Preparing Students for the 21st Century

Rigor Relevance Relationships for ALL Students

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AGENDA

- ♦ Rigor/Relevance Framework
- ♦ Planning Instruction
  - ♦ Quadrant D Lessons
  - ♦ Instructional Strategies
  - ♦ Assessment
- ♦ Action Planning

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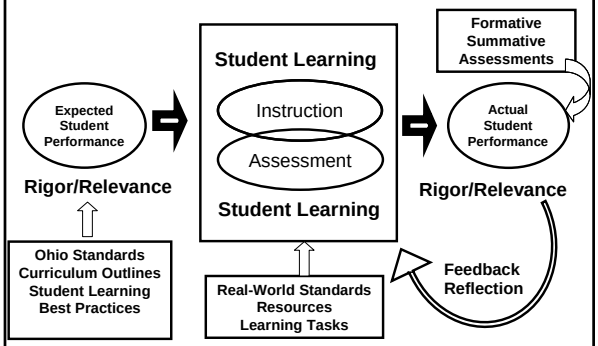
Rigorous and Relevant Instruction



ICLE Philosophy

- ♦ Rigor
- ♦ Relevance
- ♦ Relationships
- ♦ All Students

Thinking Continuum

Assimilation of knowledge

Level of challenge of the learning for the student

Acquisition of knowledge

Knowledge Taxonomy

Awareness Level

- ♦ Recall specific information
- ♦ list, arrange, underline, identify, locate
- ♦ List the four basic math functions; label the parts of a cell; identify the parts of a sentence; list all 20th Century Wars that engaged the United States

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Knowledge Taxonomy

Comprehension Level

- Understanding/interpretation of information
- **define, explain, calculate, reword**
- Define each of the basic math functions or explain the function of each cell part; use an adjective correctly in a sentence; explain the 1st Amendment

Knowledge Taxonomy

Application level

- Applying knowledge and understanding to a new situation
- **solve, operate, use, handle, apply**
- Apply math functions to solve a word problem; use a Vernier Light Sensor to determine the amount of reflected light of an object; make a scale drawing of a cell; change the oil in a car

Knowledge Taxonomy

Analysis Level

- Separate a complex idea into its components
- **categorize, simplify, examine, survey**
- Compare the costs and benefits of two cell phone plans; compare the similarities and differences between two characters in the short story; compare similar words to describe objects

Knowledge Taxonomy

Synthesis Level

- Combining knowledge to form a new idea.
- **create, build, generate, reorganize**
- Design a cell phone package that meets your needs and budget; rewrite the ending of Macbeth to bring it into the 21st century; design objects related to famous mathematician discoveries; brainstorm words to describe an object

Knowledge Taxonomy

Evaluation Level

- Choosing an alternative in making a decision.
- **decide, classify, judge, prioritize**
- Given two cell phone plans justify which plan best meets your needs and budget; create a rubric for evaluating writing; recommend software purchase; recommend policies for your school to prevent disease from spreading

Knowledge Taxonomy

Verb List

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Action Continuum

Acquisition of knowledge → **Application of knowledge**

Relevance of learning to life and work

Application Model

Knowledge

- Learning Knowledge, Attitude, or Skills
- Understanding classroom rules; act out a story's character; use classroom reference tools

Apply in Discipline

- Using the knowledge, attitude, or skills within the course curriculum
- Label parts of speech in a sentence; measure angles with a protractor; use a microscope

Application Model

Apply Across Disciplines

- Using the knowledge, attitude, or skills in all discipline curriculums
- Use word processing skills; conduct an Internet search; use library reference materials; collect temperature data and present in graph format

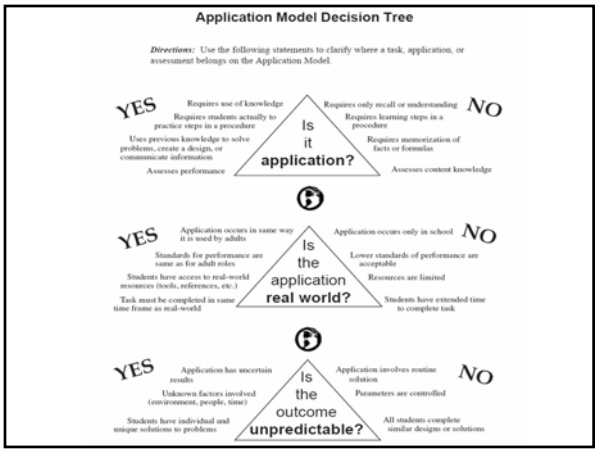
Apply to Predictable Situations

- Using information to analyze and solve real problems with predictable solutions
- Calculate ingredients to triple a recipe; assemble a product following written directions; write a letter to request specific data

Application Model

Apply to Unpredictable Situations

- Using information to analyze and solve real problems with unknown solutions
- Prepare a budget for your family's vacation to Disney World
- Plan a large school event and calculate the cost
- Design a brochure to educate children on the benefits of healthy eating
- Create a Bill of Rights for your school



A relevant lesson answers

- **What am I Learning?**
- **Why am I learning it?**
- **How will I use it?**

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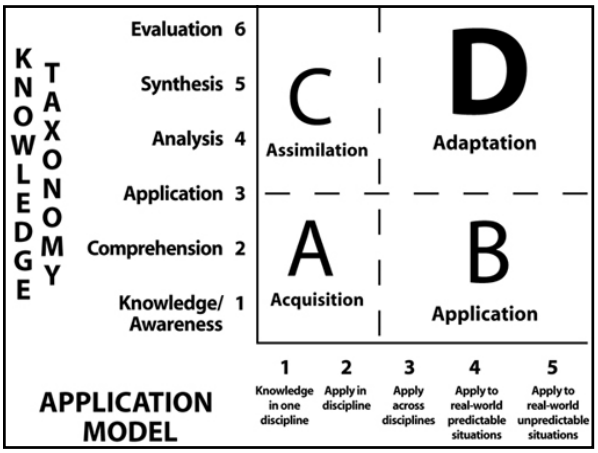
Adding Relevancy to Any Learning

Compare Learning to …

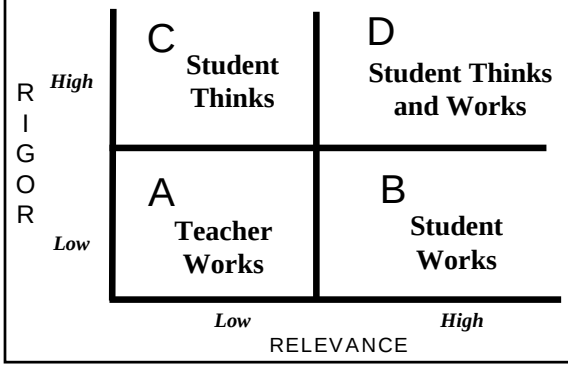
- Student's life
- Family's life
- Student's community and friends
- Our world, nation, state
- World of work
- World of service
- World of business and commerce that we interact with

Use Real World Examples

- Moral, ethical, political, cultural points of view and dilemmas
- Real world materials
- Internet resources
- Video and other media
- Scenarios, real life stories
- News - periodicals, media



Rigor/Relevance Framework



Quadrant A

Ask questions to recall facts, make observations or demonstrate understanding

- What is/are__?
- What did you observe__ ?
- What else can you tell me__?
- What does it mean__?
- Where did you find that__?
- Who is/was__?
- In what ways_?
- How would you define that in your own terms?
- What did/do you notice about this __?
- What did/do you feel/see/hear/smell __?
- What do you remember about _?

Quadrant B

Ask questions to apply or relate

- How would you do that?
- Where will use that knowledge?
- How does that relate to your experience?
- How can you demonstrate that?
- What observations relate__?
- Where would you locate that information?
- Calculate that for __?
- How would you illustrate that?
- Who could you interview?
- How would you collect that data?
- How do you know it works?
- Can you apply what you know to this real world problem?
- How do you make sure it is done correctly?

Quadrant C

Ask questions to summarize, analyze, organize, or evaluate

- How are these similar/different?
- How is this like___?
- What's another way we could say/explain/express that?
- What do you think are some reasons/causes that _____ ?
- Why did __ changes occur?
- How can you distinguish between__?
- What is a better solution to__?
- How would you defend your position about__?
- What changes to __ would you recommend?
- What evidence can you offer?
- How do you know?
- Which ones do you think belong together?
- What is the author's purpose?

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Quadrant D

Ask questions to predict, design, create

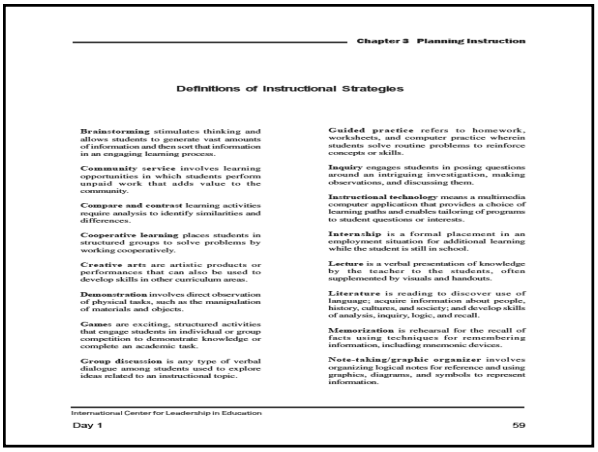
- How would you design a __ to __?
- How would you compose a song about__?
- How would you rewrite the ending of the story?
- What would be different today, if that event occurred?
- Can you see a possible solution to__?
- How could you teach that to others?
- Which resources would you use to deal with__?
- How would you devise your own way to deal with__?
- What new and unusual uses would you create for__?
- Can you develop a proposal which would_?
- How would you do it differently?

Learning happens when …

- Effective Teaching
  - Rigorous/Relevant Instruction
- Right Content
  - Taught and Assessed
- Best Strategy Used
- Appropriate Timing for Student Understanding and Application

Instructional Strategies

- **Brainstorming**
- **Cooperative Learning**
- **Demonstration**
- **Guided Practice**
- **Inquiry**
- **Instructional Technology**
- **Lecture**
- **Note-taking/Graphic Organizers**
- **Memorization**
- **Presentations/Exhibitions**
- **Research**
- **Problem-based learning**
- **Project Design**
- **Simulation/Role-playing**
- **Socratic Seminar**
- **Teacher Questions**
- **Work-based Learning**



Chapter 3 Planning Instruction

Definitions of Instructional Strategies

Brainstorming stimulates thinking and allows students to generate vast amounts of information and then sort that information in an engaging learning process.

Community service involves learning opportunities in which students perform unpaid work that adds value to the community.

Compare and contrast learning activities require analysis to identify similarities and differences.

Cooperative learning places students in structured groups to solve problems by working cooperatively.

Creative arts are artistic products or performances that can also be used to develop skills in other curriculum areas.

Demonstration involves direct observation of physical tasks, such as the manipulation of materials and objects.

Games are exciting, structured activities that engage students in individual or group competition to demonstrate knowledge or complete an academic task.

Group discussion is any type of verbal dialogue among students used to explore ideas related to an instructional topic.

Guided practice refers to homework, worksheets, and computer practice wherein students solve routine problems to reinforce concepts or skills.

Inquiry engages students in posing questions around an intriguing investigation, making observations, and discussing them.

Instructional technology means a multimedia computer application that provides a choice of learning paths and enables tailoring of programs to student questions or interests.

Internship is a formal placement in an employment situation for additional learning while the student is still in school.

Lecture is a verbal presentation of knowledge by the teacher to the students, often supplemented by visuals and handouts.

Literature is reading to discover use of language; acquire information about people, history, cultures, and society; and develop skills of analysis, inquiry, logic, and recall.

Memorization is rehearsal for the recall of facts using techniques for remembering information, including mnemonic devices.

Note-taking/graphic organizer involves organizing logical notes for reference and using graphics, diagrams, and symbols to represent information.

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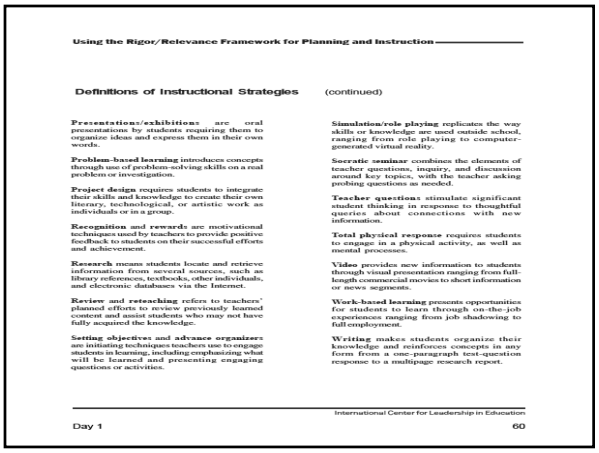

Using the Rigor/Relevance Framework for Planning and Instruction

Definitions of Instructional Strategies (continued)

Presentations/exhibitions are oral presentations by students requiring them to organize ideas and express them in their own words.

Problem-based learning introduces concepts through use of problem-solving skills on a real problem or investigation.

Project design requires students to integrate their skills and knowledge to create their own literary, technological, or artistic work as individuals or in a group.

Recognition and rewards are motivational techniques used by teachers to provide positive feedback to students on their successful efforts and achievement.

Research means students locate and retrieve information from several sources, such as library references, textbooks, other individuals, and electronic databases via the Internet.

Review and reteaching refers to teachers' planned efforts to review previously learned content and assist students who may not have fully acquired the knowledge.

Setting objectives and advance organizers are initiating techniques teachers use to engage students in learning, including emphasizing what will be learned and presenting engaging questions or activities.

Simulation/role playing replicates the way skills or knowledge are used outside school, ranging from role playing to computer-generated virtual reality.

Socratic seminar combines the elements of teacher questions, inquiry, and discussion around key topics, with the teacher asking probing questions as needed.

Teacher questions stimulate significant student thinking in response to thoughtful queries about connections with new information.

Total physical response requires students to engage in a physical activity, as well as mental processes.

Video provides new information to students through visual presentation ranging from full-length commercial movies to short information or news segments.

Work-based learning presents opportunities for students to learn through on-the-job experiences ranging from job shadowing to full employment.

Writing makes students organize their knowledge and reinforces concepts in any form from a one-paragraph test-question response to a multipage research report.

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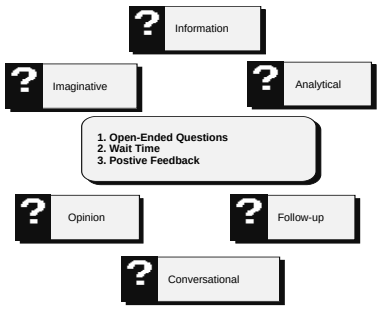
Teacher Questions



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Selection of Strategies Based on Rigor/ Relevance Framework

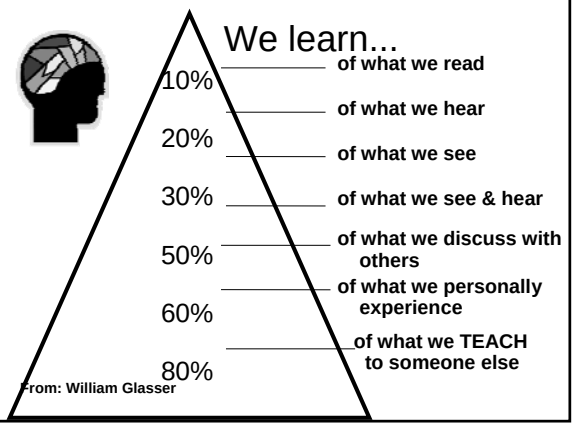
Strategy	Acquisition Quadrant A	Assimilation Quadrant C	Application Quadrant B	Adaptation Quadrant D
Brainstorming	★★	★★★	★	★★★
Cooperative Learning	★★	★★	★★★	★★★
Demonstration	★	★	★★★	★★
Guided Practice	★★★	★★	★★	★
Inquiry	★	★★★	★★	★★★
Instructional Technology	★★	★★★	★★★	★★★
Lecture	★★★	★★	★	★
Memorization	★★★	★★	★★	★
Note-taking/Graphic Organizers	★★	★★	★★	★★
Presentations/Exhibitions	★	★★	★★	★★★
Problem-based Learning	★★	★★	★★★	★★★
Project Design	★	★	★★★	★★★
Research	★★	★★★	★	★★★
Simulation/Role-playing	★★	★★	★★★	★★★
Socratic Seminar	★	★★★	★	★★★
Teacher Questions	★★	★★★	★	★★★
Work-based Learning	★★	★★	★★★	★★★

Moments of Quadrant D Instruction

- Quadrant D experiences integrated into daily practice through short, quick activities.
- Instructional activities that raise the level of rigor (thinking) and relevance (application) and are aligned with the Rigor/Relevance Framework.

Quad D Moments

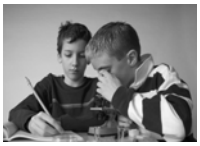
Teaching Others	Storytelling
Current Event	Quiz Show
Inquiry	Future Think
Did You Know?	Summarizing
Google It!	Why Questions
How Did That Happen?	Analyze It!
Original Ideas	Remind Me
Can You See it Now?	Write to Learn
Justify Your Position	What If?



Matching Classroom Instruction that Works with Instructional Strategies for R and R

Three major meta studies on instructional strategies:

- Marzano and MCREL
- Walberg in Cawelti
- McTighe and the Maryland Department of Education



What do they all agree upon?

Some of the Research Says…

Classroom Climate to Support Thinking	**Cooperative Learning**	**Concept Development**	**Multiple Intelligences and/or Learning Styles**
Creative Problem Solving	**Direct Teaching of Thinking**	**Graphic Organizers**	**Meta-cognition**

Jay McTighe, Maryland State Department of Education

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Best Practices

- Parent involvement
- Require and grade high quality homework
- Aligned time on task
- Direct teaching
- Graphic organizers
- Teaching of learning strategies to students
- Tutoring
- Master learning
- Cooperative learning
- Adaptive education

From Educational Research Services, Walberg in Cawelti

Researched-based Best Practices

Categories of Instructional Strategies that Affect Student Achievement	Percentile Gain
Identifying similarities and differences, using metaphors and analogies	45
Summarizing and notetaking	34
Reinforcing effort and providing recognition	29
Homework and practice	28
Nonlinguistic representations	27
Cooperative learning	27
Setting objectives and providing feedback	23
Generating and testing hypotheses	23
Questions, cues, and advance (graphic) organizers	22

Marzano, R., Pickering, D., & Pollack, J., Classroom Instruction That Works, 2001

Student Learning Styles

1. **Concrete-Sequential** – students respond to well organized instruction that requires them to recall and construct correct responses.
2. **Abstract-Sequential** – learners respond to more collaborative instruction that requires them to analyze information and explain answers.
3. **Concrete-Random**- learners respond to opportunities to be creative and design products and individual responses.
4. **Abstract-Random** – learners respond to creative learning activities.

Matching Strategies to Learning Styles

Best Strategies for Concrete-Sequential Learners

- Demonstration
- Guided Practice
- Lecture
- Memorization
- Teacher Questions

Matching Strategies to Learning Styles

Best Strategies for Abstract-Sequential Learners

- Cooperative Learning
- Problem-based Learning
- Research
- Socratic Seminar

Matching Strategies to Learning Styles

Best Strategies for Concrete-Random Learners

- Instructional Technology
- Problem-based Learning
- Project Design
- Work-based Learning

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Matching Strategies to Learning Styles

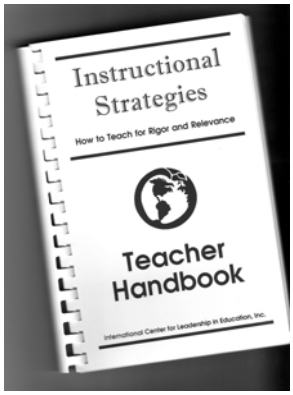
Best Strategies for Abstract-Random Learners

- Brainstorming
- Inquiry
- Presentations/Exhibitions
- Simulations/Role-playing

Matching Strategies to Learning Style

Strategy	Concrete-Sequential	Abstract-Sequential	Concrete-Random	Abstract-Random
Brainstorming	★	★★	★★	★★★
Cooperative Learning	★	★★★	★★	★★
Demonstration	★★★	★★	★★	★
Guided Practice	★★★	★★	★★	★
Inquiry	★	★★	★★	★★★
Instructional Technology	★★	★★	★★★	★★
Lecture	★★★	★★	★	★
Memorization	★★★	★	★★	★
Note-taking/Graphic Organizers	★★	★★	★★	★★
Presentations/ Exhibitions	★★	★★	★★	★★★
Problem-based Learning	★	★★★	★★★	★★
Project Design	★★	★	★★★	★
Research	★★	★★★	★★	★
Simulation/ Role-playing	★	★	★★	★★★
Socratic Seminar	★	★★★	★	★★
Teacher Questions	★★★	★★	★★	★
Work-based Learning	★★	★	★★★	★★

Instructional Strategies: How to Teach for Rigor and Relevance

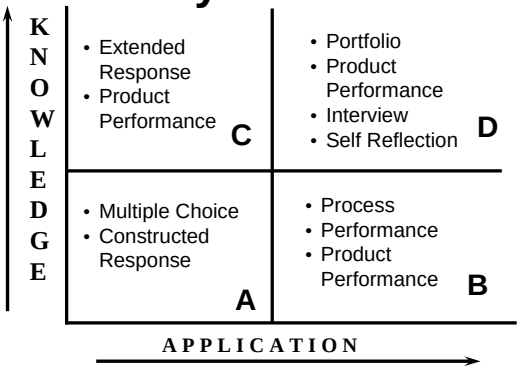


Rigorous and Relevant Instruction

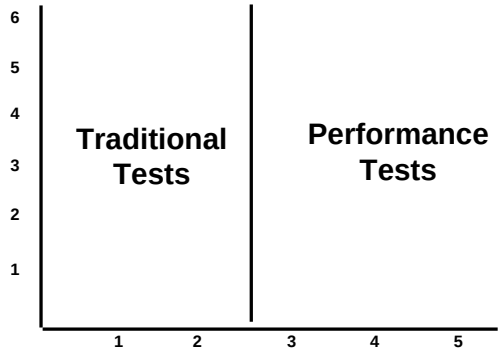
Types of Assessment

- **Multiple Choice**
- **Constructed Response**
- **Extended Response**
- **Process Performance**
- **Product Performance**
- **Portfolio**
- **Interview**
- **Self Reflection**

Primary Assessments



Rigor/Relevance Framework



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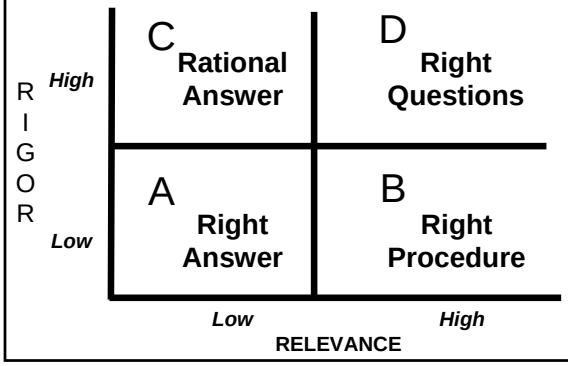
Rigor/Relevance Framework

Did Students Get it Right?



R/R and Assessment

- **Determine the level of Rigor and Relevance on state tests.**
- **Develop your tests to parallel state tests when preparing for them.**
- **Use performance assessment when you want Quadrant D achievement**
- **Keep level of assessment consistent with expectation for performance.**
- **Let students know assessment in advance.**

Matching Strategies to Forms of Student Assessment

Strategy	Multiple Choice	Constructed Response	Extended Response	Process Performance	Product Performance	Portfolio	Interview	Self Reflection
Brainstorming	★	★	★	★★★	★★	★★	★★	★★★
Cooperative Learning	★	★	★★	★★★	★★★	★★	★★	★★
Demonstration	★★	★★★	★★	★★★	★★	★★	★	★
Guided Practice	★★★	★★★	★★	★★★	★★	★★	★	★
Inquiry	★	★	★★	★★	★★★	★★	★★★	★★★
Instructional Technology	★★	★	★	★★	★★★	★★★	★★	★★
Lecture	★★★	★★★	★★★	★	★	★	★★	★
Memorization	★★★	★★★	★★	★★★	★★	★	★	★
Note-taking and Graphic Organizers	★	★★	★★★	★	★★	★★	★★	★★★
Presentations/ Exhibitions	★	★	★★	★★★	★★★	★★★	★★	★★★
Problem-based Learning	★	★★	★★★	★★★	★★★	★★	★★	★★
Project Design	★	★★	★★★	★★★	★★★	★★★	★★	★★
Research	★	★	★★	★★★	★★★	★★★	★★	★★★
Simulation/ Role-playing	★	★	★★	★★★	★	★	★★	★★★
Socratic Seminar	★	★	★★★	★★	★	★	★★★	★★★
Teacher Questions	★★	★★★	★★	★	★	★	★★	★★
Work-based Learning	★	★	★★	★★★	★★★	★★★	★★★	★★

21st Century Skills

Seven Cs	Component Skills
Critical Thinking & Problem-solving	Research, Analysis, Synthesis, Project Management, etc.
Creativity & Innovation	New Knowledge Creation, "Best Fit" Design Solutions, Artful Storytelling, etc.
Collaboration, Teamwork & Leadership	Cooperation, Compromise, Consensus, Community-building, etc.
Cross-cultural Understanding	Across Diverse Ethnic, Knowledge & Organizational Cultures
Communication & Media Literacy	Crafting & Analyzing Messages & Using Media Effectively
Computing & ICT Literacy	Effective Use of Electronic Information & Knowledge Tools
Career & Learning Self-reliance	Managing Change, Lifelong Learning & Career Redefinition

Creating a Learning Environment for 21st Century Skills

Students working in teams to experience and explore *relevant*, *real-world problems*, *questions*, *issues*, and *challenges*; then creating *presentations* and *products* to *share* what they have learned

21st Century Skills are Skill-Based

To learn collaboration –
work in teams

To learn critical thinking –
take on complex problems

To learn oral communications –
Present

To learn written communications –
Write

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21st Century Skills are Skill-Based

To learn technology –
Use technology

To develop citizenship –
Take on civic and global issues

To learn about careers –
do internships

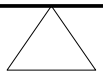
To learn content –
Research and do all of the above

Today's Students are Digital Natives

Conventional Speed ⇨ Twitch Speed
Step-by-Step ⇨ Random Access
Linear Processing ⇨ Parallel Processing
Text First ⇨ Graphics First
Work-Oriented ⇨ Play Oriented
Stand-alone ⇨ Connected

A Project Learning Classroom is

Teacher-directed	Student-directed
Direct Instruction	Collaborative Construction
Knowledge	Skills
Content	Process
Basic Skills	Higher-order Thinking
Theory	Practice
Curriculum	Life Skills
Individual	Group
Classroom	Community
Summative Assessed	Formative Evaluation
Learning for School	Learning for Life

A Better  **Balance**

Teacher

20th Century	21st Century
♦ Content Provider	♦ Learning Facilitator
♦ 180 Days	♦ Anytime
♦ Carnegie Units; A, B, C, D, F	♦ Competency
♦ All Students	♦ Each Student
♦ Individualized/ Differentiated	♦ Personalized
♦ 4 Years: F, S, Jr., Sr.	♦ Student's timetable
♦ Boring	♦ Engaging
♦ Dropouts	♦ Dropouts are taught about in History

Engagement-based Learning and Teaching

Pedagogy

- ♦ Design for Rigor/Relevance
- ♦ Personalize Learning
- ♦ Use Active Learning Strategies
- ♦ Have Literacy Focus
- ♦ Attend to Classroom Environment

Resource Kit

- Planning tools and professional development activities to increase rigor and relevance across all subjects/ grades

Teacher Handbook

- Key understandings to help teachers apply the Rigor/Relevance Framework in their classrooms

Visit at the Resource Center or http://Store.LeaderEd.com

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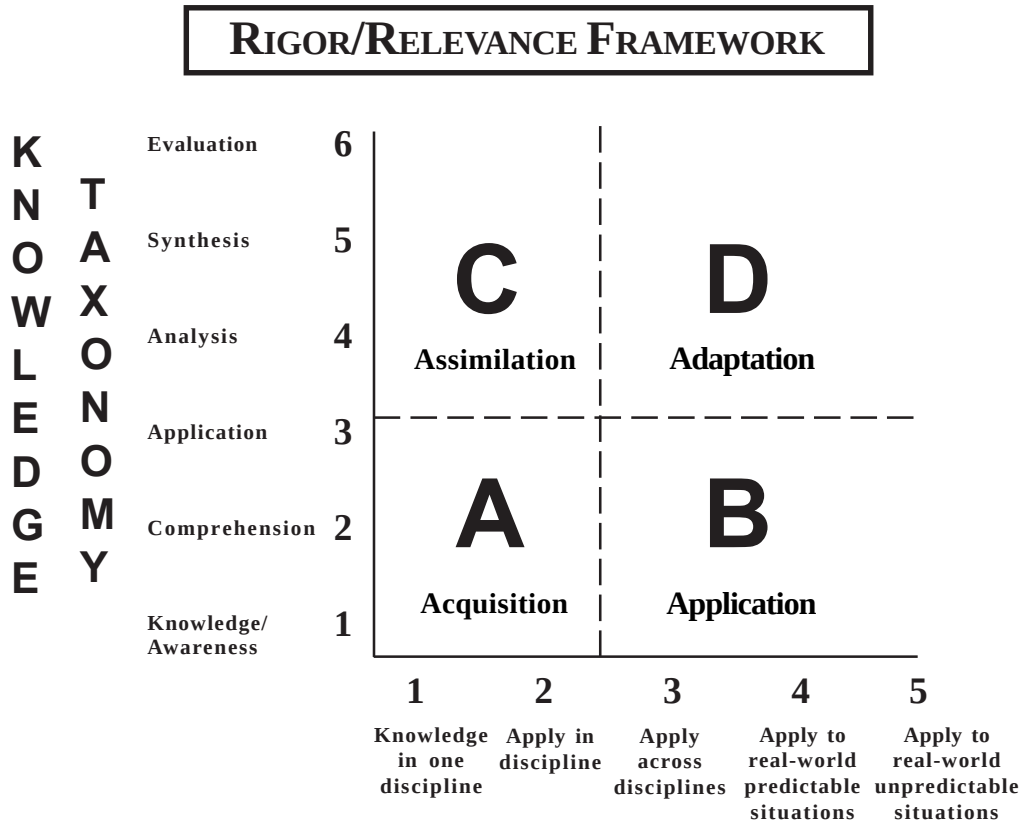


APPLICATION MODEL

The Rigor/Relevance Framework has four quadrants.

Quadrant A represents simple recall and basic understanding of knowledge for its own sake. Quadrant C represents more complex thinking but still knowledge for its own sake. Examples of quadrant A knowledge are knowing that the world is round and that Shakespeare wrote *Hamlet*.

Quadrant C embraces higher levels of knowledge, such as knowing how the U.S. political system works and analyzing the benefits and challenges of the cultural diversity of this nation versus other nations.

Quadrants B and D represent action or high degrees of application. Quadrant B would include knowing how to use math skills to make purchases and count change. The ability to access information in wide-area network systems and the ability to gather knowledge from a variety of sources to

solve a complex problem in the workplace are types of Quadrant D knowledge.

Each of these four quadrants can also be labeled with a term that characterizes the learning or student performance.

Quadrant A — Acquisition

Students gather and store bits of knowledge and information. Students are primarily expected to remember or understand this acquired knowledge.

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.

Quadrant C — Assimilation

Students extend and refine their acquired knowledge to be able to use that knowledge automatically and routinely to analyze and solve problems and create unique solutions.

Quadrant D — Adaptation

Students have the competence to think in complex ways and also apply knowledge and skills they have acquired. Even when confronted with perplexing unknowns, students are able to use extensive knowledge and skill to create solutions and take action that further develops their skills and knowledge.

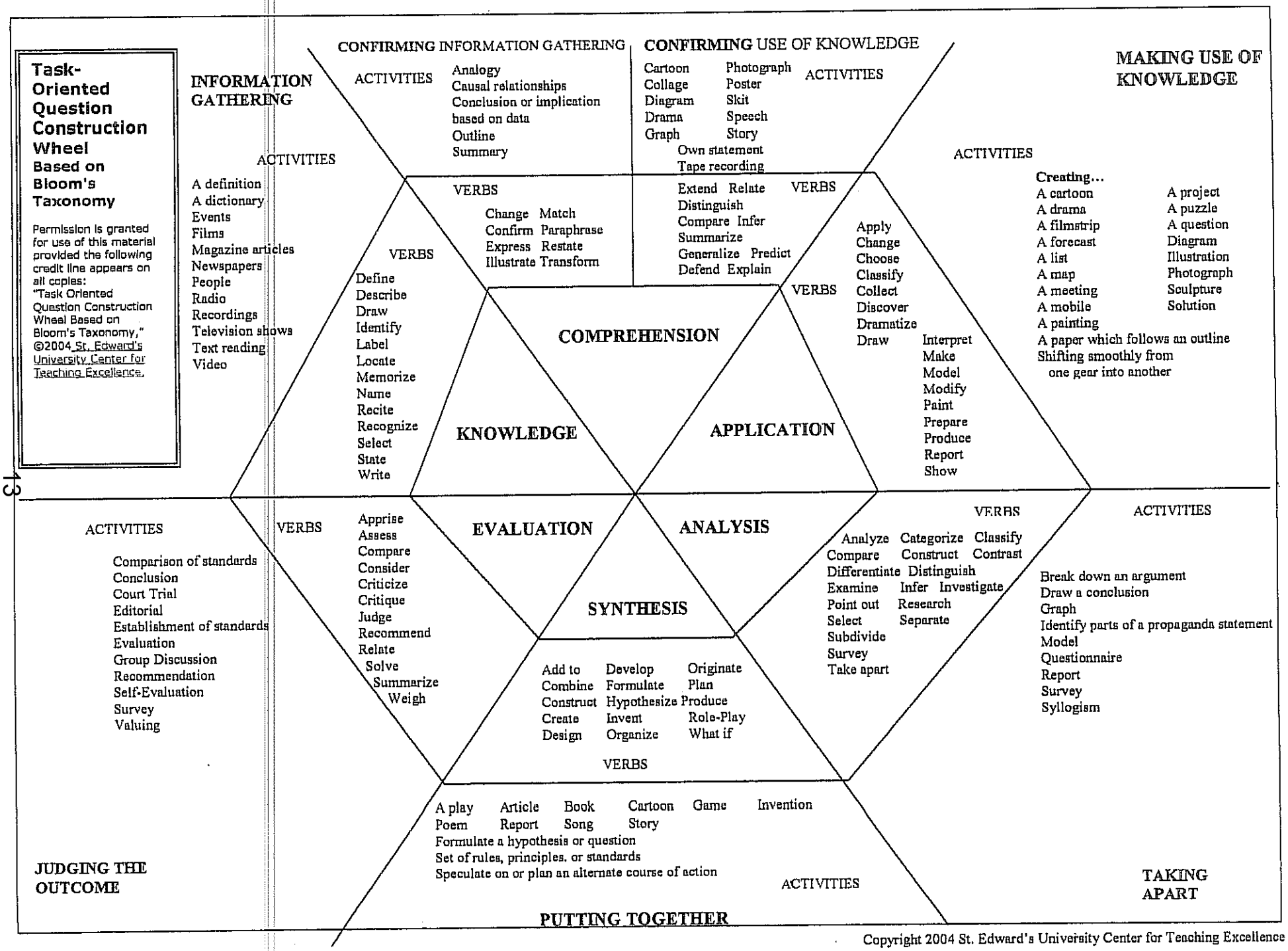
Here is an example involving technical reading and writing.

Quadrant A
Recall definitions of various technical terms.

Quadrant B
Follow written directions to install new software on a computer.

Quadrant C
Compare and contrast several technical documents to evaluate purpose, audience, and clarity.

Quadrant D
Write procedures for installing and troubleshooting new software.



Teacher Questions by Quadrant

Ask questions to summarize, analyze, organize, or evaluate.

- How are these similar/different?
- How is this like___?
- What's another way we could say/explain/express that?
- What do you think are some reasons/causes that _____ ?
- Why did __ changes occur?
- How can you distinguish between__?
- What is a better solution to__?
- How would you defend your position about__?
- What changes to __ would you recommend?
- What evidence can you offer?
- How do you know?
- Which ones do you think belong together?
- What things/events lead up to __ ?
- What is the author's purpose?

C

Ask questions to predict, design, or create.

- How would you design a __ to __?
- How would you compose a song about__?
- How would you rewrite the ending of the story?
- What would be different today, if that event occurred differently?
- Can you see a possible solution to__?
- How could you teach that to others?
- If you had access to all resources how would you deal with__?
- How would you devise your own way to deal with__?
- What new and unusual uses would you create for__?
- Can you develop a proposal which would_?
- How would you have handled__?
- How would you do it differently?

D

Note: Quadrants B and D involve student doing as well as answering questions, but these questions help to move toward increased relevance.

A

Ask questions to recall facts, make observations or demonstrate understanding.

- What is/are__?
- How many__?
- How do/does__?
- What did you observe__ ?
- What else can you tell me__?
- What does it mean__?
- What can you recall__?
- Where did you find that__?
- Who is/was__?
- In what ways_?
- How would you define that in your own terms?
- What did/do you notice about this __?
- What did/do you feel/see/ hear/smell __?
- What do you remember about _?
- What did you find out about __?

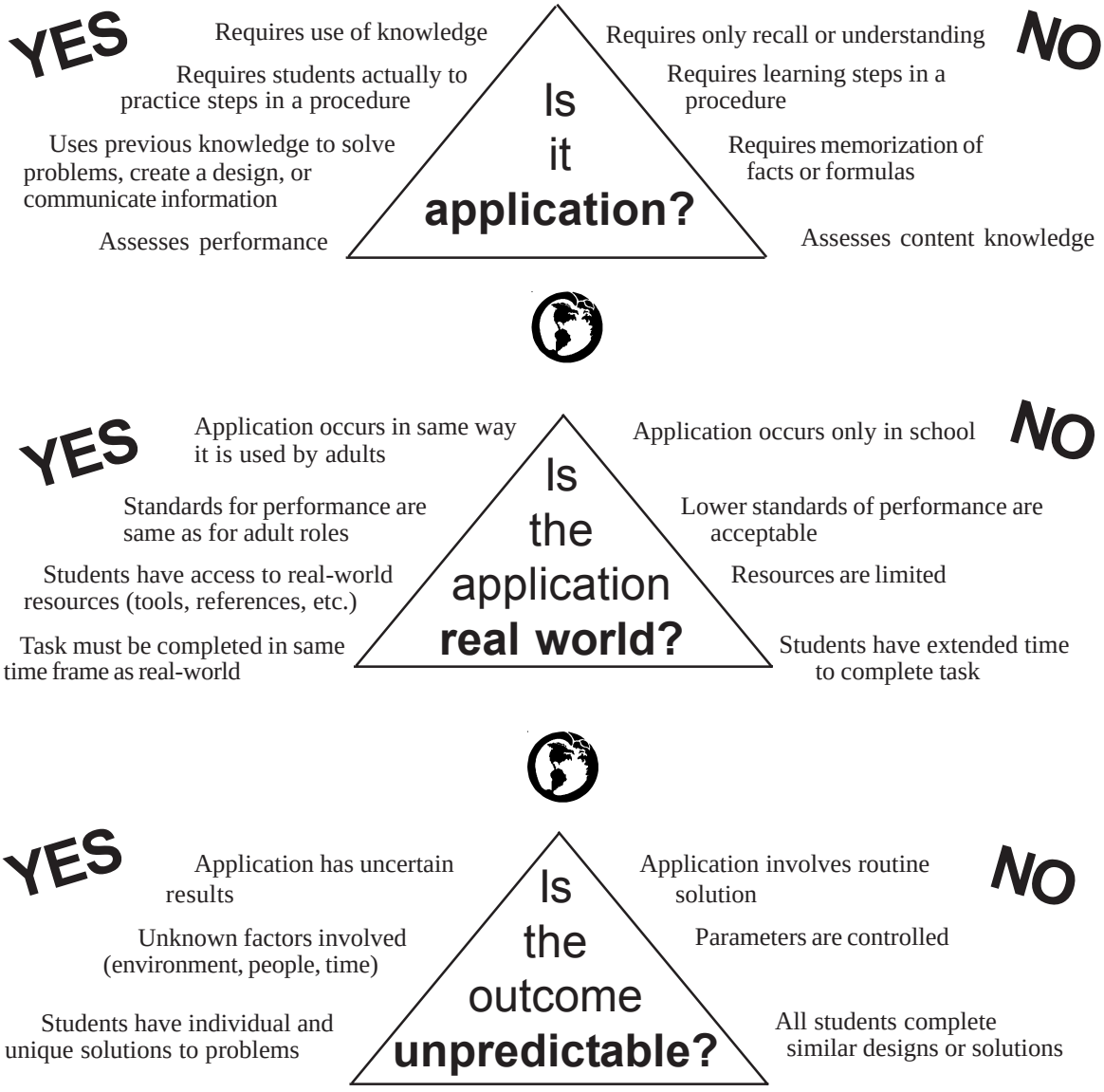
B

Ask questions to apply or relate.

- How would you do that?
- Where will use that knowledge?
- How does that relate to your experience?
- How can you demonstrate that?
- What observations relate__?
- Where would you locate that information?
- Calculate that for __?
- How would you illustrate that?
- How would you interpret?
- Who could you interview?
- How would you collect that data?
- How do you know it works?f
- Can you show me?
- Can you apply what you know to this real world problem?
- How do you make sure it is done correctly?

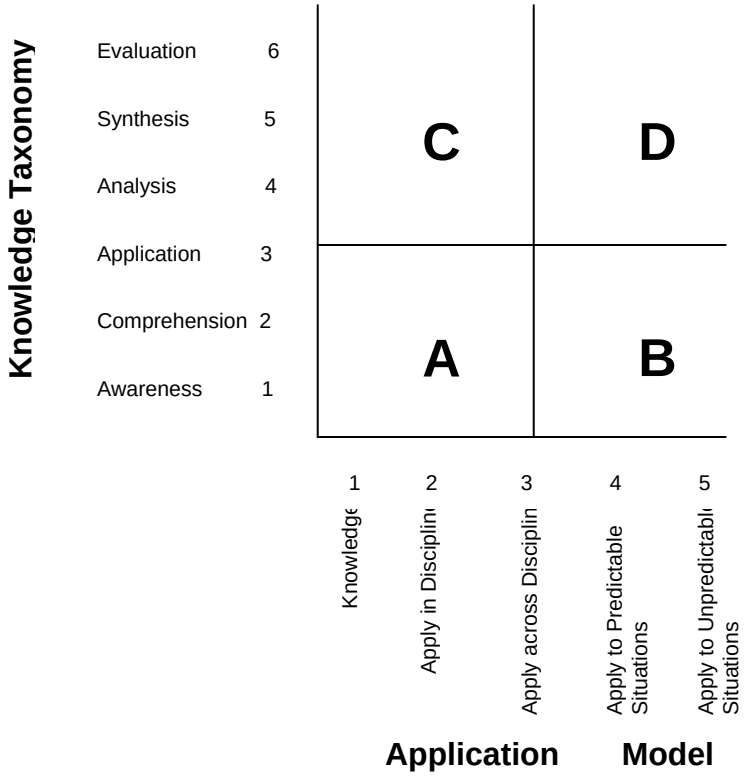
Application Model Decision Tree

Directions: Use the following statements to clarify where a task, application, or assessment belongs on the Application Model.



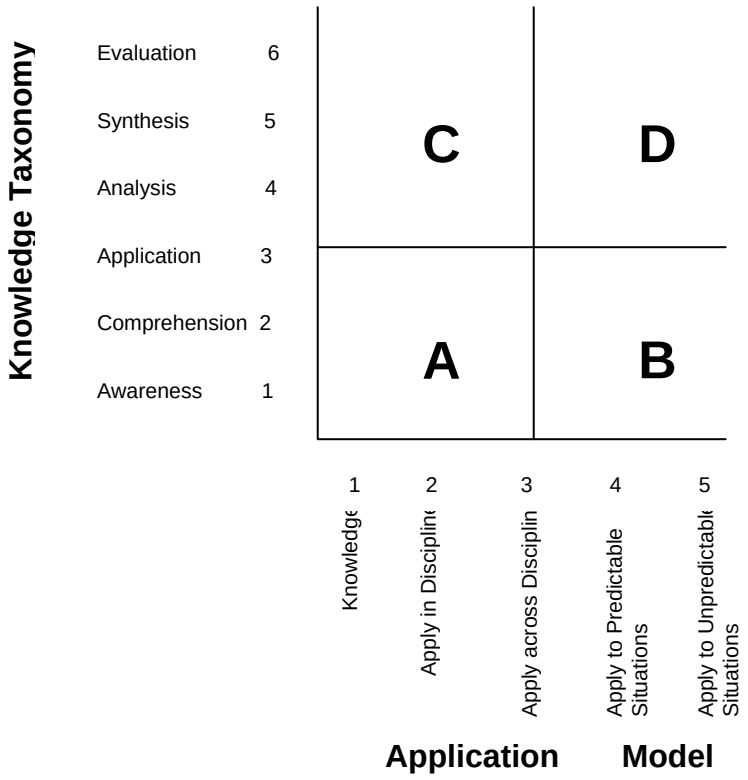
Think about a lesson, concept, or activity that you have taught recently with your students. **Describe the learning experience**.

Using the **Rigor/Relevance Framework** chart below, plot your lesson, concept, or activity as you currently teach or use it in your classroom on the **Knowledge Taxonomy** scale and on the **Application Model** scale.



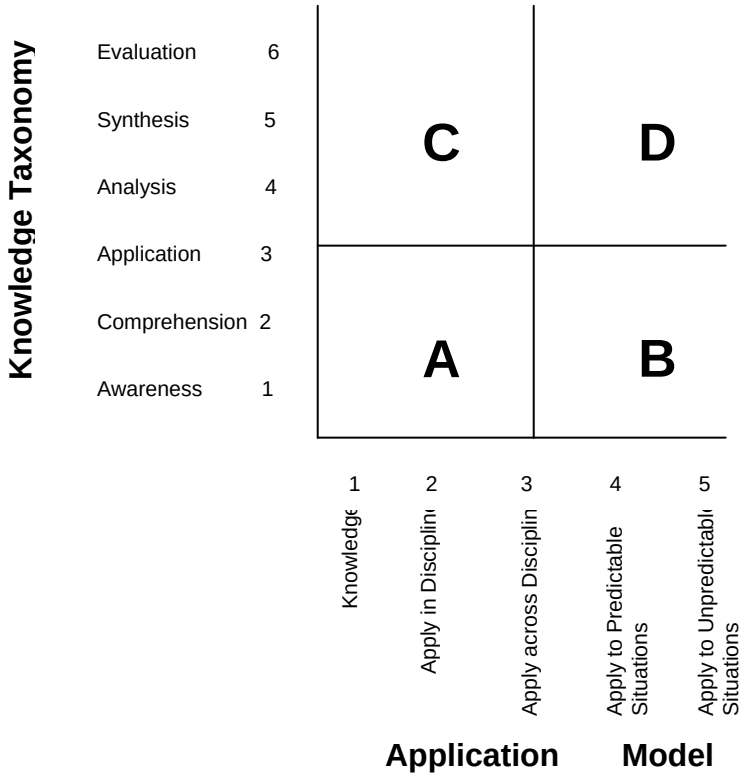
Describe how you can increase the relevancy of your lesson or activity by challenging students to apply the new learning to a real world situation.

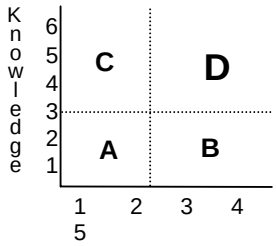
Using the **Rigor/Relevance Framework** chart below, plot your revised lesson or activity on the **Knowledge Taxonomy** scale and on the **Application Model** scale.



Describe how you can raise the level of rigor for your lesson or activity by increasing the level of critical thinking skills students will need to apply to the lesson or activity.

Using the **Rigor/Relevance Framework** chart below, plot your revised lesson or activity on the **Knowledge Taxonomy** scale and on the **Application Model** scale.



GOLD SEAL LESSON Template	**LESSON TITLE**
Subject(s) ?? **Grade Level** 9-12	**Rigor/Relevance Framework** 
Instructional Focus	Copy/paste statements from list.
Student Learning	What students should know and be able to do as a result of this lesson such as concepts, knowledge, skills, and behaviors. For example: • Students will design a poster. • Students will analyze data.
Performance Task	**Overview** A description of how a student is expected to demonstrate learning (understanding, knowledge and skills). The task may be a product, performance or extended writing that requires rigorous thinking and relevant application. It is usually written in the third person describing the learning to other educators. **Description** Teacher procedures (step-by-step instructions on how the lesson will unfold; including instructional strategies)
Essential Skills	Copy/paste essential skills in English language arts, math, social studies and science (about 10 total).
Assessment	Rubric, multiple choice, short answer or other questions **www.Rubistar.com** **www.Rubric4teachers.com**
Attachments/ Resources	Worksheets, handouts, etc.
Standards	State Standards - optional

List of D-Moments

D-Moments are short teaching strategies used within a daily lesson to increase student thinking and application into Quadrant D of the Rigor/Relevance Framework.

Original Ideas – Each student comes up with an original way to display knowledge in a different array and relate it to how something is organized in business, school, the community or the world

Teaching Others – work in pairs or small group for re-teaching or reinforcing

Current Events – connect content to current events

Inquiry – set up intriguing real world investigations for students to propose questions

Did You Know –have students calculate new and interesting facts such as the miles a baseball team travels in a season.

Google It – Use internet search engines to answer questions in students' minds

How Did That Happen?- use cause and effect analysis to determine why a phenomena, event, or action occurred in our world

Remind Me – have students develop a real world metaphor for complex content to help them remember relationships, rules, patterns and criteria

Program Your Television – relate and explain a TV show, movie, music, or other media to what students are learning.

Can You See It Now – translating numbers into visible, tangible objects to more deeply understand quantities e.g. size of sod houses in pioneer times

Storytelling – put content knowledge into fanciful stories to remember knowledge

Quiz Show – Have students design a game show to test peer application of knowledge

Future Think – make predictions of the future based on scientific or historical knowledge

Summarizing – Summarize key points from reading or teacher or student presentation and relate it to their lives or future

Why Questions – Have students pose why questions on content relate it to their lives or future

Lego Land – create manipulative object to represent concept in a lesson

At Your Service- students identify a simple act or service that would help their school or neighborhood

Analyze it – students analyze community, work or other real world materials, documents, technology against a key question

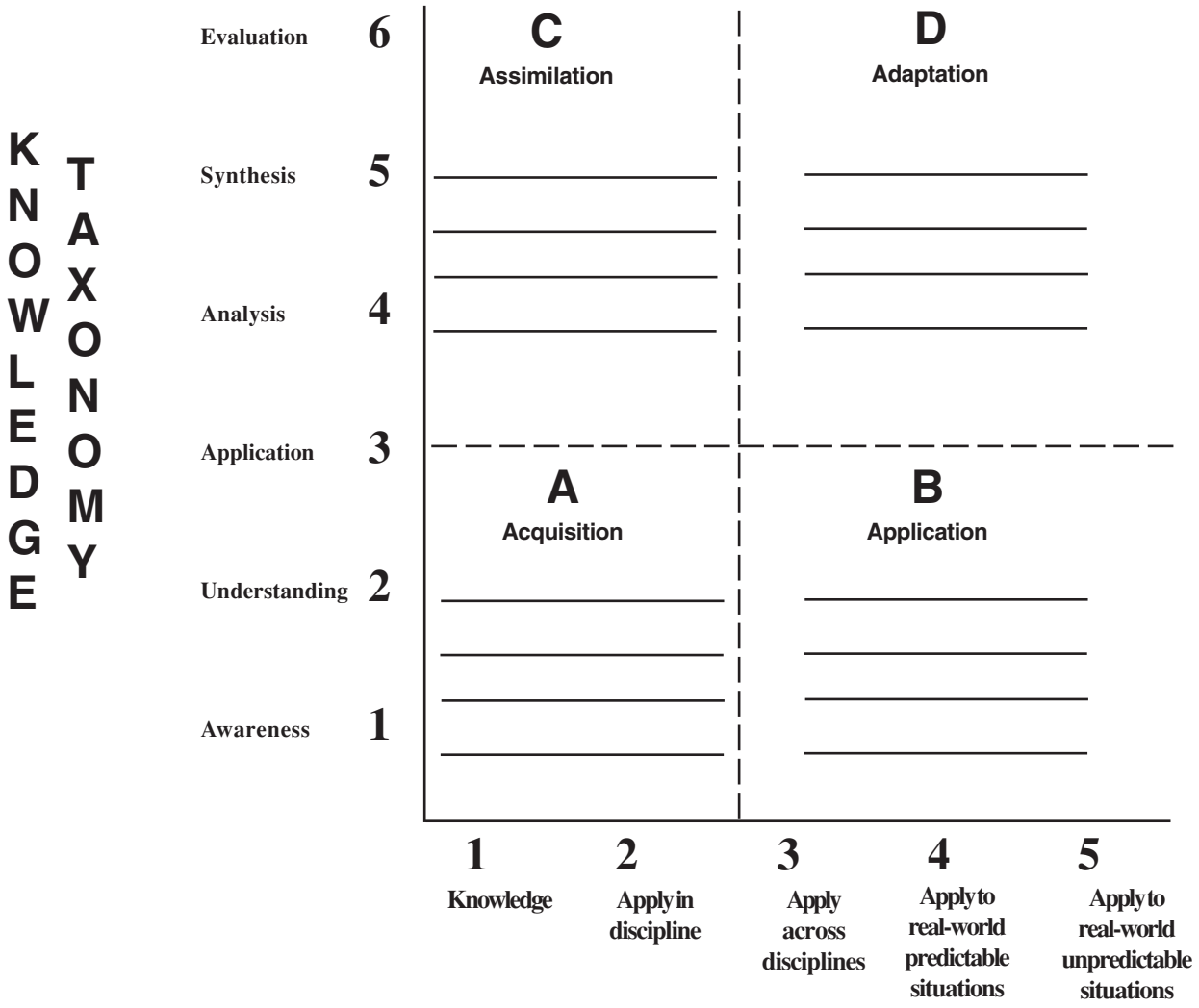
Justify Your Position – students take a position on a real world issue that impacts someone they know and justify it

Worksheet

What Works Best?

Certain instructional strategies work better than others depending on the quadrant of the Rigor/Relevance Framework in which the learning objective falls. List two or three instructional strategies that you think would be effective in each of the four quadrants.

Rigor/Relevance Framework



APPLICATION MODEL

Instructional Strategies and Rigor/Relevance Framework

Strategy	Acquisition Quadrant A	Application Quadrant B	Assimilation Quadrant C	Adaptation Quadrant D
Brainstorming	**	*	***	***
Community Service	*	***	**	***
Compare and Contrast	**	*	***	**
Cooperative Learning	**	***	**	***
Creative Arts	*	**	* * *	***
Demonstration	*	***	*	**
Games	***	**	*	*
Group Discussion	**	**	**	**
Guided Practice	***	**	**	*
Inquiry	*	**	***	***
Instructional Technology	**	***	***	***
Internship	*	***	**	***
Lecture	***	*	**	*
Literature	**	**	***	***
Memorization	***	**	**	*

KEY *** Ideal Strategy ** Appropriate Strategy * Least Appropriate Strategy

Instructional Strategies and Rigor/Relevance Framework, continued

Strategy	Acquisition Quadrant A	Application Quadrant B	Assimilation Quadrant C	Adaptation Quadrant D
Note Taking/Graphic Organizers	**	**	**	**
Presentations/ Exhibitions	*	**	**	***
Problem-based Learning	**	***	**	***
Project Design	*	***	*	***
Recognition and Rewards	***	**	**	**
Research	**	*	***	***
Review and Re-teaching	***	***	*	*
Setting Objectives and Advance Organizers	**	**	**	**
Simulation/Role Playing	**	** *	**	***
Socratic Seminar	*	*	***	***
Teacher Questions	**	*	***	***
Total Physical Response	***	***	*	*
Video	**	***	**	**
Work-based Learning	**	***	**	***
Writing	**	**	***	***

KEY *** Ideal Strategy ** Appropriate Strategy * Least Appropriate Strategy

Test Question Development

Directions: In the first box, develop a test question. Use the second box to revise the question at a higher level of knowledge and/or application.

Test Question

R/R Quadrant _____

Revised Question

R/R Quadrant _____

Test Question Evaluation Worksheet

Directions: For each of the following test questions, indicate the appropriate level of Rigor and Relevance (A, B, C, D).

R/R Level

1 The phrase "x to the fifth power" is represented by which mathematical expression?
A. x^5 B. 5^x C. 5x D. 5 + x

2 The pressure (voltage) of a battery for a bus or truck employing a diesel engine is usually 24V, if you use two 12V batteries how should they be connected to produce the necessary 24 volts?

3 The wholesale price of books bought by a book seller increase from $3.00 to $3.50. He had been selling the books at $4.00. What price must he sell the books at to make the same percentage profit.?

4 Name the five bases that make up Deoxyribonucleic acid (DNA) and are noted by the letters A,T,G,C.

5 Your boss tells you to find the best deal in cellular phone service. Economy service is $19.95 per month plus 31¢ per minute of airtime. Silver service is $40.95 per month plus 16¢ per minute. Gold service is $80.95 per month with unlimited airtime. Define variables. Write equations. Make tables and graphs. Find slopes and points of intersection. For each plan, how much airtime will $100 buy? For what range of airtime is each plan cheapest?

6 After reading Chaucer's "Prologue" to *The Canterbury Tales*. Select two characters you find intriguing from the "Prologue," and create a written dialog between them. Stress both the differences and commonalties so that the dialog reveals two distinct personalities.

7 Which of these substances is found in every living cell?
A. protein B. chlorophyll C. cellulose D. starch E. hemoglobin

8 Identify one controversial domestic issue that has divided the American people and explain the historical background, points of view of those who supported and opposed this issue and government action that was taken to address this issue.

9 What are the five vital signs:
(A) skin color, pulse, blood pressure, temperature, respiration
(B) bleeding, pulse, temperature, location of injury, level of responsiveness
(C) temperature, pulse, blood pressure, respiration, level of responsiveness
(D) location of injury, pulse, blood pressure, respiration, level of responsiveness

10 After examining and comprehending the Bill of Rights, rewrite an amendment or create a new one for the 21st century.

ABBADCACBD

Successful Practices NETWORK

Successful Practices Bulletin #109

Key Terms Used on Essay Tests

As a follow-up to last month's bulletin on test-taking strategies, here are some key terms to help students understand how to answer essay questions.

- **Comment** – Write a personal opinion about the subject.
- **Compare** – Look for qualities or characteristics that resemble each other.
- **Contrast** – Emphasize the differences between things.
- **Criticize** – Judge the merit or truth of the information presented. Provide evidence and/or analysis. Pose questions.
- **Define** – Give a concise and clear meaning of a term or concept.
- **Describe** – Recount, characterize, sketch, or relate in sequence or story form.
- **Diagram** – Provide a drawing, chart, or plan. As needed, give a brief explanation or description of the diagram.
- **Discuss** – Examine, analyze, and discuss the material/problem being presented. Give a complete detailed answer.
- **Differentiate or distinguish** – Point out the peculiarities that enable the reader to tell two or more things apart. These things are usually in the same category. If they are in different categories, the terms "compare" and "contrast" would be used instead.
- **Enumerate** – List and give supporting points. Evaluate and appraise the information/problem being presented, stressing both advantages and limitations.
- **Evaluate** – Appraise the problem carefully, citing both advantages and limitations. Emphasize and try to analyze causes.
- **Explain** – Clarify and interpret the information presented as the initial answer. Give reasons for differences of opinion, and try to analyze causes.
- **Give an account of** – Provide a brief narrative that summarizes the subject.
- **Illustrate** – Clarify by giving concrete examples and personal understanding.

- **Justify** – State why something is so. Give supporting evidence as part of the statement or conclusion.

- **List** – Draw out a list of words, sentences, or comments. The term “enumerate” means the same.

- **Outline** – List the main features or general principles of a subject, omitting minor details and emphasizing structure and relationship. In other words, give a general summary.

- **Prove** –Show by argument, evidence, or logic that something is true. This term has a more specific meaning in math and physics.

- **Relate** – Show the connection between things. Point out how one thing causes or is like something else.

- **Review** – Make a survey or summary to examine the subject critically.

- **State** – Fully describe the main points in precise terms. Omit any detail or examples.

- **Summarize** – Give a brief, concise description of the main ideas.

- **Trace** – Follow the progress or history of the subject in chronological order.

Source: www.nlight.com/Success/Study/7tests.html

Rigor and Relevance in Curriculum/Instruction/Assessment Checklist

Assessments

Quadrant A – Acquisition (Low Rigor/Low Relevance)

❒ Yes ❒ No use verbs synonymous with recall and understanding

❒ Yes ❒ No call for explanation of knowledge or skill, but not application

❒ Yes ❒ No are multiple choice, true/false, or short answer

❒ Yes ❒ No require a single standard answer

Quadrant B – Application (Low Rigor/High Relevance)

❒ Yes ❒ No use verbs synonymous with recall, understanding, or application

❒ Yes ❒ No call for the application of knowledge to real-world problems

❒ Yes ❒ No are performance-based

❒ Yes ❒ No follow a routine or set procedure

Quadrant C – Assimilation (High Rigor/Low Relevance)

❒ Yes ❒ No use verbs synonymous with analysis, synthesis, or evaluation

❒ Yes ❒ No call for the explanation of knowledge or skill, but not real-world application

❒ Yes ❒ No include multi-step problems

❒ Yes ❒ No are essays, presentations, or portfolios

Quadrant D – Adaptation (High Rigor/High Relevance)

❒ Yes ❒ No use verbs synonymous with analysis, synthesis, or evaluation

❒ Yes ❒ No call for unique solutions in applying knowledge to real-world problems

❒ Yes ❒ No are performance-based

❒ Yes ❒ No include multi-step problems