

# Transformation Planning: Advanced Learning



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Advanced Learning

February 11, 2005



# Brief Update

- Testing and appeals
  - Rainier Scholars, FRL
- Web site
  - Program descriptions (certification)
  - Standards, Task Force groups
- IEP student policy (twice-exceptional)
- Program placement (revision of student assignment plan & school consolidations)
  - APP meetings
  - Spectrum survey and meetings
- Math curriculum
  - Curricular mapping and 5<sup>th</sup> grade placement test for middle school
- Completion of professional development cycle
- Five year plan
- Eligibility criteria for March
- Procedure manual by end of year



# Transformation Goal

- Ensure that a differentiated learning experience is provided for this student group based on their learning needs
  - Differentiated curriculum (content)
    - Rigor
    - Standards-based acceleration
  - Differentiated instructional practices (process)
    - Pacing of instruction and simultaneous application of multiple instructional strategies
  - Differentiation of curriculum and instructional practices supported through assessment practices (assessment)
    - Responding to assessment findings by adjusting the curriculum, instructional practices, and means of demonstrating to reflect what students already know and can do that systemically goes beyond enrichment
  - Differentiation of means for demonstrating learning (products)



# Differentiated Example

- Choose one of the following topics and prepare an oral presentation using at least four library sources
  - The use of technology
  - Science discoveries of the past
  - Mathematics in every day life
- Debate one of the following resolutions
  - Mankind is on a path toward human progress
  - Studying our past will help us cope with the future
- Use multiple sources including surveys, interviews, and library sources in your preparation



# Differentiated Example

- On a timeline, chart the evolution of atomic theory. Describe each major model of the atom according to its major features
- Using generalizations derived around the concept of models, evaluate each major model of the atom over time. Evaluate the strengths and weaknesses of each, and create a visual to demonstrate how each model influenced the models succeeding it.



# Differentiated Curriculum

- Rigor
- Standards-based Acceleration



# Rigor

- Rigor (n) 1. Strictness; severity. 2. A trying circumstance: hardship. 3. Precision. 4. A shivering, as from a chill. (Webster)
- Rigor mortis (n) 1. A temporary muscular stiffening after death. (Webster)
- “Rigor is the goal of helping students develop the capacity to understand content that is complex, ambiguous, provocative, and personally or emotionally challenging” (Strong, p. 7)
  - Sees rigor as a curriculum goal of teaching students how to manage difficult content
  - Implies that in order to have rigor, students must regularly work with difficult texts and ideas
  - Describes different ways that content can become rigorous



# Attributes of Rigor

Strong, Silver & Perini, 2001

- Complexity
  - “To what extent is the curriculum organized around complex, interrelated concepts?”
- Emotional Engagement
  - “To what extent does the curriculum arouse strong feelings?”
- Provocativeness
  - “To what extent is the curriculum concerned with central problems in the discipline that challenge students’ previous concepts?”
- Ambiguity
  - “To what extent does the curriculum focus on symbols and images packed with multiple meanings?”



# Why Rigor is Important

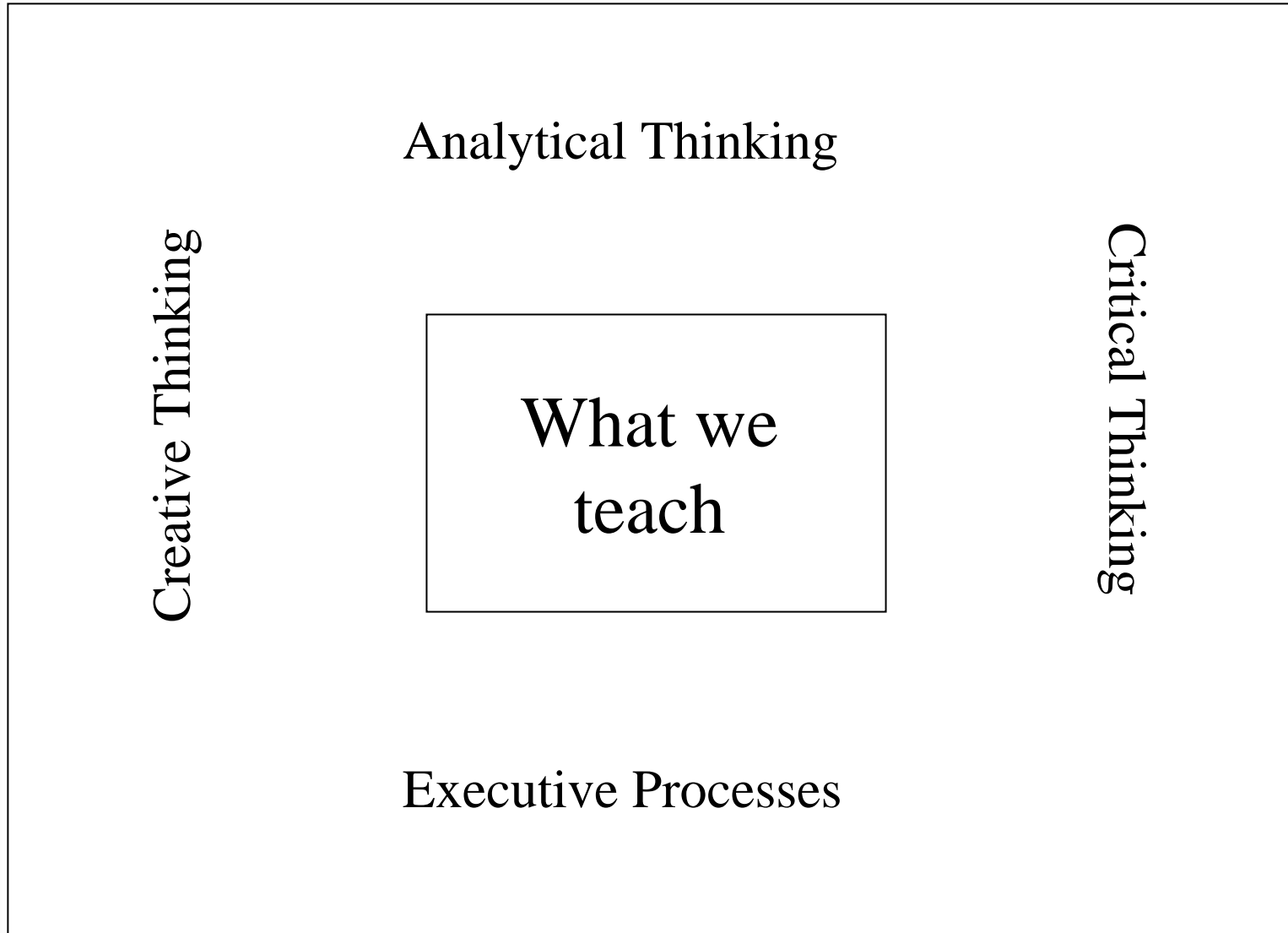
- Rigorous content demands attention, thought, and critical thinking
- Rigorous content helps us handle uncertainty- simple texts make concepts seem simple and can mask complexities and interrelationships; rigorous content challenges us to deal directly with uncertainty and to search out nuance and interrelationships
- Rigorous content increases flexibility in thinking – helps us build schema that is broad, flexible, and adaptable to multiple contexts
- Rigorous content rewards effort and helps us develop perseverance, intellectual modesty and tolerance of others' views
- Rigorous content creates self-confidence because we know the task will be difficult, but with effort, we will be able to accomplish our goals



# Complexity

- Incorporate multiple, higher-order complex thinking skills simultaneously
  - Require students to simultaneously identify points of view, judge the accuracy of the information, and develop hypotheses
- Add multiple variables to study or activity
  - Require more than one point of view when evaluating materials, incorporate more open-ended questions and/or problems that require the forming of hypotheses and drawing information from prior experiences and multiple sources
- Require multiple resources
  - Authentic sources

# Complexity through Inclusion of Complex Thinking





# Analytical Thinking Skills

- Comparing and contrasting
- Categorizing
- Classifying
- Ranking, prioritizing, and sequencing
- Seeing relationships
- Finding patterns
- Determining cause and effect
- Making predictions
- Making analogies



# Executive Functions

- Summarizing
- Setting goals
- Generalizing
- Decision making
- Planning
- Metacognitive skills
  - Learning from mistakes
  - Understanding that different types of tasks require different attention levels
  - Skills in selecting, applying and analyzing effectiveness of strategies



# Executive Functions Continued

- **Problem Solving Skills**
  - Identify general problem
  - Clarify problem
  - Formulate hypothesis
  - Formulate appropriate questions
  - Generate related ideas
  - Formulate alternative solutions
  - Choose best solution
  - Apply the solution
  - Monitor acceptance of the solution
  - Draw conclusions



# Critical Thinking Skills

## ■ Inductive thinking

- Identifying cause and effective
- Analyzing open-ended problems
- Making inferences
- Determining relevant information

## ■ Deductive thinking

- Using logic
- Spotting contradictory statements

## ■ Evaluative thinking skills

- Distinguishing between fact and opinion
- Judging credibility of a source
- Identifying central issues and problems
- Recognizing underlying assumptions
- Evaluating hypotheses
- Classifying data
- Predicting consequences
- Comparing similarities and differences
- Evaluating arguments



# Creative Thinking Skills

- Listing attributes of objects/situations
- Generating multiple ideas (fluency)
- Generating different ideas (flexibility)
- Generating unique ideas (originality)
- Generating detailed ideas (elaboration)
- Synthesizing information
- Predicting – seeing patterns, compare and contrast, identify relationships, determine cause and effect, anticipate likely events in the future



# Other Elements of Rigor

- **Ambiguity**
  - Open-endedness
  - Multiple interpretations
- **Provocativeness**
  - Real-world engagement through problem and issue-based learning
  - Inquiry based
- **Emotional Engagement**
  - Real-world problems and issues
  - Connected to experiences or issues students/their communities are involved in/highly value



# Standards-Based Acceleration

- Curriculum (the “what”) must be standards based
- Students move through the curriculum faster and many times demonstrate proficiency in assigned grade level GLEs prior to receiving formal instruction
- GLE acceleration in reading and math
  - Advanced Learning Standards
- Continuum of GLEs
- Curricular mapping



# Instructional Practices

- Simultaneous application of varied approaches
- Application of a broader range of instructional approaches
- Pacing of instruction to allow students to get to more complex concepts quickly
  - Pretesting so can move into what students need to learn/know how to do, rather than moving through all prerequisites or through concept sand skills lockstep pattern as other students may require



# Instructional Practices in Inclusive Settings: Beginning Questions

- How often are advanced learners serving in a tutoring/helper mode vs working on development of their skills and knowledge?
- How often are advanced learners waiting for others to finish so that instruction can proceed to new ideas?
- How often are advanced learners given more to do (e.g., more problems) rather than moved to new concepts and skills?
- How often are these students really challenged as demonstrated by high levels of engagement, motivation, excitement about what they're learning?
- How much time do student spend learning on their own vs receiving instruction from the teacher?
- How often are these students concealing their abilities by not responding when they know the answer to avoid calling attention to themselves?
- How often are these students tuning out of classroom activities because they already know the material?
- How often do students become frustrated/unable to proceed because they are fearful of making mistakes and are unwilling/fearful of taking a risk and pushing themselves into something they do not already know or do well?



# Differentiation of Student Demonstration of Learning

- Ensuring approaches are responsive to multiple intelligences
- Tracking demonstrations used to ensure variety
- Allowing for student choice
- Requiring student reflection on learning



# Differentiation Supported through Formative Assessment

- Importance of pretesting
- Importance of providing curriculum that matches student readiness
  - No repeating and/or reviewing information students already know
  - Ensuring concepts and skills being worked on reflect the GLEs students are ready to explore
- Importance of formative assessment
- Core question: High achievers start at high levels of performance and leave grades/courses at high levels of performance, but what academic skills/understands did student gain as a result of instruction?