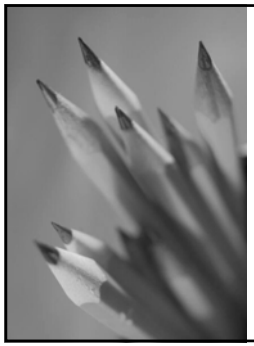


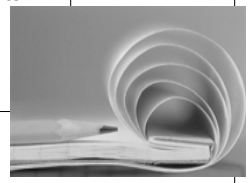
Rigor, Relevance and Reading for High Performing Students

~Peter Pappas

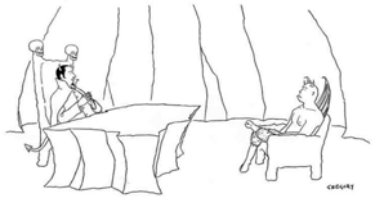
Model Schools Conference
June 2005

Agenda

1. Teaching in Info Age
2. Rigor and Relevance
   - As a framework for using the strategies
3. The Strategies:
   - Defining
   - Summarizing
   - Comparing



Put this workshop to the test.
Will it be rigorous and relevant to your teaching?



"I need someone well versed in the art of torture – do you know PowerPoint?"

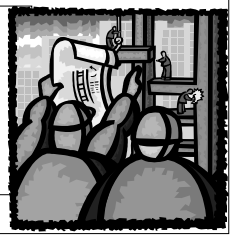
High school social studies teacher

- World History
- US History
- Economics
- Sociology
- Media Studies

- Special Ed Inclusion
- AP US History
- AP US Government
- AP Comparative Gov't

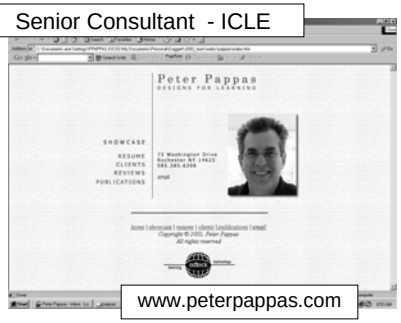
Program designer and administrator

- K-12 Social Studies Coordinator
- Program Director: At-Risk Students
- Assistant Superintendent for Instruction



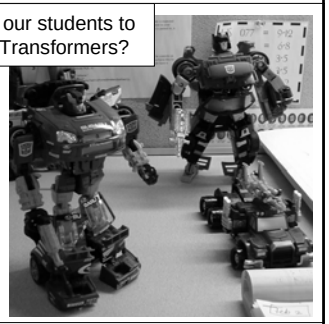
- Taught at two of Newsweek's 100 Best High Schools in America
- Panelist and Mentor, National Endowment for the Humanities "Younger Scholars" Program
- Reviewer, "National Programs of Excellence" National Council for the Social Studies

Senior Consultant - ICLE



www.peterpappas.com

Do we ask our students to work with Transformers?



Who is doing the thinking in the classroom?
Example: "Compare and contrast …"

- Do they go back and **sort through the data** and generate their own scheme?
- By the time the student gets the task, **is the messy work of comparing long gone**?
- Is the dynamic act of comparing **reduced to a few fixed models that they are asked to imitate**?
- Is it **really an exercise in memorizing and repeating** the appropriate (complex) information that others have told the student?

"I could memorize very easily, and became valedictorian.

But I was embarrassed that I understood much less than some other students who cared less about grades.

I felt that my brain was a way station for material going in one ear and (after the test) out the other."

~ HS Student quoted in Wiggins and McTighe
Understanding by Design

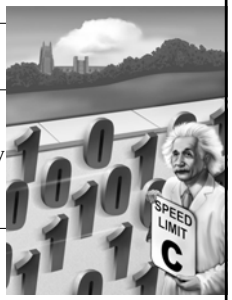
Goal – students who can function in an academic or real-world setting that is unpredictable and vital

- **Master the forms and conventions** of their chosen academic disciplines and professions
- Learn to read and write like a **historian, scientist, engineer, mathematician**, **artist, linguist, writer, or musician**

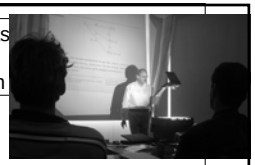
Remember that reading, writing, and thinking can be a social situations that **call for collaboration**

Teaching in the information age

New technologies have put **students in charge of the information** they access, store, analyze and share.

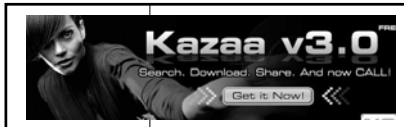


But schools function as if they still controlled the flow of information



Student view what they want, when they want to

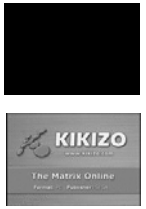
Follow elaborate, multilevel plotlines, teeming casts of characters and open-ended narrative structures



Access, catalogue and share the music they want to listen to

Post blogs, podcasts, online photo galleries

Interact and collaborate online in elaborate databases



Gaming:

Advance to a new level. Deciphers a new puzzle. Problem-solve. Differentiated. Immediate feedback

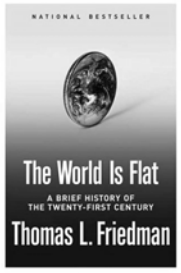
Most information comes to students outside the context of school.

They are free to select the information they agree with and avoid most everything else.

Schools should recognize the realities of the information rich world our students live in

- Offer students skills and context to make some sense of all of it
- Structure learning environments that let students use information to make decisions and solve problems

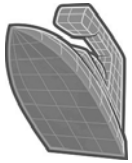
Offer equity for student who can't afford new media tools.



Intellectual work leaving the US

"Only 30 years ago, if you had a choice of being born a **B student in Boston or a genius in Bangalore**, you probably would have chosen Boston, because a genius in Beijing could not really take advantage of his or her talent.

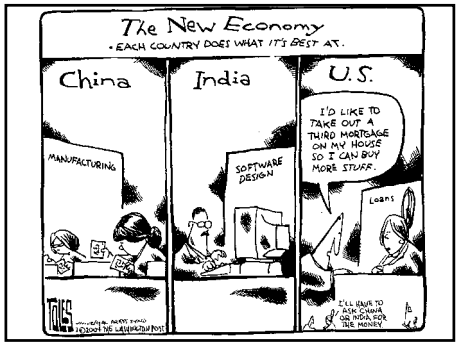
Not anymore. Not when the world is flat, and **anyone with smarts, access to Google and a cheap wireless laptop can join the innovation fray**."



"**Any activity where we can digitize** and decompose the value chain, and move the work around, **will get moved around**.

People in advanced countries have to **find ways** to move up the value chain, to **have special skills** that **create superior products** for which they can charge extra."

THE WORLD IS FLAT
A Brief History of the Twenty-First Century.
By Thomas L. Friedman.



We put students at the center of their own learning

- Willingness to **explore**
- Make **fruitful selection** of appropriate strategies
- Be able to **think critically** about the progress of their work
- **Trade a weak explanations for stronger ones**
- Be able to **correct paths of investigation** that aren't working
- **Turn a strategies back on themselves** to see its limitations

"Analyze the impact of globalization since the end of the Cold War."

Is it really "Tell me what I've told you about globalization?"

Are asking students to decide :

1. How will you **define** the term *globalization*?
2. **Which data, events or trends** will you choose?
3. **Which strategies** will you use?
4. From which **perspectives** will you consider them?

Who makes these decisions – teacher or student?

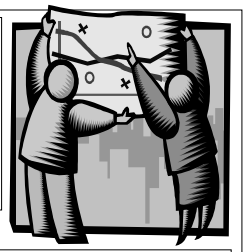
"Analyze the impact of globalization since the end of the Cold War."

Choose a perspective, or point of view:
- Cultural
- Religious
- Political
- Technological
- Economic
- Linguistic

How would you structure the task for your students?

Which aspects would be left for them to decide?
- Source material
- Perspective
- Strategy

Rigor, Relevance, and Learning Strategies



Students must take on the challenge of intellectual work - rather than just look for the right answer.

Bloom's different levels of rigor

Evaluation: appraise, defend, predict

Synthesis: compose, design, develop

Analysis: compare, contrast, categorize

Basic Skills

Application: demonstrate, illustrate, solve

Comprehension: describe, explain

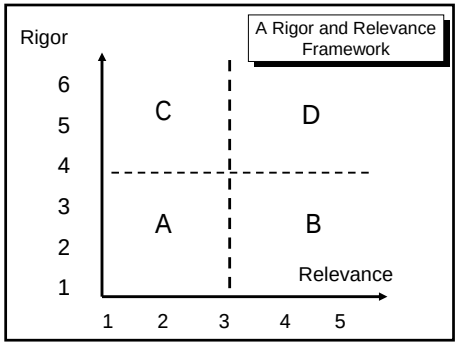
Knowledge: memorize, name, recognize, recall

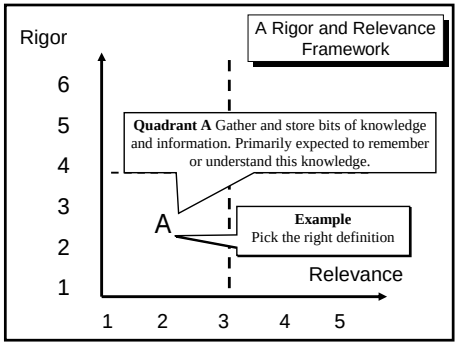
Make it relevant with real-world application

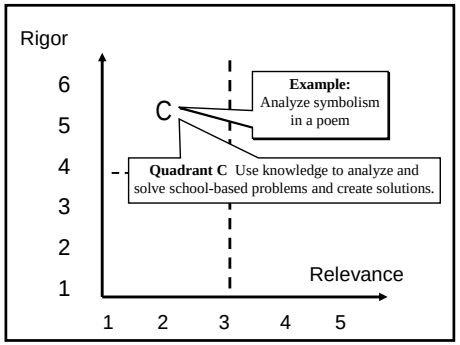
Using skills and knowledge in school

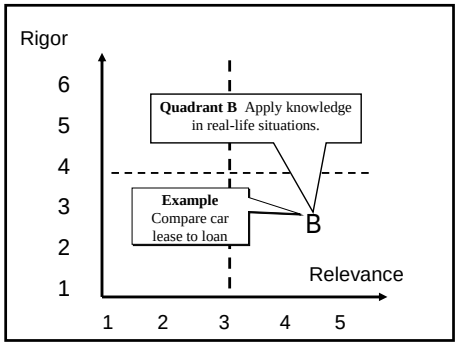
Using skills and knowledge for myself in the real world

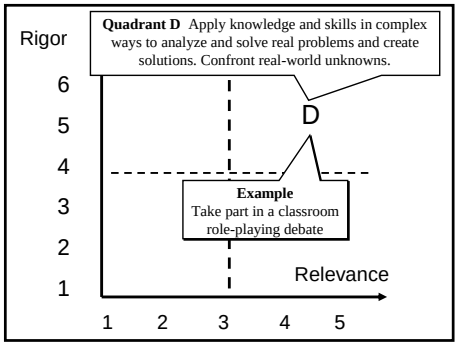
1 2 3 4 5

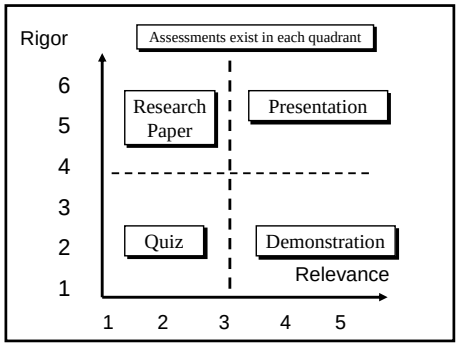


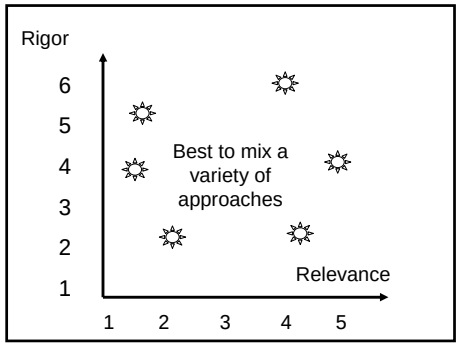


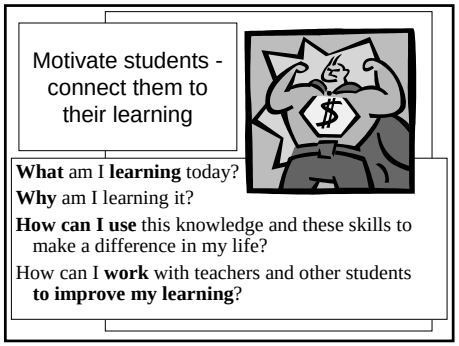


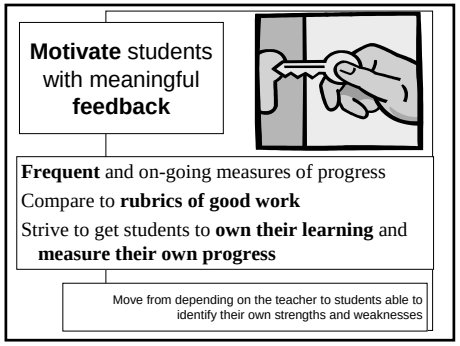


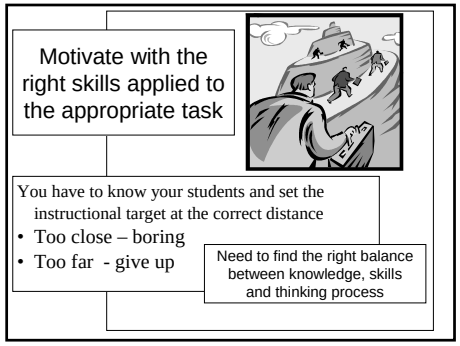


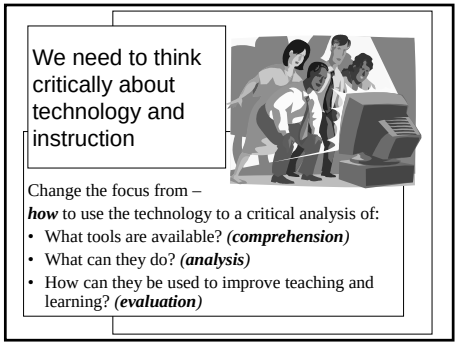

Rigor
Assessments exist in each quadrant
6
5
4
3
2
1
Research Paper
Presentation
Quiz
Demonstration
Relevance
1 2 3 4 5

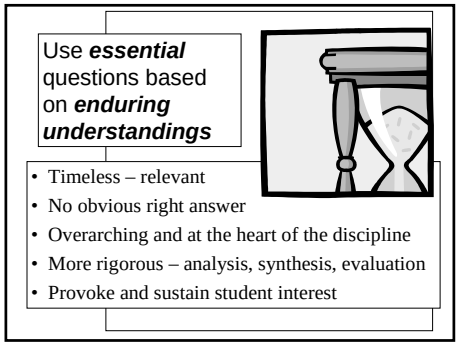

Rigor
6
5
4
3
2
1
Best to mix a variety of approaches
Relevance
1 2 3 4 5

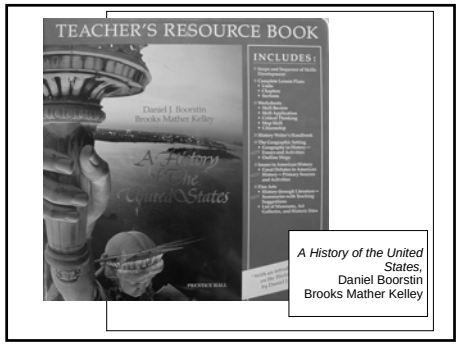

Motivate students - connect them to their learning
What am I learning today?
Why am I learning it?
How can I use this knowledge and these skills to make a difference in my life?
How can I work with teachers and other students to improve my learning?

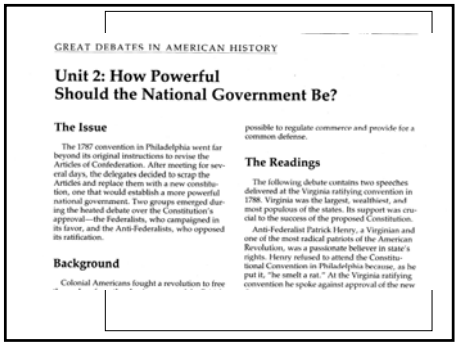

Motivate students with meaningful feedback
Frequent and on-going measures of progress
Compare to rubrics of good work
Strive to get students to own their learning and measure their own progress
Move from depending on the teacher to students able to identify their own strengths and weaknesses


Motivate with the right skills applied to the appropriate task
You have to know your students and set the instructional target at the correct distance
Too close – boring
Too far - give up
Need to find the right balance between knowledge, skills and thinking process


We need to think critically about technology and instruction
Change the focus from –
how to use the technology to a critical analysis of:
What tools are available? (comprehension)
What can they do? (analysis)
How can they be used to improve teaching and learning? (evaluation)


Use essential questions based on enduring understandings
Timeless – relevant
No obvious right answer
Overarching and at the heart of the discipline
More rigorous – analysis, synthesis, evaluation
Provoke and sustain student interest


TEACHER'S RESOURCE BOOK
INCLUDES:
A History of the United States,
Daniel Boorstin
Brooks Mather Kelley


GREAT DEBATES IN AMERICAN HISTORY
Unit 2: How Powerful Should the National Government Be?
The Issue
The Readings
Background

The Strategies

- Define: negotiating meaning
- Summarize: synthesis and judgment
- Compare: assessing similarities and differences

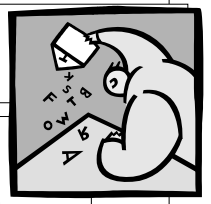
Good learners can manage their own learning and apply an arsenal of learning strategies in an effective manner

Critical Strategies for Academic Thinking and Writing by Mike Rose, Malcolm Kiniry

Strategy #1: Defining: *negotiating meaning*

"No let me explain. If this thing had been thrown overboard, it would be jetsam. But the way it happened, it's flotsam."

Think about defining



- **Not a passive or mechanical act** … copy and memorize the dictionary definition
- **Continuous process** crucial to receptive reading, persuasive writing and critical thinking

Most definitions contain two main components

1. The **core idea** of the new term - its main idea, or category
2. **Critical features**, distinguishing details or specific examples that clarify the broader, more general core idea.

"Acculturation ... is a social interaction … in which a subordinate groups adjusts its behavior to conform to that of the dominant group."

To define something is to look at it more clearly

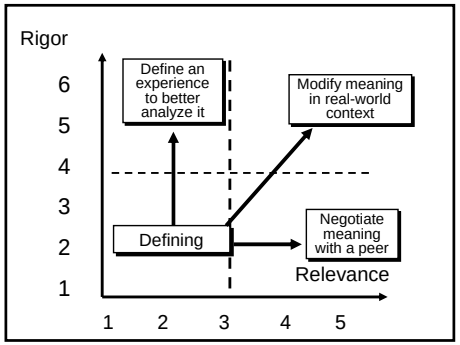
- "Well-defined" means we can **perceive its boundaries** again a background
- Rarely a matter of seeing things in isolation, but rather **recognizing relationships**
- Definitions are **flexible** – expand, contract and **shift in emphasis** depending on context and perspective

Least effective ways to study vocabulary

- **"Look and remember"** technique - students typically stare at the term and definition,
- **"Rote verbal rehearsal"** - saying it over and over again, usually in the exact language and format in which the definition originally came.

What does work?

- New terms must be defined using **language** and examples that already are **familiar to students**
- It needs to be **processed by the student** to become well "networked" and a permanent part of memory.



How to Strengthen Defining Skills

Build associations with prior knowledge.
Connect students with what they already know .

- Have you ever heard the term ***equidistant***?
- What words do you see in ***equidistant***?
- What do you associate with ***equidistant***?

Let students generate preliminary definitions

Pre - reading:
Let students work together to compare preliminary definitions.

- Students write their own definition
- Compare to peer definition
- Similarities
- Differences

Use a visual organizer to map out and preview text

Reading for Academic Success ~ Strong and Silver

Use word parts to negotiate meaning for these "new terms"

Adultescent Bangalored

Adultescent , n., a 24-year old too busy playing Halo 2 on his Xbox or watching SpongeBob at his parents' house to think about growing up**.**

Bangalored, adj., (of a corporation, project or employment) having been relocated to India, esp. when technological; having lost business or employment due to such a relocation.

List, Group, Label *Example "Revolution"*

1. List all the words they can think of related to the subject
2. Group the words that you have listed by looking for word that have something in common
3. Once grouped, decide on label for each group

Use a variety of skills - prior knowledge, identifying, listing
Use words in multiple contexts allow to be creative.
Group work exposes students to thinking of others

Words, Words, Words ~ Allen

Students internalize new vocabulary when they **explore** the words –

- Think about terms, examine and reexamine in new ways.
- Apply their understanding - opposites and analogies
- Create multiple formats for which students can elaborate on the meaning of new terms.

Increase rigor and relevance with non-linguistic definitions – Charades, role play, tableau

Let them design symbols to represent terms

How could they graphically represent these terms?
Symbiosis
Federalism
Asymmetry

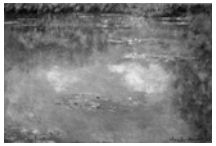
Increase rigor and relevance with a personal vocabulary notebook

Term:
"My" definition:
Dictionary Definition:
Comparison:

Reading for Academic Success ~ Strong and Silver

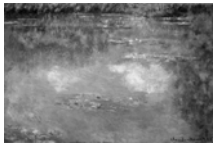
Term:	*Segregation*
"My" definition:	*A time when African-Americans used to have separate schools*
Dictionary Definition:	*The policy or practice of forcing racial groups to live apart from each other*
Comparison:	*I thought of segregate more as a time period, but the dictionary calls it a practice or policy*

Work with partner to define impressionist style

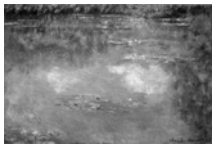


Term:	Impressionist style
"My" definition:	Your definition here
Dictionary Definition:	Captures the atmosphere of an instantaneous moment in time. Characterized by concentration on the general impression produced by a scene and the use of unmixed primary colors and small strokes to simulate actual reflected light.
Comparison:	

Summarize the main elements of the *Impressionist Style*

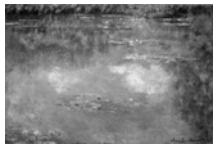


Develop a Venn diagram comparing these paintings



Move rigor to evaluation

There's a fire in the museum. You have time to save one painting. Which do you save? Why?

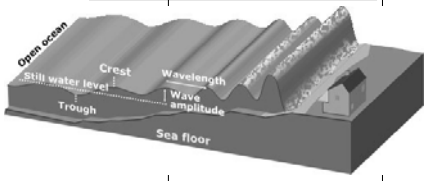


Consider the use of familiar terms in a specialized context

- Identify **key words** in passage
- Ask students to read the passage with **special attention to the context** in which the term is used
- Ask students to discuss **how the author has used the term is** this specific context
- Ask them to **refine** their **preliminary definition** of the word

Refining meaning in an academic discipline … "Model"

Model of how a tsunami develops



"This **model** before us was a single molecule of hemoglobin of horse in its oxygen-carrying state. It was surprisingly large… within a cubical frame about four feet long.

He picked up a pointer to trace the twisting, swooping paths of the four chains in the **model**.

The red cords and white ones, he said, were **not the real structure but only aids to the eye**."

— Horace Freeland Judson, *The Eighth Day of Creation: Makers of the Revolution in Biology*

"Why does the market **model** still attract academic economists?

First, … it **provides them with familiar concepts** and assumptions to bring to bear on contemporary issues.

Second, the simplifying assumptions of the market **model provide a base** from which mathematical **models** can be constructed and refined.

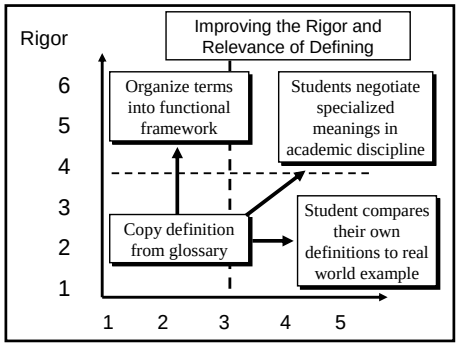
— Michael H. Best and William E. Connolly, *The Politicized Economy*

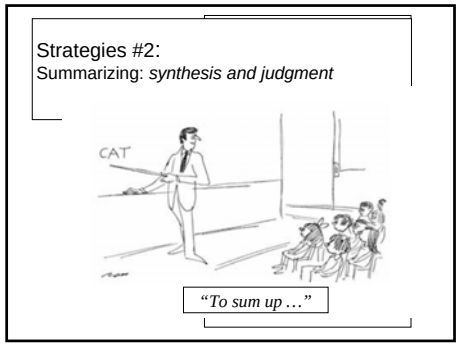
How would you re-define "Model" in an academic context?

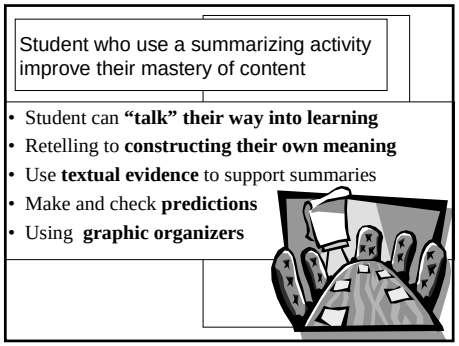
"Finalize" the mastery by asking students to make connections to the new term

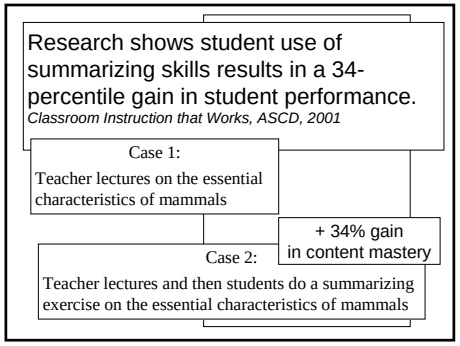
1. How the term is **related to previous subject matter** they have learned
2. Identify **something from their personal life** associated with the term
3. How the term is **used in real-life situations**
4. How their **understanding** of the term **has evolved**

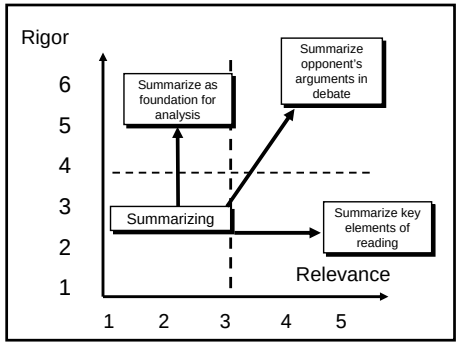
An essential part of this elaboration process is having the students explain the connection.

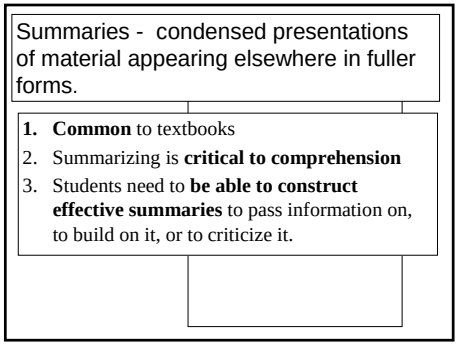

Rigor
Improving the Rigor and Relevance of Defining
Organize terms into functional framework
Students negotiate specialized meanings in academic discipline
Copy definition from glossary
Student compares their own definitions to real world example
6
5
4
3
2
1
1 2 3 4 5

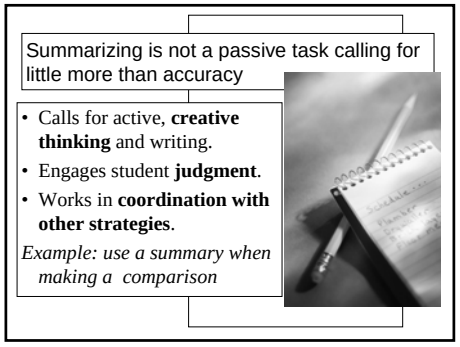

Strategies #2:
Summarizing: synthesis and judgment
CAT
"To sum up …"

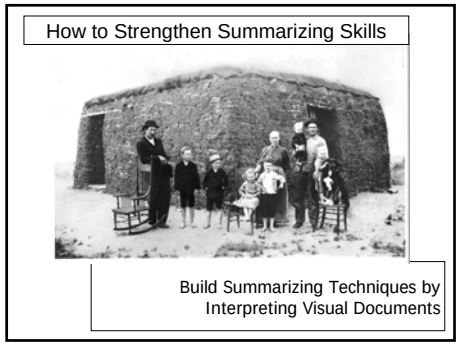

Student who use a summarizing activity improve their mastery of content
• Student can "talk" their way into learning
• Retelling to constructing their own meaning
• Use textual evidence to support summaries
• Make and check predictions
• Using graphic organizers

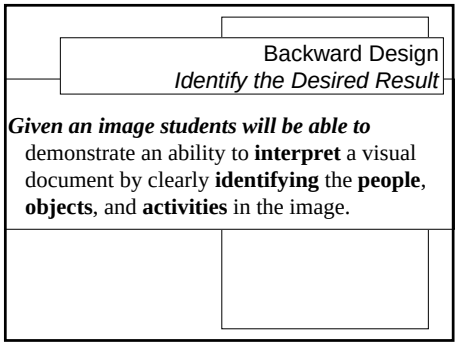

Research shows student use of summarizing skills results in a 34-percentile gain in student performance.
Classroom Instruction that Works, ASCD, 2001
Case 1:
Teacher lectures on the essential characteristics of mammals
+ 34% gain in content mastery
Case 2:
Teacher lectures and then students do a summarizing exercise on the essential characteristics of mammals


Rigor
Summarize as foundation for analysis
Summarize opponent's arguments in debate
Summarizing
Summarize key elements of reading
Relevance
6
5
4
3
2
1
1 2 3 4 5


Summaries - condensed presentations of material appearing elsewhere in fuller forms.
1. Common to textbooks
2. Summarizing is critical to comprehension
3. Students need to be able to construct effective summaries to pass information on, to build on it, or to criticize it.


Summarizing is not a passive task calling for little more than accuracy
• Calls for active, creative thinking and writing.
• Engages student judgment.
• Works in coordination with other strategies.
Example: use a summary when making a comparison


How to Strengthen Summarizing Skills
Build Summarizing Techniques by Interpreting Visual Documents


Backward Design
Identify the Desired Result
Given an image students will be able to demonstrate an ability to interpret a visual document by clearly identifying the people, objects, and activities in the image.

Start with Observation: Inventory the Image

- Study the image for 2 minutes. Form an overall impression of the image and then examine individual items.
- Next, divide the image into sections and study each to see what new details become visible.
- List people, objects, and activities in the image.

Increase rigor with inference - Based on what you have observed, list three things you might infer from this image.

What questions does this image raise?
Where could you find answers to them?

Quickly gather and organize student observations with "post-its"

Differentiate the objective for different ability levels

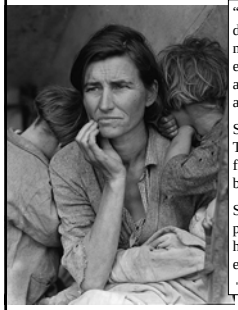
Using the visual document supplied by the teacher

- Identify - **comprehension**
- Classify - **analysis**
- Draw your version - **synthesis**
- Judge based on criteria - **evaluation**

Different levels of Bloom's rigor

Make summarizing more rigorous and relevant with Evaluation

Which photo would you use?
What's in the images? What's left out?



"I approached the hungry and desperate mother, as if drawn by a magnet. I do not remember how I explained my presence … she asked me no questions. … I did not ask her name.

She told me that she was thirty-two. They had been living on vegetables from the surrounding fields, and birds that the children killed.

She seemed to know that my pictures might help her, and so she helped me. There was a sort of equality about it." Dorothea Lange

"Migrant Mother" 1936 Nipomo, California

Teach and model *active listening* and *reading* as foundation for summarizing

Getting the **spoken message** right

- *"So what your saying is…"*
- *"So what I'm hearing is …"*

Leads to getting the **written message** right

- *"So what the author is saying is ..."*
- *"Do you agree with the author's point that …"*

The teacher models strategies then transfers responsibility to students working in small groups. Students learn to independently and flexibly apply the strategies on their own.

- **Questioning** poses questions based on a portion of a text the group has read, either aloud or silently.
- **Clarifying** resolves confusions about words, phrases, or concepts, drawing on the text when possible.
- **Summarizing** sums up the content, identifying the gist of what has been read and discussed.
- **Predicting** suggests what will next happen in or be learned next from the text.

Text-Based Collaborative Learning

Don't just discuss a topic - interact with each other around a text.

- Small groups **similar to elementary literature circles**.
- Can use **differentiated source materials**
- Can be **used in any subject area** –work together on the same or a **set of similar problems**
- **Learning is decentralized** - the **meaning** drawn from text(s) is **negotiated through a group process**.

Ask: "What's going on here? What do you see that makes you think so?"

Open class with a "Quick Write" – reinforce learning and transition to a new day

- As students enter the room they see a **prompt** that requires them to revisit a **previously learned concept**.

(While teacher handles routine matters that often delay the beginning of instruction)

- Students are reminded to **write briefly** but **in complete sentences**.
- After 5 minutes, selected students **read their answers aloud** to the class. Students are instructed to read exactly what they have written.
- This requires **quick organization of thoughts** and prevents rambling oral replies.

Effective Prompts for Quick Writes in Science and Mathematics
Jo Cleland, Arizona State University West

Quick Write is followed by discussion

- Teachers **call on volunteers**, drawing out divergent viewpoint:
  - "Does anyone have a different idea?"
  - "Did anyone have another way of thinking about it?"
  - "You look puzzled. Do you have a different idea?"
- Stimulate students' **higher-order thinking** about a **concept from the previous day**
- Class is now **ready to link** this newly anchored understanding to the **content of the upcoming class**.

"What is the most interesting thing you learned during the unit we just finished?"

- Communicate meaningful examples to peers
  - Learn to organize their thoughts
  - Clarify misunderstandings
  - Apply and build content-specific vocabulary
- Feedback for the teacher
  - Students reasoning / misperceptions become apparent
  - Modify pace as needed

Primacy – recency effect: students remember the first and last elements of the lesson

- **Summarize throughout the lesson**
- At the **opening to activate prior knowledge** and prime their brains to pay attention
- Reserve time at the end of class for students to **summarize and reflect** on the lesson
- "Chunk" longer lessons in 15 minute sections
  - **Summarize sections** to "file learning" in long term memory
  - **Interim summaries** build understanding of full lesson

Remember to teach students to evaluate their own summaries

- Are the ideas in the **right sequence** / organization?
- Is it too **narrow or broad**?
- Would **someone else** reading my summary **understand** the subject?
- Does it convey the information **accurately and fairly**?
- Did my summary **suit my purpose**?
- Did I use **my own words and style**?

Writing an effective summary

- Recognizing **how a piece of writing is organized** helps to summarize it
- Calls for the ability to see **connections between general, more abstract points** and the specific points supporting and complicating them.
- Summaries can **vary in length according to purpose** - gaining or losing detail at each level of abstraction.

Students may need to first map out the main points in a rough outline so that they can see the relationships

Critical Strategies for Academic Thinking and Writing by Mike Rose, Malcolm Kiniry

Reinforce that all summaries involve interpretive decisions.

- Should always attempt to **represent the original fairly.**
- Can **expand or contract to suit a writer's purpose** - details can drop from sight.
- To make **use of apt quotations** and to edit for compression.

Student should stay focused on the purpose of their summary

On one side, beloved by schools of education, are the century-old ideas of progressive education, now called "constructivism."

Associated with this philosophy are such approaches as whole language, fuzzy math, and invented spelling, as well as a disdain for phonics and grammar, an insistence that there are no right answers (just different ways to solve problems), and an emphasis on students' self-esteem.…

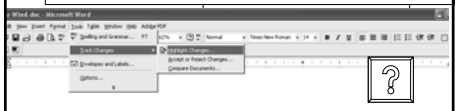
By diminishing the authority of the teacher, constructivist methods often create discipline problems.

Diane Ravitch Wall Street Journal May 12, 2005

On the other side are those who believe that learning depends on both highly skilled teachers and student effort; that students need self-discipline more than self-esteem; that accuracy is important; that, in many cases there truly are right answers and wrong answers (the Civil War was not caused by Reconstruction); and that instructional methods should be chosen because they are effective, not just because they fit one's philosophical values.

Diane Ravitch Wall Street Journal May 12, 2005

Model summarizing skills with technology

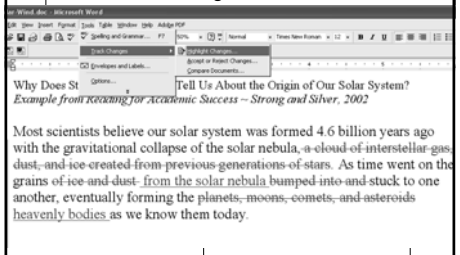


Why Does Studying Solar Wind Tell Us About the Origin of Our Solar System?
Example from Reading for Academic Success -- Strong and Silver, 2002

Most scientists believe our solar system was formed 4.6 billion years ago with the gravitational collapse of the solar nebula, a cloud of interstellar gas, dust, and ice created from previous generations of stars. As time went on the grains of ice and dust bumped into and stuck to one another, eventually forming the planets, moons, comets, and asteroids as we know them today.

Tools / Track Changes / Highlight Changes

Model summarizing skills with a *think aloud*

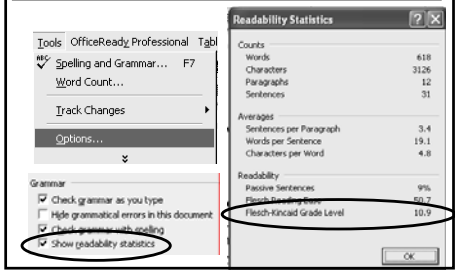


Why Does St Tell Us About the Origin of Our Solar System?
Example from Reading for Academic Success -- Strong and Silver, 2002

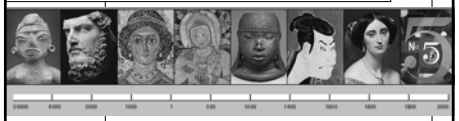
Most scientists believe our solar system was formed 4.6 billion years ago with the gravitational collapse of the solar nebula, ~~a cloud of interstellar gas, dust, and ice created from previous generations of stars.~~ As time went on the grains ~~of ice and dust~~ from the solar nebula ~~bumped into and~~ stuck to one another, eventually forming the ~~planets, moons, comets, and asteroids~~ heavenly bodies as we know them today.

Tools / Track Changes / Highlight Changes

Add Reading Level to Spell Check
Tools / Options / Show readability statistics



Serializing: *establishing sequence*



We often ask students to order material sequentially or explain steps in a process

- Do we call for the **recollection** of course information in the **same form** students have read or listened to it?
- Do we reward **accuracy or critical thinking**?
- Are we simply **requesting a rehash** of course material?

The Greenwood High School library lending system:

- All publications classified as "Reserved" have a loan period of 2 days.
- For books (not including magazines) that are not on the reserved list, the loan period is 28 days for staff, and 14 days for students.
- For magazines that are not on the reserved list, the loan period is 7 days for everyone.
- Persons with any overdue items are not allowed to borrow anything.

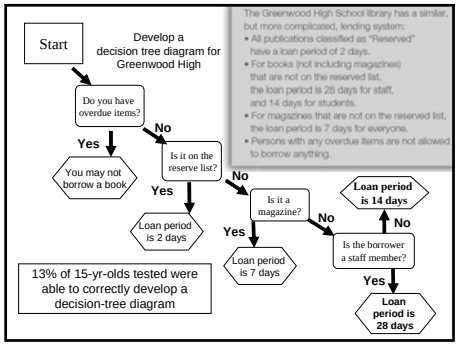
Question: You are a student at Greenwood High School, and you do not have any overdue items from the library. You want to borrow a book that is not on the reserved list. How long can you borrow the book for?

Answer: _____ days

Answer: 14 days

Correctly answered by 75% of 15-yr-olds tested

Program for International Studies (PISA) Assessment 2003

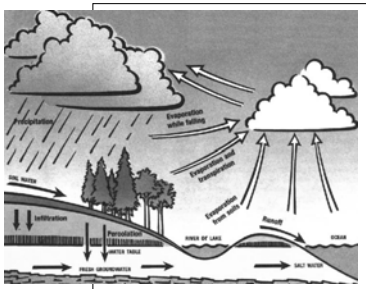


13% of 15-yr-olds tested were able to correctly develop a decision-tree diagram

Serializing can be designed to make students rethink the course material, with an eye for seeing new patterns and making new connections.

- More than a mechanical operation for giving back information.
- Vehicle for **independent thinking**.
- Make **interpretive judgments**, decisions about how items, events, or stages **relate to one another**,
- **Relative importance** and their **position** in an over-all **sequence**.

Critical Strategies for Academic Thinking and Writing by Mike Rose, Malcolm Kinzy



Hydrological cycle

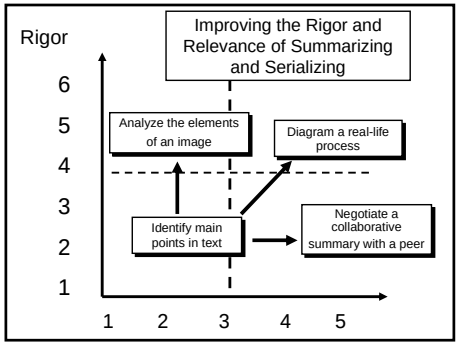
Serial strategies are helpful to convey a process or set of procedures, the flow of events, or the development of awareness over time.

- Serve to both **convey information and raise questions**.
- Can work as the **overarching strategy** for organizing writing in **coordination with other strategies**.
  - **Support a definition** by illustrating the shifting meanings of a particular word as it has changed over time
  - **Framework for a comparison** or classification
  - Structural **component of an argument**
- Can serve as the **prompt for a creative interpretation** of the content

Critical Strategies for Academic Thinking and Writing by Mike Rose, Malcolm Kiniry

Serializing is a chance to be creative

Vietnam Memorial



Strategies #3:
Comparing: *assessing similarities and differences*

The most powerful instructional strategy

"I wonder, sir, if you would indulge me in a rather unusual request?"

Mastery of comparison skills is critical to academic achievement

- Central construct in academia
- Critical to comprehension

We need to prepare students to **effectively address comparative tasks** and generate their own models.

- Comparative literature
- Comparative religion
- Comparative anatomy

- "Contrast the function of pores in humans and stomata in plants."
- "Compare the nautical elements in the fiction of London and Conrad"

Research shows student use of comparison skills results in a 45 - percentile gain in student performance.
Classroom Instruction that Works, ASCD, 2001

Case 1:
Teacher lectures on the essential characteristics of mammals

+ 45% gain in content mastery

Case 2:
Teacher lectures and then students do exercise comparing the essential characteristics of mammals to birds

To enhance students' understanding and ability to use knowledge

1. Present students with **explicit guidance** in **identifying similarities and differences**.
2. Present students with **highly structured tasks** (items and characteristics.)
3. Teacher-directed activities yield more **specific conclusions** by students.
4. They can lead to **rich discussion and inquiry** by students to explore the comparison.

Does this task require higher-order thinking? "Compare and contrast the …

Will students be doing the real work?

- Will they **sort through original material** to draw their own conclusion?
- Will they **define the analytic approach**?
- Is this a **"check-for-the-correct-answer"** question?
- Will they **repeat the information** as it was organized and presented in their textbook or by their teacher?

What's the point of the comparison? What do they learn?

Students develop their own models of comparison

1. Ask students to **independently** identify similarities and differences.
2. Student-directed yield more **divergent conclusions** by students.
3. Can include some combination of **selecting both the items and / or characteristics**.

A more rigorous application of summarizing skills

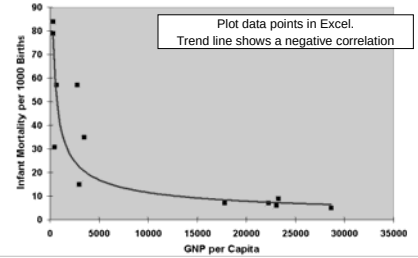
Quantitative comparison in a real world problem

Economics

- Your team will **assist World Bank** in the analysis global development projects
- Focus on the **statistical** and **quantitative** measures
- **Compare**, contrast and assess the **performance** of various **nations** around the world

Hypothesis
Literature review
Data
Conclusions
Research assessment
Work cited

Wealth and Infant Mortality



Plot data points in Excel.
Trend line shows a negative correlation

Move from Comparing to Classifying

1. **Comparing** is the process of **identifying similarities and differences** between or among things or ideas (technically contrasting is looking for differences.)
2. **Classifying** is the process of **grouping thing** that are **alike into categories** on the basis of the **characteristics**

Comparison depends on classification.
The student may not be aware of the connection, because the teacher did the classifying in advance, leaving only the comparing for the student.

Classification from two perspectives

- We typically ask students to **take someone else's classification system** and thoughtfully apply it.
  - This isn't difficult when the system itself is easy to grasp.
  - But when the system is complex, such assignments put pressure on students' abilities to read, interpret, and explain.
- We rarely **ask students to generate a classification system of their own**. Creating categories gives them a chance to assert their intellectual independence.
  - Of what use is the classification system?
  - What does it enable us to do or see?
  - What is gained by using it?

A very rigorous and relevant assignment: a student-directed classifying exercise

1. **What** do I want to classify?
2. What **things are alike** that I can put into a group?
3. **How** are these things alike?
4. What **other groups** can I make? How are the things in that group alike?
5. **Does everything fit** into a group now?
6. Would it be better to **split up any of the groups** or put any groups **together**?

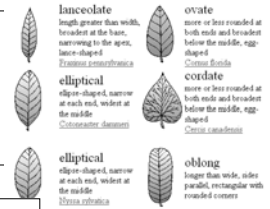
Look at leaves … how would you classify them?

Student Designed System

Veins are parallel.
Stem is hollow – *Grass*
Stem is not hollow
Stem is round – *Rush*
Stem has edges – *Sedge*

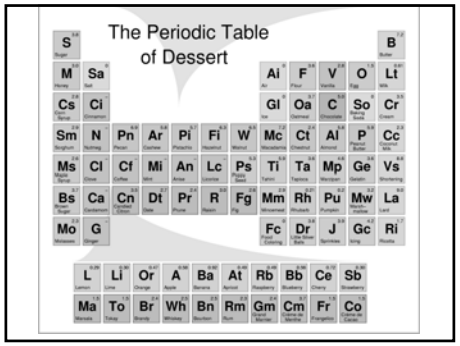
Veins are not parallel.
Leaves are compound)
Three leaflets - *Poison Ivy*
Four or more leaflets
Leaves are not compound

Compare their classification system to the real thing



Veins are parallel.
Stem is hollow – *Grass*
Stem is not hollow
Stem is round – *Rush*
Stem has edges – *Sedge*

Design a periodic table of buttons



Increase rigor of classification
– add evaluation and decision-making

Decision	Criteria for evaluation		
	Criteria 1	Criteria 2	Criteria 3
Option 1			
Option 2			
Option 3			

Make it relevant - Choose a college	Criteria for evaluating schools		
	Cost	Size	Location
College choice 1			
College choice 2			
College choice 3			

What criteria will you use?
Are they of equal importance?
How can your evaluations be quantified?
How can you use your analysis to justify a decision?

Quantify classification with a content analysis

Sample Research Question: ***What types of stories are prevalent in the evening news?***

- How will you **categorize** your observations?
- How will you **organize** your team to gather and evaluate the information?
- How will you **record and present** your findings?

How will you quantify your observations?

- Time the **length** of news stories?
- Record the **frequency** of certain categories you develop?
- Just an announcer talking vs live footage of the event?
- **Order** of presentation in news program?

A rigorous and relevant presentation plan for content analysis

1. The research question and **why your interested** in answering it.
2. The **rationale for your method** of observation and record keeping.
3. How you **gathered** and **evaluated** your data.
4. Graphic **representation** of the data.
5. The **answer** to the research question.
6. **What you learned** from the project.

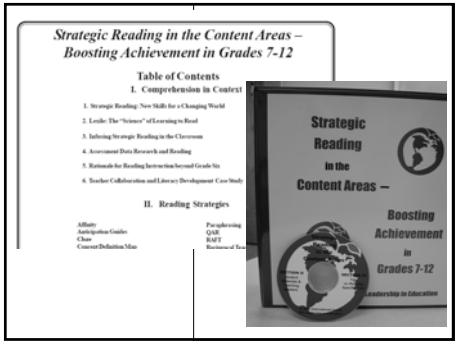
Summary Session: *Learning Strategies for Rigor, Relevance and Reading*

The art of observation

- What do you see – what do you call it? ***~ defining***
- How do you gather your observations? ***~ Summarizing***
- What patterns do you see? ***~ Comparison and classification***

We put students at the center of their own learning

- Willingness to **explore**
- Make **fruitful selection** of appropriate strategies
- Be able to **think critically** about the progress of their work
- **Trade a weak explanations for stronger ones**
- Be able to **correct paths of investigation** that aren't working
- **Turn a strategy back on itself** to see its limitations



Workshop References

Summarization in Any Subject
~ Rick Wormeli ASCD 2005

Words, Words, Words
~ Janet Allen Stenhouse 1999

Classroom Instruction that Works
~ Marzano, Pickering Pollock, ASCD 2001

Strategic Reading in the Content Areas
~ LaRocco, Sessoms ICLE 2003

Reading for Academic Success
~ Strong and Silver Corwin Press 2002

Critical Strategies for Academic Thinking and Writing
~ Mike Rose, Malcolm Kiniry Bedford 1998

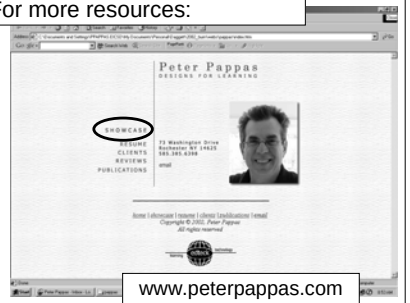
Do I Really Have to Teach Reading?
~ Cris Tovani Stenhouse 2004

Teaching Reading Strategies in Social Studies, Science and Math
~Laura Robb Scholastic 2003

Teaching Reading in the Content Areas
~ Jane Doty McRel 2003

Building Background Knowledge
~ Bob Marzano ASCD 2004

For more resources:



www.peterpappas.com

Content Reading Strategies Workshops:

Tailored to your training needs

June 2005
Winnfield Louisiana