

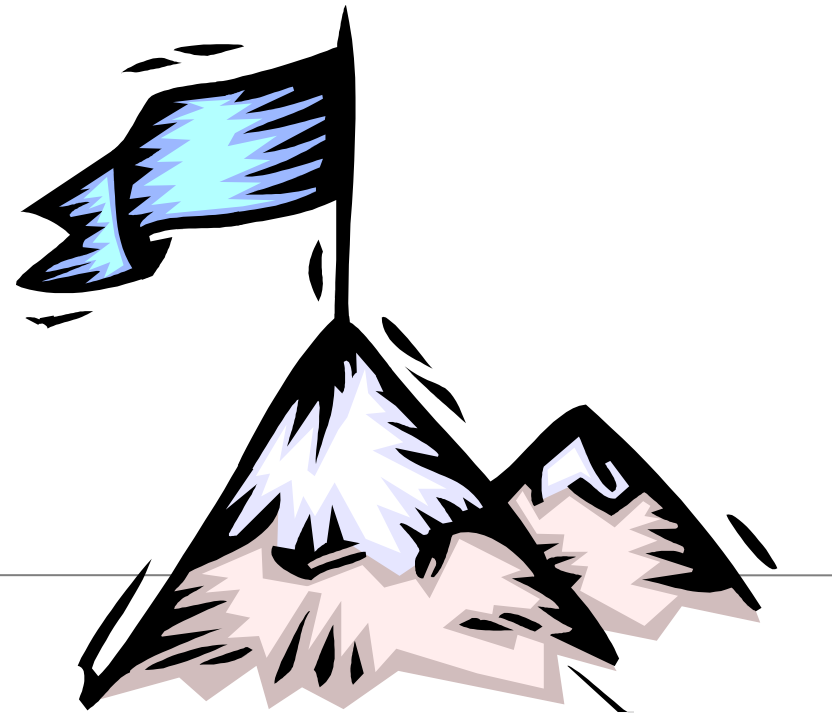
# Defining Rigor

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Julie Edmunds, SERVE

# What is Rigor? Starting with what you know

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# Is Rigor Appropriate for Everyone?

- Newmann et al. looked at quality of work in grades 3, 6, and 8
- Exposure to high levels of authentic intellectual work are associated with gains in standardized test scores.
  - Students exposed to high quality assignments had 20% higher gains than national average.
  - Students exposed to low quality assignments had gains 25% lower than the national average.
- Student demographics were not associated with exposure to quality assignments.

# Is Rigor Appropriate for Everyone?

- High quality assignments had value for both low-performing and high-performing students (compared to students exposed to low quality assignments)

Value Added	Math	Reading
Low	+29%	+28%
High	+17%	+42%

# Is Rigor Appropriate for Everyone?

- CRESST study on quality of classroom assignments, including 10<sup>th</sup> grade students.
- Students with more intellectually challenging assignments had higher standardized reading scores (even after other factors were taken into consideration).

# Rigor is not.....

- Something extra you have to do on top of everything else.
- More.
  - More pages  $\neq$  rigor
  - More of the same math problems  $\neq$  rigor
  - More homework  $\neq$  rigor



# Rigor is....

- Part of quality instruction.
- Part of a quality schooling experience.

You cannot have quality instruction or a quality school without rigor.

# Defining Rigor

## Student Work:

Are students able to produce rigorous work?

## In the Classroom:

**Course Content:**  
*Is the course content rigorous?*

**Instruction:**  
Does the teacher use rigorous instructional practices?

**Assessment:**  
*Are the classroom assessment practices rigorous?*

## Access:

Do policies and procedures support access to rigorous courses for all students?  
Are all students encouraged and supported to take rigorous courses?  
Are rigorous courses taught by qualified teachers?

## Exit Requirements:

Are the state and local exit requirements rigorous?  
Do they align with college entrance and workforce expectations?

## Standards and Assessments:

Do state standards include rigorous expectations for thinking skills and knowledge?  
Do state assessments measure these rigorous expectations?

*Primarily Local Level*

*Primarily State Level*



# Rigor in the Classroom

- Focus on what students are asked to do
- Three main pieces: course content, instruction, assessment
- Course content:
  - Doing a good job with state standards
  - Basic skills coupled with key concepts/important ideas
  - Application of core content to problems

# Rigor in the Classroom

- Instruction:
  - Activities that engage students in higher order thinking
  - “Elaborated communication”
- Assessment:
  - Aligned to higher order goals
  - Contain higher order thinking, engage with academic content, and require extended, elaborated responses

# QUALITY ASSIGNMENT CHECKLIST

COGNITIVE CHALLENGE DIMENSION	ALIGNMENT DIMENSION	ASSESSMENT PROCESS DIMENSION
<p>Does this assignment engage students in substantive content and provide an opportunity to apply highly complex thinking?</p>	<p>Does the assignment reflect a consistently focused alignment among learning goals, standards, and assessment strategies, grading criteria and learning strategies?</p>	<p>Does the assignment exemplify a quality assessment process?</p>
<p>Does the assignment contain the following quality indicators within this dimension?</p> <ul style="list-style-type: none"> <li><input type="checkbox"/> Is engaging to students</li> <li><input type="checkbox"/> Leads to deep understanding of content</li> <li><input type="checkbox"/> Allows opportunities for students to reflect on their own thought processes and/or set goals for their own learning (encourages metacognition)</li> <li><input type="checkbox"/> Makes connections to other concepts within this discipline and/or to concepts in other disciplines</li> <li><input type="checkbox"/> Asks students to perform higher order cognitive skills as analyze, apply, evaluate, examine issues, solve problems</li> <li><input type="checkbox"/> Contains clear, yet rigorous expectations for learning (beyond minimum standards)</li> <li><input type="checkbox"/> Is appropriate in age and grade level</li> <li><input type="checkbox"/> Expresses high teacher expectations for completing the work</li> <li><input type="checkbox"/> Encourages the study of essential concepts or understandings (the work involved is worthy of the time and energy invested)</li> <li><input type="checkbox"/> Mirrors an authentic and challenging task (real world application or connection)</li> </ul>	<p>Does the assignment contain the following quality indicators within this dimension?</p> <ul style="list-style-type: none"> <li><input type="checkbox"/> States the teacher's learning goals for students</li> <li><input type="checkbox"/> Lists the state or local standards addressed by the assignment</li> </ul> <p>Aligns these learning goals/standards to:</p> <ul style="list-style-type: none"> <li><input type="checkbox"/> the work assigned to students (good match between targeted knowledge/skill and assignment?)</li> <li><input type="checkbox"/> appropriate assessment strategies (diagnostic, formative, summative)</li> <li><input type="checkbox"/> appropriate instructional strategies</li> <li><input type="checkbox"/> teacher expectations/grading criteria</li> </ul>	<p>Does the assignment contain the following quality indicators within this dimension?</p> <ul style="list-style-type: none"> <li><input type="checkbox"/> Clearly indicates assessment purpose (diagnostic, formative, summative)</li> <li><input type="checkbox"/> Uses a highly effective assessment method that tightly matches the purpose</li> <li><input type="checkbox"/> Utilizes an assessment method that provides valid information on student achievement of learning goals/standards</li> <li><input type="checkbox"/> Provides ample time for students to complete (deadline is feasible)</li> <li><input type="checkbox"/> Shares expectations/grading criteria with students in advance</li> <li><input type="checkbox"/> Clearly outlines expectations/grading criteria in age or grade appropriate language</li> <li><input type="checkbox"/> Selects grading criteria/feedback mechanisms that support student self-assessment and/or improvement</li> </ul>

# Rigor Quick Check

Reminder: Look at what **students** are being asked to **do**.

## Content:

- ✓ Is the content part of the state standards?
- ✓ Does it include basic skills and important concepts?
- ✓ Does the content require students to apply core academic knowledge to problems or issues?

## Instruction:

- ✓ Does the instruction require students to engage in higher order thinking skills?
  - ✓ Are students required to engage in elaborated communication?
  - ✓ Do they have to explain or justify their conclusions or thinking?

## Assessment:

- ✓ Is the assessment aligned to the lesson goals?
- ✓ Does the assessment measure SCOS content?
- ✓ Do students have to use higher order thinking skills on the assessment?
  - ✓ Do students have to explain or justify their conclusions or thinking?

# How rigorous is this assignment?

- Design a controlled experiment investigating bacterial growth
  - Develop a question
  - Develop a hypothesis
  - Design and carry out the experiment to test the hypothesis (changing only one variable at a time)
  - Write up the experiment and results
  - Use the rubric to evaluate your report before turning it in



# How rigorous is this assignment?

- Given a specific colony from the original 13 colonies...
  - Do research to answer specific questions about the colony
  - Write a report answering the questions
  - Create a map of the colony, including natural features and resources
  - Present your report and map to the class
  - Use the rubric to review the report and map before turning them in



# How rigorous is this assignment?

- Using the materials in the class and what you have learned about sound...
  - Design a musical instrument that changes pitch at least three times
  - Name your instrument and write a description that includes an explanation of how the instrument makes different pitches
  - Play your instrument for the class, showing how it changes pitch
  - Use the rubric to review the instrument and description before turning them in



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# Questions or additional information??

Contact Julie Edmunds  
at [jedmunds@serve.org](mailto:jedmunds@serve.org)

1-336-315-7400

Or 1-800-755-3277