating the student’s Executive Function processes (i.e., working memory, goal directedness, time management, and self-regulation). When the learning environment is engaging, stimulating, and threat-free, the student can access higher-order cognitive functions (e.g., analysis, synthesis, evaluation, creative expression).
- Emotional Intelligence:** When students feel disengaged, bored, and perceive what they are learning as lacking relevance, they remain emotionally disconnected. For rigor and relevance to be present, classrooms must be safe, orderly, and inviting.
- Creativity and Flow:** Rigor and relevance are present when students experience what Csikzentmihalyi calls “flow.” Such a mindset occurs when the learner experiences a sense of immersion into the learning experience, a sense of timelessness because of absorption in the task.
- Differentiation and the Learner Profile:** Rigor and relevance are present when students’ learning styles and modality preferences are dignified. Visual learners, for example, require multiple models and visual representations of key concepts and skills. Similarly, students—as Howard Gardner reminds us—display intelligence in different ways (e.g., linguistically, mathematically, spatially, visually, musically). Cognitive styles are also important with styles ranging a preference for concrete to abstract reasoning and thinking.

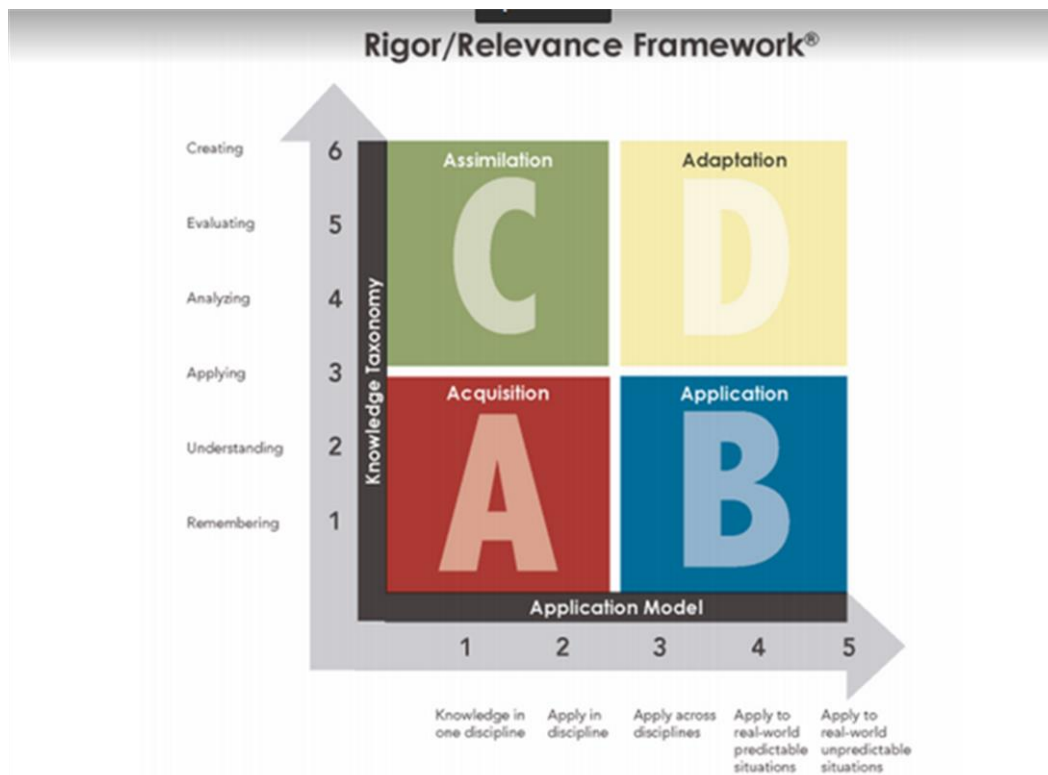
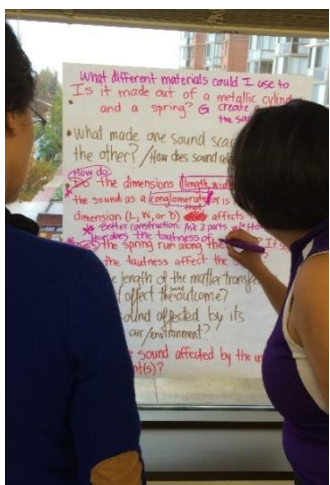
### Four Levels of Scaffolding (Bill Daggett)

William Daggett identifies four levels of instruction needed to ensure rigor and relevance:

- Effective Foundational Learning:** This level involves foundational skills and knowledge aligned with required standards. It is essential but should not be an end point.
- Stretch Learning:** This level allows students to take opportunities for rigorous and relevant learning beyond minimum requirements. When students are stretched, they are encouraged to engage in interdisciplinary activities and competitions and other forms of higher-order activities (e.g., simulations, debates, seminars).
- Personal Skill Development:** This level involves student acquisition of skills such as personal goal setting and organization. It also includes social skills such as sympathy and emotional control. This can also include leadership skills, collaboration, and team building.
- Learner Engagement:** According to Daggett, this is the overarching dimension of rigor and relevance. Engagement occurs when students are intrinsically motivated and derive a sense of satisfaction, belong, and accomplishment—and see learning as relevant and authentic.

*Rigor is creating an environment in which each student is expected to learn at high levels, each student is supported so that he or she can learn at high levels, and each student demonstrates learning at high levels.*

Blackburn (2008)



### William Daggett's Four-Quadrant Approach to Rigor and Relevance

The Rigor/Relevance Framework is an easy to understand model that can serve as a bridge between the school and community. It offers a common language for expressing the idea of a rigorous and relevant curriculum, including what parents and business and community leaders want students to learn. It identifies four specific quadrants:

- 1. Quadrant A—Acquisition:** Students gather bits of information and knowledge. They are primarily expected to retain this acquired knowledge. It represents simple recall and understanding of discrete knowledge (e.g., knowing the world is round).
- 2. Quadrant B—Application:** Students use acquired knowledge to solve problems, design solutions, and complete work. The highest level of application is to apply appropriate knowledge to new and unpredictable situations (e.g., knowing how to use math skills to make purchases and count change).
- 3. Quadrant C—Assimilation:** Students extend their acquired knowledge to automatically and routinely analyze and solve problems as well as create unique solutions (e.g., knowing how the political system works, analyzing benefits and challenges of the cultural diversity of this nation vs. others).
- 4. Quadrant D—Adaptation:** Students have the competence to think in complex ways and apply knowledge and skills they have acquired. Even when confronted with perplexing unknowns, students are able to use extensive knowledge and skills to create solutions and take action that further develops their learning (e.g., using a variety of sources to investigate an engaging research question).

## The Myths of Rigor and Relevance

It is important for educators to ensure that they do not fall into the trap of myths and misconceptions about rigor and relevance. Ronald Williamson and Barbara R. Blackburn (2010) identify four recurrent myths about these important processes:

1. **Myth # 1—Lots of Homework Is a Sign of Rigor:** Many teachers pride themselves on the amount of homework they assign. Too often difficulty is equated with the amount of difficulty experienced by the student rather than the complexity and challenge of the task.
2. **Myth # 2—Rigor Means Doing More:** In this case, rigor is defined by the number of lessons or readings. High incidents of low-level activities does not constitute rigor. True rigor is expecting every student to perform at high levels of learning, delving deeply, engaging in critical thinking and problem solving, and be curious and imaginative.
3. **Myth # 3—Rigor Is Not for Everyone:** All students must be provided a rigorous educational experience, not just a select few. All students should be engaged and have a sense of purpose and authenticity in their learning.
4. **Myth # 4—Providing Support Means Lessening Rigor:** Supporting students to learn at high levels is essential. Scaffolding and coaching should occur as well as team-based approaches.

## Examples of Programs and Practices for Rigor and Relevance in ACPS

1. **Odyssey of the Mind:** This national competition provides opportunities for students to work in teams to develop creative problem-solving methods while having fun in the process. Students engage in open-ended problems appealing to a wide range of interests (e.g., designing and building vehicles to travel different routes to the same destination, including obstacles and challenges that we might encounter in real life).
2. **Summer Enrichment Programs:** These powerful learning experiences engage students in community outreach and service, focusing upon real-world problem solving and decision making in response to cultural, political, economic, and social issues and themes. A major focus is on experiential learning and inquiry-based investigation.
3. **Independent Projects, Including Research Opportunities:** At all grade levels, students are encouraged to extend and refine their learning by researching and investigating issues, themes, and topics that engage and excite them. Such projects should represent meaningful culminations of students' study of required curriculum standards, but allow for personalization and choice.
4. **National History Day and the Science Fair:** These important competitions involve the key elements of rigor and relevance, including student choice, investigation and research, and authenticity of purpose.
5. **Professional Learning:** Virtually all content academies and related professional learning workshops reinforce best practices that can be useful in promoting student engagement and a sense of rigor and relevance.

*What we want is to see the child in pursuit of knowledge and not knowledge in pursuit of the child ...*

**George Bernard Shaw, Playwright**

*A rigorous curriculum...is one that stretches each learner to grow intellectually, through engaging and challenging activities, to a point where the learner is self-directed, autonomous, and able to contribute successfully to society.*

**Richard Cash, Advancing Differentiation (2011)**





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## A REFLECTIVE QUESTIONNAIRE

Teachers and administrators can use the following self-reflection questionnaire to assess the extent to which rigor and relevance are key components of classrooms in your school.



## What Should We Be Able to Observe in a Rigorous and Relevant Honors Classroom?

1. **Accelerated Pacing:** Based upon appropriate pre-assessment/diagnosis, students have multiple opportunities for acceleration and movement toward exploration via curriculum compacting.
2. **Student Engagement:** Students are on-task and emotionally as well as intellectually committed to their own learning.
3. **Inquiry-Based Learning, Research, and Discovery:** Instruction and learning focus upon investigation and inquiry, encouraging students to become responsible for following their interests and their personal “compelling why?”
4. **Use of Complex Text:** Whenever possible, students are encouraged to develop and apply their analytical and critical reading comprehension skills to challenging, engaging, and authentic texts, including primary source documents.
5. **Student Discourse:** The classroom stresses student interaction, discussion, and collaborative inquiry using Socratic seminars, reciprocal teaching, and related forms of cooperative learning.
6. **Active Learning and the “10-2 Rule”:** Lecture or teacher presentation is limited. The 10-2 Rule suggests that for every 10 minutes of teacher-led instruction, students have a minimum two-minute opportunity to reflect, debrief, discuss, or debate key issues or concepts.
7. **Higher-Order Reasoning and Critical Thinking:** Students are engaged in internalizing and applying the higher levels of Bloom’s Taxonomy (i.e., explanation, analysis, synthesis, evaluation, creativity and self-expression), becoming powerful thinkers and inquirers. They also explore the big ideas and **essential questions** underlying the content they are studying, emphasizing the whole rather than discrete parts taught in isolation.
8. **Authenticity and Purpose:** Instructor emphasizes the relevance and purposefulness of curriculum content, supporting students in becoming excited about learning—particularly the content they are learning in a specific classroom—as well as interconnections across disciplines. The class revisits the “compelling why” of the content: *What am I learning? Why am I learning it? How does this relate to me?*
9. **Student Self-Regulation, Planning, and Metacognition:** Students will receive coaching to self-monitor, self-regulate, and self-assess, adjusting learning as they move along a continuum from guided to independent transfer.
10. **Open-Ended Performance Tasks:** Assignments should be consistently engaging and, whenever possible, open-ended provocations that trigger student imagination and involvement in the learning process.