

TriMind



Differentiating for Sternberg's
Thinking Styles

TriMind...

Is a strategy that you can use to differentiate according to Sternberg's three intelligences:

Creative Intelligence
Practical Intelligence
Analytical Intelligence

The materials in this folder will explain what each of these intelligences means, and will provide examples of how to teach students who are strong in each of these intelligences.

The idea behind TriMind is that you provide students with assignments, centered around the same learning goals, that are designed for their intelligence strengths. This way, students learn the material more efficiently and successfully.

TriMind



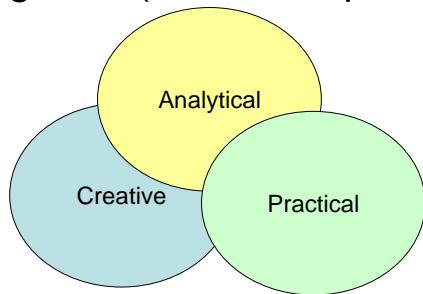
Differentiating for Sternberg's Thinking Styles

Three Minds are Better than One...

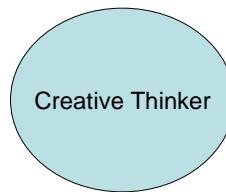
- TriMind is a planning tool to use in order to differentiate for different thinking styles.
- Robert Sternberg's Triarchic Theory of Intelligence (see included slides) posits that people have strengths in one or more types of intelligences: creative, analytical, or practical. **Successful intelligence** is the ability to recognize which strengths we possess, and to steer toward careers/activities which require these strengths.

Sternberg's Triarchic Theory of Intelligence

- Sternberg posits that there are three types of intelligence (see descriptions next page):



We all have some of each of these intelligences, but are usually stronger in one or two areas than in others. We should strive to develop as fully **each** of these intelligences in students, but also recognize where students' strengths lie and teach through those intelligences as often as possible, particularly when introducing new ideas.



Attracted to novelty, likes to produce knowledge or ideas instead of consuming them, sees the world from a unique perspective, often prefers working alone, does not like to be rushed toward completion of tasks, often works in "bursts," with long periods of incubation (which can look like unproductiveness) followed by quick, highly productive working periods, often has unique sense of humor.

Needs: support with setting deadlines and timelines, open-ended assignments with structure, assignments that allow for creative thinking and novel products, support working with other students, frequent outlets for creative thought, support with turning "ideas" into "reality."

CREATIVE

Find a new way to show _____.

Use unusual materials to explain

_____.

Use humor to show _____.

Explain (show) a new and better way to

_____.

Make connections between _____ and _____

to help us understand _____.

Become a _____ and use your “new”

perspectives to help us think about

_____.

Creative People Like...

- Designing new things
- Coming up with ideas
- Using my imagination
- Playing make-believe and pretend games
- Thinking of alternative solutions
- Noticing things people usually tend to ignore
- Thinking in pictures and images
- Inventing (new recipes, words, games)
- Supposing that things were different
- Thinking about what would have happened if certain aspects of the world were different
- Composing (new songs, melodies)
- Acting and role playing

Sternberg &
Grigorenko, 2000

Applications of the Concept of Successful Intelligence: Triarchic Teaching

For Creative Thinkers...

- **CREATE** (a poem, a sculpture, a new game, a new equation or example)
- **DESIGN** (a new approach to solving this problem, a new interpretation of this story, a new poetic form)

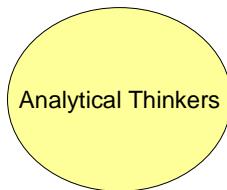
Applications of the Concept of Successful Intelligence: Triarchic Teaching

For Creative Thinkers

- **IMAGINE** (what it feels like to be a parabola, what communication would be like without grammar)
- **SUPPOSE** (worldwide temperatures increased 5 degrees on average..., there were no bell curve, Huck Finn had been named Helen Finn...)

Examples Across the Curriculum: Creative

- (a) *Create an alternative ending to the short story you just read that represents a different way things might have gone for the main characters in the story.*
- (b) *Invent a dialogue between an American tourist in Paris and a French man he encounters on the street from whom he is asking directions on how to get to the Rue Pigalle.*
- (c) *Discover the fundamental physical principle that underlies all of the following problems, each of which differs from the others in the "surface structure" of the problem but not in its "deep structure...."*
- (d) *Imagine if the government of China keeps evolving over the course of the next 20 years in much the same way it has been evolving. What do you believe the government of China will be like in 20 years?*
- (e) *Suppose that you were to design one additional instrument to be played in a symphony orchestra for future compositions. What might that instrument be like, and why?*
- (f) *Predict changes that are likely to occur in the vocabulary or grammar of spoken Spanish in the border areas of the Rio Grande over the next 100 years as a result of continuous interactions between Spanish and English speakers.*



Likes to break things into its parts, likes to know how things work, enjoys facts as well as ideas, likes to argue, attracted to logical thinking and logical ideas, likes to "think" as opposed to "doing," typically does well at school tasks, enjoys solving problems, can focus for long periods of time on a single task, may balk at "creative" assignments, likes to find one, right "answer," may see things as black and white

Needs: assignments that require thought as opposed to rote memorization, extended assignments that allow for focused, long-term study, "problems" to figure out, time to discuss ideas with others, support with how to present ideas in a non-argumentative way, support with listening to and accepting others' ideas, opportunities to struggle with open-ended questions that have no right/wrong answer

ANALYTICAL Thinkers like to...

Show the parts of _____ and how they work.

Explain why _____ works the way it does.

Diagram how _____ affects

Identify the key parts of

Present a step-by-step approach to

Analytical thinkers: “I Like...

- Analyzing characters when I’m reading or listening to a story
- Comparing and contrasting points of view
- Criticizing my own and others’ work
- Thinking clearly and analytically
- Evaluating my and others’ points of view
- Appealing to logic
- Judging my and others’ behavior
- Explaining difficult problems to others
- Solving Logical problems
- Making inferences and deriving conclusions
- Sorting and classifying
- Thinking about things

Sternberg &
Grigorenko, 2000

Applications of the Concept of Successful Intelligence: Triarchic Teaching

Analytical Thinkers

- **ANALYZE** (a literary plot, a theory in the sciences, a mathematical problem)
- **COMPARE AND CONTRAST** (two characters in a novel, two systems of government, the styles of two artists)

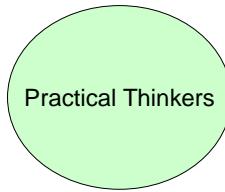
Applications of the Concept of Successful Intelligence: Triarchic Teaching

Analytical Thinkers

- **EVALUATE** (a poem, a cultural custom, a strategy in tennis)
- **EXPLAIN** (the use of grammar in a sentence, your interpretation of an historical event, the solution to a scientific problem)

Examples Across the Curriculum: Analytical

- (a) *Analyze* the development of the character of Heathcliff in *Wuthering Heights*.
- (b) *Critique* the design of the experiment (just gone over in class or in a reading) showing that certain plants grew better in dim light than in bright sunlight.
- (c) *Judge* the artistic merits of Roy Lichtenstein's "comic-book art," discussing its strengths as well as its weaknesses as fine art.
- (d) *Compare and contrast* the respective natures of the American Revolution and the French Revolution, pointing out ways both in which they were similar and those in which they were different.
- (e) *Evaluate* the validity of the following solution to a mathematical problem and discuss weaknesses in the solution, if there are any.
- Assess the strategy used by the winning player in the tennis match you just observed, stating what techniques she used in order to defeat her opponent.



Likes to see the real-world application of things, excellent at implementing plans, a "doer," highly effective in making things "happen," organized, less interested in ideas than in action, likes to move and do when learning, can be an excellent leader, may struggle with creativity-for-creativity's-sake assignments, may resist completing assignments for which they see no real-world purpose, can work very well in group situations, may not be traditionally "book smart"

Needs: Hands-on activities, assignments that are connected to the real world, opportunities to share ideas with practitioners and experts, experiences with more creative, open-ended activities, support with being patient with activities for which they see no immediate application, opportunities to lead (even when they are not the highest achievers, these students can be highly effective at leading groups and delegating responsibilities)

PRACTICAL Thinkers like to...

Demonstrate how someone uses _____ in their life or work.

Show how we could apply _____ to solve this real life problem _____.

Based on your own experience, explain how _____ can be used.

Here's a problem at school, _____.

Using your knowledge of _____, develop a plan to address the problem

Practical Thinkers Like...

- Taking things apart and fixing them
- Learning through hands on activities
- Making and maintaining friends
- Understanding and respecting others
- Putting into practice things I learned
- Resolving conflicts
- Advising my friends on their problems
- Convincing someone to do something
- Learning by interacting with others
- Applying my knowledge
- Working and being with others
- Adapting to new situations

Sternberg & Grigorenko, 2000

Applications of the Concept of
Successful Intelligence: Triarchic
Teaching

Practical Thinkers

- **USE** (a lesson that a literary character learned in *your* life, a mathematical lesson in the supermarket, a lesson learned on the playing field in everyday life)

Applications of the Concept of
Successful Intelligence: Triarchic
Teaching

Practical

- **APPLY** (a mathematical principle to your social life, what you learned in a foreign-language class to an interaction with a foreigner, a lesson from history to the present)

Examples Across the Curriculum: Practical

- (a) *Apply* the formula for computing compound interest to a problem people are likely to face when planning for retirement.
- (b) *Use* your knowledge of German to greet a new acquaintance in Berlin.
- (c) *Put into practice* what you have learned from teamwork in football to making a classroom team project succeed.
- (d) *Implement* a business plan you have written in a simulated business environment.
- (e) *Employ* the formula for distance, rate, and time, to compute a distance.
- (f) *Render practical* a proposed design for a new building that will not work in the aesthetic context of the surrounding buildings, all of which are at least 100 years old

Intelligence Type – Robert Sternberg

Which intelligence type would be drawn to each of the following assignments?

1. Analytic

2. Creative

3. Practical

Psychology: Freud's Dream Theory

1. Design an experiment to test a theory of dreaming
2. Compare Freud's theory of dreaming to Crick's theory.
3. What are the implications of Freud's theory of dreaming for your life?

Literature: Wuthering Heights

1. In what ways were Catherine Earnshaw and Daisy Miller similar?
2. Why were Catherine and Heathcliff cruel to each other? How do you see that play out in real life and what can be done about it?
3. Write an alternative ending to the novel uniting Catherine and Heathcliff in life.

Mathematics

1. Describe a story or case study illustrating how "catastrophe theory" might be applied to psychology
2. How is this mathematical proof flawed?
3. How is trigonometry applied to the construction of bridges?

Adapted from:

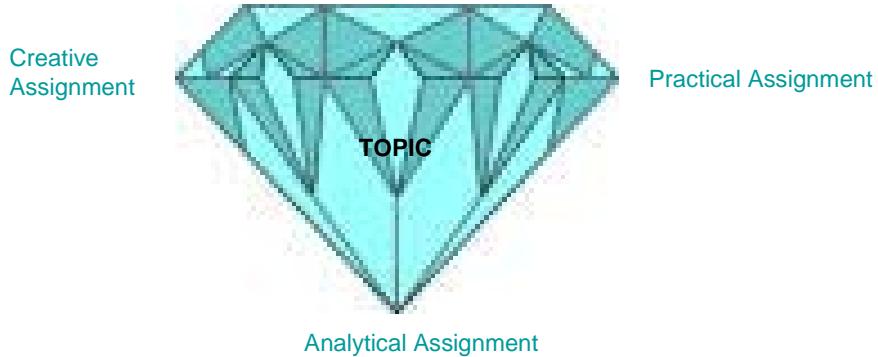
Sternberg, R.J. (1997b). A triarchic view of giftedness: Theory and practice. In N. Colangelo & G.A.Davis (Eds.), *Handbook of gifted education, 2nd Ed.* (pp. 43-53). Boston: Allyn and Bacon.

Tips for Teaching Triarchically

- Some of the time, teach analytically, helping students learn to analyze, evaluate, compare and contrast, critique, and judge.
- Some of the time, teach creatively, helping students learn to create, invent, imagine, discover, explore, and suppose.
- Some of the time, teach practically, helping students learn to apply, use, utilize, contextualize, implement, and put into practice.
- Some of the time, enable all students to capitalize on their strengths.
- Most of the time, enable all students to correct or compensate for their weaknesses.
- Make sure your assessments match your teaching, calling upon analytical, creative, and practical as well as memory skills.
- Value the diverse patterns of abilities in all students.

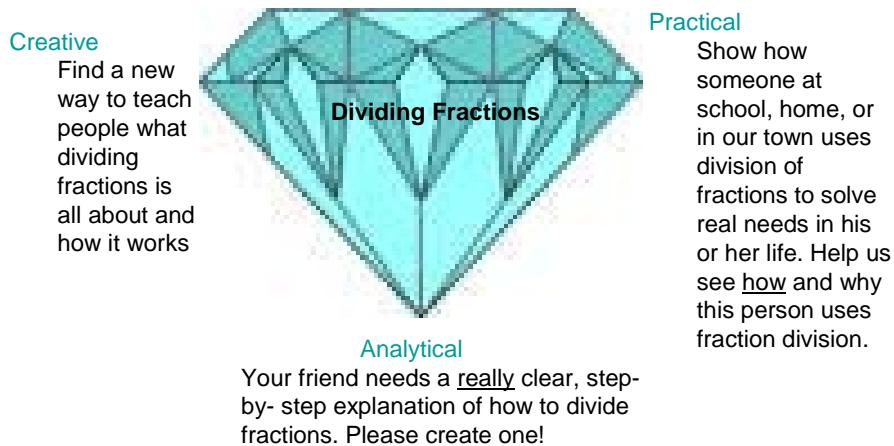
TriMind Template

Learning Goals for Activities:

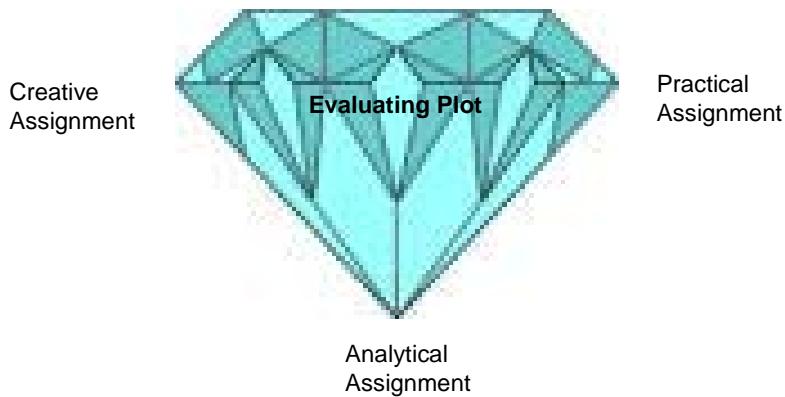


TriMind Example: Math

Learning Goals for Activities: Students will understand fraction division. Students will apply their understanding of fraction division.



Learning Goals for Activities: Students will evaluate the quality of a plot based on clear criteria: a plot should – *be believable, have events that follow a logical and energizing sequence, involve compelling characters, and have a convincing resolution*



TriMind Example: English

English TriMind Creative Assign.

Propose an original story you feel has a clear and believable plot structure, a logical sequence of events, compelling characters, and a convincing resolution. You may write it, storyboard it, or make a flow chart of it. Find a way to demonstrate that your story achieves these criteria as well as any others you deem important.

English TriMind Analytical Assign.

- Select a story that you believe DOES have an effective plot based on these three criteria as well as others you state. Provide specific support from the story for your positions

OR

- Select a story you believe has an effective plot in spite of the fact that it does NOT meet these criteria. Establish the criteria you believe made the story's plot effective. Make a case, using specific illustrations from the story, that YOUR criteria describe an effective plot

English TriMind Practical Assign.

A local TV station wants to air teen-produced digital videos based on well-known works. Select and storyboard your choice for a video. Be sure your storyboards AT LEAST have a clear and believable plot structure, a logical sequence of events, compelling characters and a convincing resolution. Note other criteria on which you feel the plot's effectiveness should also be judged. Make a case that your choice is a winner based on these and the other criteria you state.