

# Understanding and Designing Rigorous Learning Experiences

Jennifer L. Jolly  
Louisiana State University  
Baton Rouge, Louisiana

# Why Rigor Matters

Above all else, the field of the education of the gifted exists to provide gifted students with differentiated curricula, that is, modified courses of study designed to make the schools more responsive to the needs of these exceptional learners. This is our primary goal and our defining mission.

-James Borland

Borland, J. H. (1989). Planning and implementing programs for the gifted.  
New York: Teachers College Press.

# Guiding Questions

- What is rigor and what is rigorous curriculum and instruction?
- How should educators of the gifted apply the principles of rigorous curriculum and instruction?



# Literature Review

- Educators, government bodies, and even entities outside of education agree that rigor is an essential element to prepare students for some type of post secondary education along with making U.S. students competitive with their international counterparts.
- Little empirical evidence exists on the understanding or nature of rigor, what is rigorous curricula, or how types of assessments used impact rigorous assignments.

# Recommended Curriculum

1983's *Nation at Risk*

- 4 years of English
- 3 years of math
- 3 years of social studies
- 1/2 year of computer technology
  - No indicators of course rigor

“Increased graduation requirements do not necessarily translate into a more rigorous and challenging curriculum. Various indicators suggest that far too many high school students are being sold orange drink under the label of orange juice.”

(Dounay, 2007, .p. 1)

# In-school Factors that Affect Achievement

- Teacher preparation
- Teacher experience
- Attendance
- Class size
- Technology-assisted instruction
- School safety
- *Rigor of curriculum*

# Academic Expectations

## *The State of Our Nation's Youth 2005-2006*

**31%** of students felt that academic expectations in their high school were high or that they were significantly challenged.

**51%** of students indicated being only moderately or somewhat challenged.

**12%** felt that expectations were low and that they could easily slide by.

(Horatio Alger Association, 2005, p. XX)



# Call for Rigor

## ■ National Governor's Association

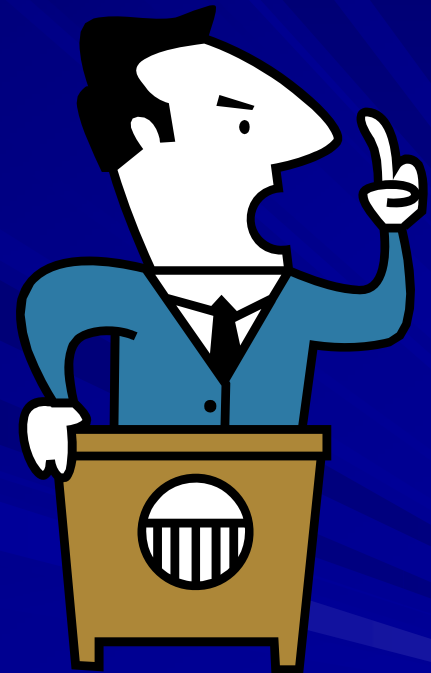
- Grant monies available to increase high school course rigor. Required to certify course quality and classroom instruction.

## ■ Bill and Melinda Gates Foundation's Goal

- Eliminate variance between courses by promoting course rigor and preparing every high school graduate for some type of post secondary education.

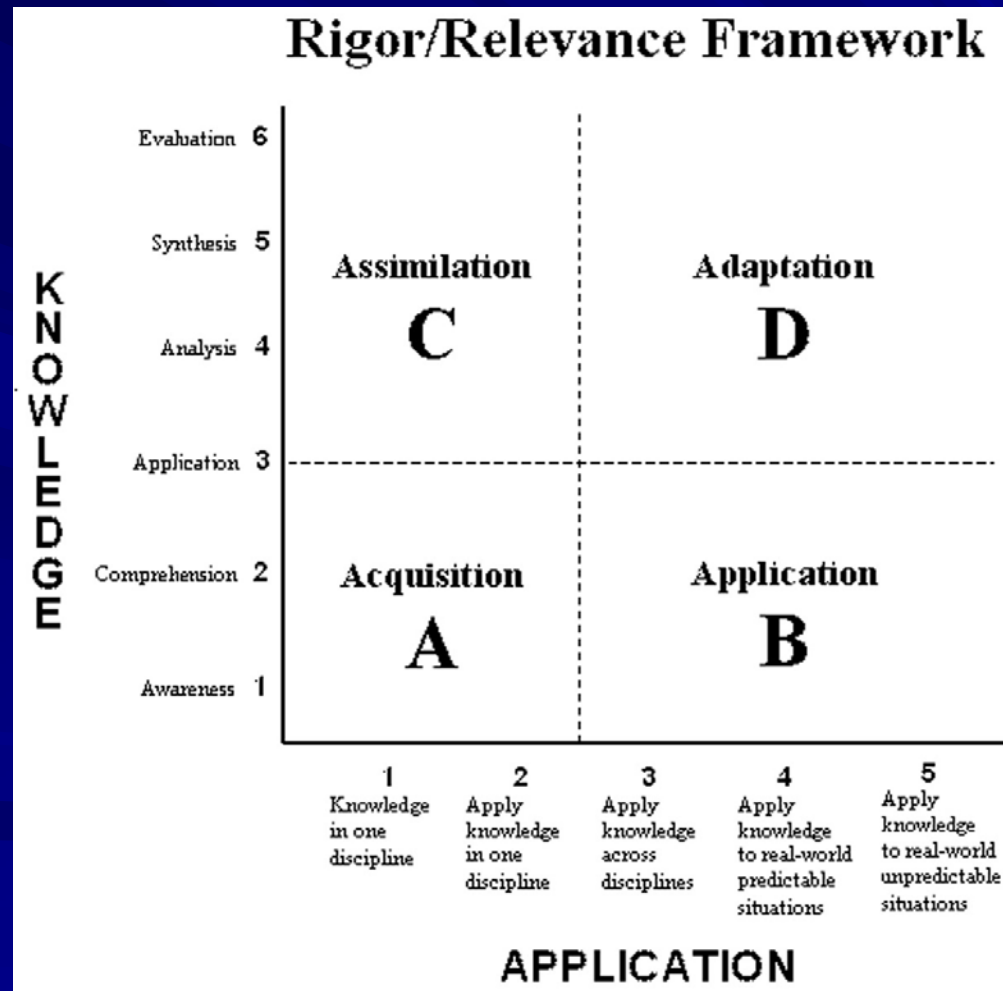
# Federal Government's Response

“the sole responsibility for defining a rigorous curriculum lies with a state, local district, or school official at a private or home school.”



H.R. 609

# Daggett's Rigor/Relevance Framework



## Knowledge

Basic Nutrition	
Level	Performance
Level 1-Knowledge	Label foods by nutritional groups
Level 2-Comprehension	Explain nutritional value of individual foods
Level 3-Application	Make use of nutrition guidelines in planning meals
Level 4-Synthesis	Develop personal nutrition goals
Level 5-Evaluation	Appraise results of personal eating habits over time

From *Rigor and Relevance Handbook*, International Center for Leadership Education

## Application

Basic Nutrition	
Level	Performance
Level 1-Knowledge in one discipline	Label foods by nutritional groups
Level 2-Application in one discipline	Rank foods by nutritional value
Level 3-Interdisciplinary Application	Make cost comparisons of different foods considering nutritional value
Level 4-Real-world Predictable Situations	Develop a nutritional plan for a person with a health problem affected by food intake
Level 5-Real-world Unpredictable	Devise a sound nutritional plan for a group of three-year olds who are picky eaters

From *Rigor and Relevance Handbook*, International Center for Leadership Education

# Previous Study

- Teacher perceptions of rigor
- 107 teachers from 32 schools in 3 states
- We found:
  - Teachers varied in their understanding of what constitutes rigor
  - Dichotomy of student work that is rigorous and student work that is hard

# Teacher Perceptions

## ■ Rigorous student work should

- Be challenging
- Use higher order thinking skills
- Include depth and complexity
- Go beyond basic skills
- Require time outside of class



# Teacher Perceptions

## ■ Examples of rigorous student work

- Research
- Problem solving
- Writing (including long papers)
- Comparing and contrasting
- Acceleration (above grade level work)
- Creative Responses
- Projects
- Labs (science)

# Rigorous or Hard?

- Both require time and effort beyond the ordinary expectations
- Both are antonyms of easy
- Teachers and students use the terms interchangeably even though rigorous is now an educational buzz word



# Worth Thinking About

Is it possible that  
the most rigorous  
curriculum may not  
be the hardest  
curriculum?



# Basis of Difference

## ■ Hard

- Extensive memorization
- Isolated facts and information
- Irrelevance of the knowledge or skills

## ■ Rigorous

- Use knowledge and skills to perform authentic work in the discipline
- Focus on conceptual understanding
- Connect knowledge and skills to students' lives or interests

# Current Study

- The purpose of this study is to gain a greater understanding of curricular rigor from a student perspective.



Table 1

## Demographic Information About the Participants

	Rural School	Urban School	Private School
	<i>n</i> (%)	<i>n</i> (%)	<i>n</i> (%)
Total N=45	15	15	15
Females	8 (53)	9 (60)	6 (40)
Males	7 (47)	6 (40)	9 (60)
Gifted Program	1 (6)	10 (67)	N/A
African American	8 (53)	9 (60)	3 (20)
White	7 (47)	6 (40)	12 (80)
Grade 8	0 (0)	0 (0)	15 (100)
Grade 9	2 (13)	1 (6)	0 (0)
Grade 10	3 (20)	4 (27)	0 (0)
Grade 11	10 (67)	9 (60)	0 (0)
Grade 12	0 (0)	1 (6)	0 (0)

## Respondents Definition of Rigorous Curriculum and Description of Assignments

Respondent	Definition of Rigorous Class Work	Description of Assignment
Suburban 1	Research and putting information together	Synthesizing and making connections
Suburban 2	Quality research which makes me think at a higher level	Making connections
Suburban 3	Writing using higher level thinking	Relate past events to today
Suburban 4	Challenging, understanding, and comparing	Create
Suburban 5	Analyzing assignments	Connect past to present
Suburban 6	Evaluating, analyzing, and writing	Connect past to present and draw conclusions
Urban 1	Apply skills and draw own conclusions	Expand on concepts
Urban 2	Thinking at a higher level	Evaluate own learning

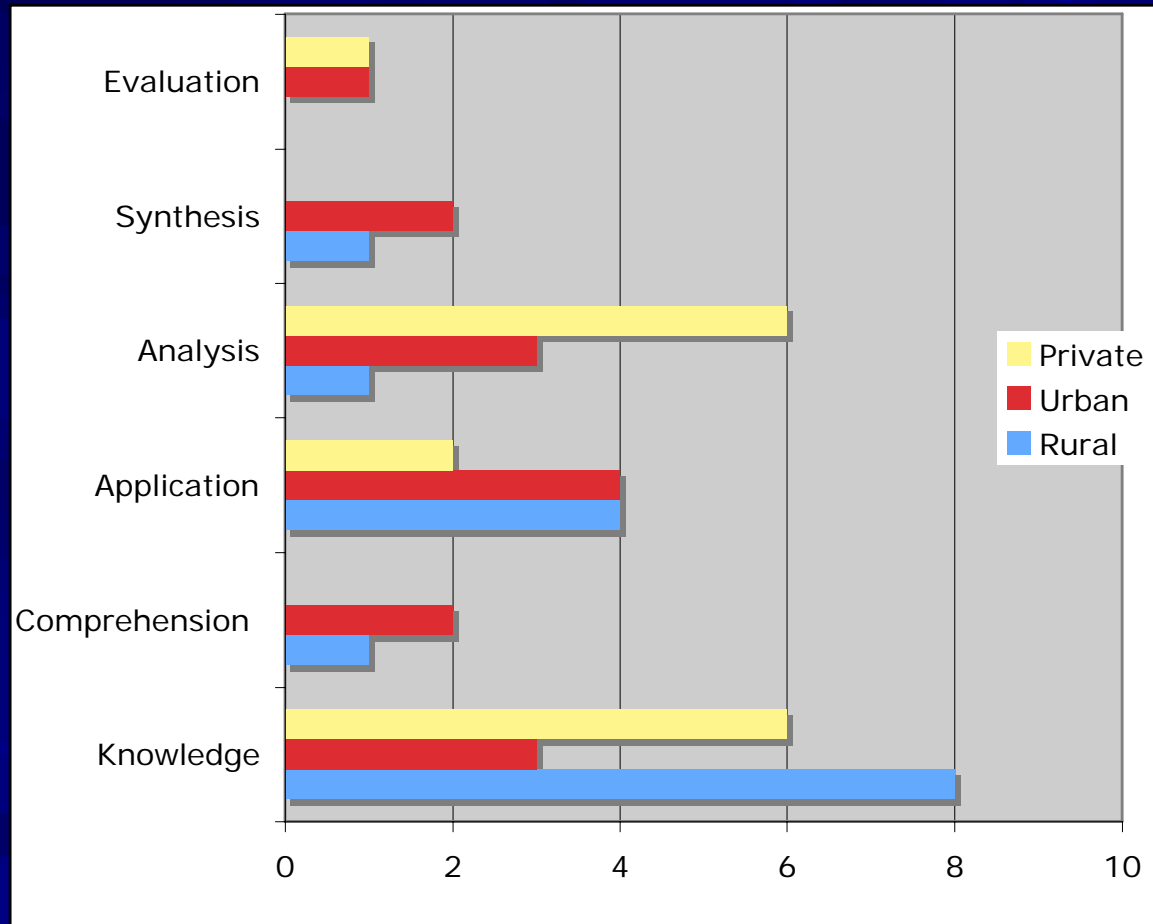
# Students' Misunderstanding

- Students' descriptions of challenging assignments but in actuality did not meet the criteria include,
  - “I was challenged to think this lesson because there were many different definitions that were confusing and I had to think to not get them confused” (rural student).
  - “We were challenged in this lesson because we did 3 pages of adjectives that made you think and not look in the dictionary” (suburban student).
  - “The challenging part was to memorize the different equations to insure that my answers were correct” (urban student).

# Further Misunderstandings

- (a) long research projects,
- (b) lots of work and limited amount of time,
- (c) interaction with other students,
- (d) hard due to lack of skill in particular content area,
- (e) impossible to complete, and
- (f) a handful of answers that did not belong into any specific category.
- Two students noted nonacademic situations where they could not bench press a certain weight during their physical education class. They perceived this as rigorous because it was challenging to them. “In PE we were weight lifting and I tried to bench press more than I could do and I had to get help” (suburban student).

# Students' Operation in Bloom's Taxonomy



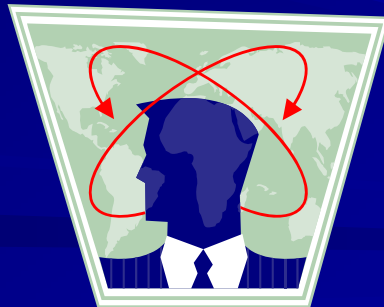


# Summary of Two Studies

- Teachers and students list examples of what is hard when asked about rigor. Contributing to the confusion of the two terms.
- Teachers and students define rigor as challenging, yet teachers have difficulty operationalizing the definition, which perpetuates students' lack of recognition of as to what is rigorous.

# What is Rigor?

Rigorous learning experiences engage students in thinking and acting on content that matters in order to develop conceptual understanding and increasing expertise in a discipline or field of practice.



# Rigorous Curriculum

## ■ Meaning-Based

- Emphasize depth over breadth
- Emphasize concepts over facts
- Grounded in real-world issues and problems
- Learning is a process of meaning-making in which students build personalized interpretations of problems and their solutions.

VanTassel-Baska, J. (2003). Content-based curriculum for high ability learners: An introduction. In J. VanTassel-Baska & C. A. Little (Eds.), *Content-based curriculum for high-ability learners* (pp. 1-23). Waco, TX: Prufrock.

# Rigorous Curriculum

## ■ Focus on Thinking Processes

- Emphasize applying, analyzing, evaluating and creating knowledge
- Include problem-solving with meaning problems within a discipline
- Emphasize the appropriate use of information rather than the memorization of it

Borland, J. H. (1989). *Planning and implementing programs for the gifted*. New York: Teachers College Press.

VanTassel-Baska, J. (2003). Content-based curriculum for high ability learners: An introduction. In J. VanTassel-Baska & C. A. Little (Eds.), *Content-based curriculum for high-ability learners* (pp. 1-23). Waco, TX: Prufrock.

# Rigorous Curriculum

## ■ Pose Big Questions

- Seek answers to questions that truly matter to the students.
- All content is not equal. Quality matters.
- Teachers of rigorous curriculum introduce students to the joys of learning a discipline through the exploration of great questions.

Sawyer, R. N. (1988). In defense of academic rigor. *Journal for the Education of the Gifted*, 11(2) 5-19.

# Rigorous Curriculum

## ■ Authentic Assessment

- Students should develop products that are age-appropriate representations of work in a field or discipline.
- Products and projects should require sophisticated thinking and should be assessed according to quality standards.
- Develop creative productivity.

Renzulli, J. S. (1992). A general theory for the development of creative productivity through the pursuit of ideal acts of learning. *Gifted Child Quarterly*, 36, 170-182.

# Rigorous Curriculum

- Meaning-Based
- Focus on Thinking Processes
- Pose Big Questions
- Authentic Assessment

# Summary

- Developing and delivering rigorous learning experiences is at the heart of gifted education.
- Educators of the gifted ought to understand the concept of rigor and how to design rigorous learning experiences.



# Summary

- Don't confuse hard and rigorous. School work does not need to be hard in order to be rigorous.



# Contact Information

Jennifer Jolly  
[jjolly@lsu.edu](mailto:jjolly@lsu.edu)