6) Designing Structures

In this section we have placed transparencies that deal with the design of activities for the classroom. As teachers who think critically about our instruction, we learn to design effective structures for learning.

Using economics as an example, design one or both of the following:

1) A concept map

2) A thinking exercise that involves:

    a) theory
    b) critical thinking goal
    c) instructions
    d) questions

Does didactic instruction work to teach content?

- If not, why doesn't it?
- What are the problems with it?
- If so, how does it work?

---

1) Work individually
2) When you have answered the question(s), stand up and find a partner.

One of the most fundamental goals in teaching

Accurate and consistent student self assessment

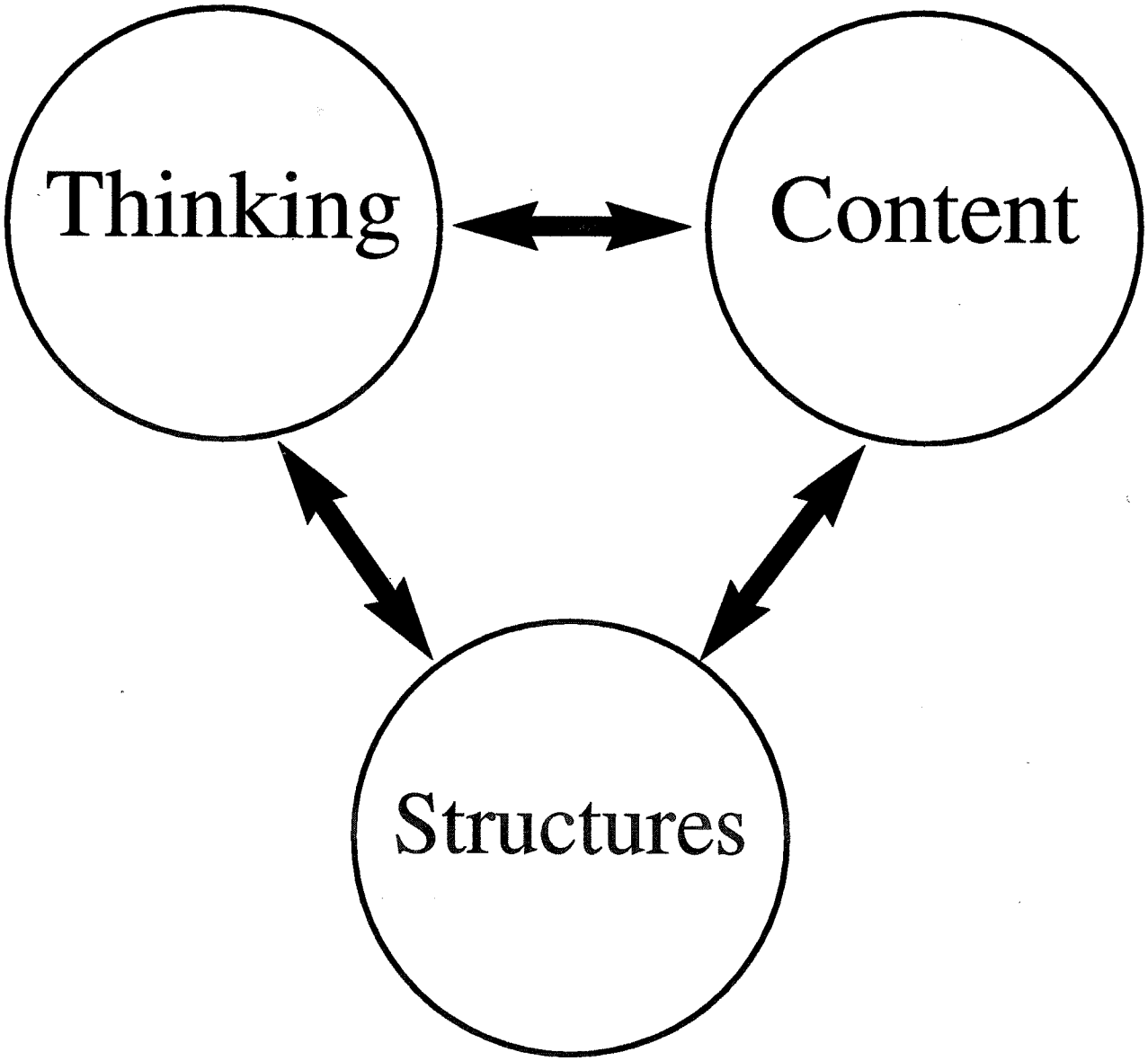
Designing Units: Elements

1) Take one unit for your course that you currently teach.

2) Redesign the unit with a focus on one or more of the elements of reasoning.

3) Incorporate some forms of questions in it.

4) Bring in standards. How do the standards relate to this?


Thinking
Content
Structures

What can we do to foster critical thinking in the classroom?

My Students

- do only what they are required to do.
- tend to put off work on a project until they have a pressing deadline.
- are poor listeners
- are poor readers
- are poor writers
- are poor oral communicators
- do not use language with care and precision
- have **no** intellectual standards
- don't know how to assess:
  - their own work
  - their own thinking
  - their own emotions
  - their own life

Orientation

- explains general plan and concept
- explains typical day
- explains student understandings
  - students sign form
- grading standards passed out
- sample work in reading room
- explain protocol on:
  - written work
  - evaluation
  - peer assessment

1) Choose three recommendations (that you judge to have potential for the improvement of the design of your class.)

2) Explain why.

3) Join with another person.

4) After sharing, brainstorm which of the structures I mentioned, or that you have thought of, might also be useful.

The Logic of Structuring Courses

The Problems that my course addresses are:

The Concepts that students must learn in my course are:

The Information students must know in this course:

The basic idea behind critical thinking is

_____

In other words _____

For example _____

One structure that teachers could use more (to facilitate critical thinking) is _____

To generate "structures" that foster critical thinking, it helps if teachers think of "content" as _____

For example, if I teach _____

I should think of it as _____

The best structure I use in my instruction is _____

The weakest "structure" I use is___

If I was a student who wanted to get the highest grade in my class with the least work I would _____

My "system" is/is not in need of major structural re-thinking because _____

The Purpose of this course is:

The Assumptions imbedded in the course are:

The Point of View of this course:

The Consequences and Implications of this course are:

The Interpretations and Inferences used in this course are:

Designing Units & Assignments K-6

Purpose:

Reinforce reading skills, spelling skills, and logical thinking.

- Give students a story where they must fill in words that make logical sense (have them work in groups).
- Then have the groups share their stories and have all the students join in a discussion of how logical each story is.
- If they don't know how to spell a word, they can use the dictionary (or ask teacher for help if necessary).

Designing Units & Assignments K-6

Purpose: Reinforce reading skills

- Give one group an activity where they are to follow directions such as stacking blocks on the teachers desk in a particular way.

- Then have another group test them to see if they are correct (so they have to read the directions as well).

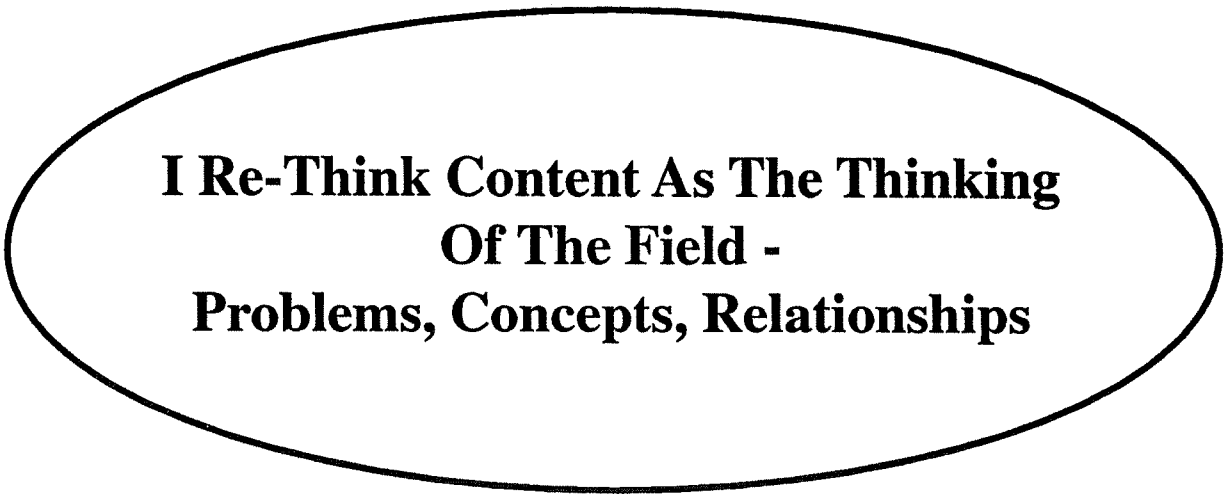
- This can also be done in pairs where one student follows directions while the other checks for accuracy.

Designing Units: Elements

1) Take one unit for your course that you currently teach.

2) Redesign the unit with a focus on one or more of the elements of reasoning.

3) Incorporate some forms of questions in it (and all assignments).


I Re-Think Content As The Thinking
Of The Field -
Problems, Concepts, Relationships


I Design This Into My
Course Structure.


I Am Prepared To Make
Tactical Adjustments.

Review: Processing the Content

1) Figure out what the info on the transparency means to you.

2) Get with your partner.

3) Teach the content to your partner. The partner should ask questions to clarify.

4) When the bell rings, switch to the other person. He/she then goes through (1-3) with the <u>new</u> transparency.

5) Switch back & forth with each new transparency.

Key Questions:

a) What does this mean?
b) How does this relate to critical thinking?

Read for Understanding

- Get into groups of three
- The person whose first initial falls last in the alphabet goes first.
- The first person reads a bit, then thinks aloud a bit, through one paragraph.
- The person to the left of the first person goes next, following the same procedure.
- The last person follows the same procedure.
- Keep going in the same fashion until you hear the tone.

Design a Unit for a Course

- Review in your mind an introduction chapter to a textbook you use, making:

    1) List of topics included
    2) List of basic concepts covered

- Then make a list of central questions, one can answer if one understands the information there.

- Then see if you can formulate an umbrella question which covers the chapter as a whole.

- Design a critical thinking approach to teaching the chapter content, so that students are reasoning.

- Try to design a sequence of activities which will comprehensively cover the logic of the chapter content and enable you to use this unit as a teaching template for the other chapters (or units) in the course.

- Work alone for ___ minutes.

- Share in groups of three for ___ minutes.

- Look through your notes. Make a list of the things you can do immediately to bring critical thinking into the classroom.

- Share at your table.

- At each table, choose one to share with the entire group.

Concept of the Course:

Algebra:

- Algebra is nothing more than arithmetic with unknowns. In this course we will focus on solving problems which involve arithmetic and unknowns.

- If you understand 2+2 = 3+1, you understand a basic arithmetic process.

- Now change the problem to 2+x = 3+1 and you have algebra.

- When you figure out what X is, you are doing algebra.

- In this course we will begin with simple problems such as this and move to more complex problems gradually, but everything we do will involve arithmetic with unknowns.

Concept of the Course:

Nursing:

The purpose of this course is to teach you to think like a skilled, competent nurse would think. Fundamental to this purpose will be your learning to place patient care at the heart of nursing practice. Everything we do in the course will relate to improving your understanding of how to place patient care at the center of your future work as a nurse.

Concept of the Course:

History:

The purpose of the course is to come to understand the value of historical thinking. By studying history, we will study how historical events of the past influence the present. Just as your past has a strong influences on the way you behave now, the broader history sheds light on later events in history, and to some extent to current events.

Structures:

Now write out your general plan, designed to bring critical thinking into the classroom.

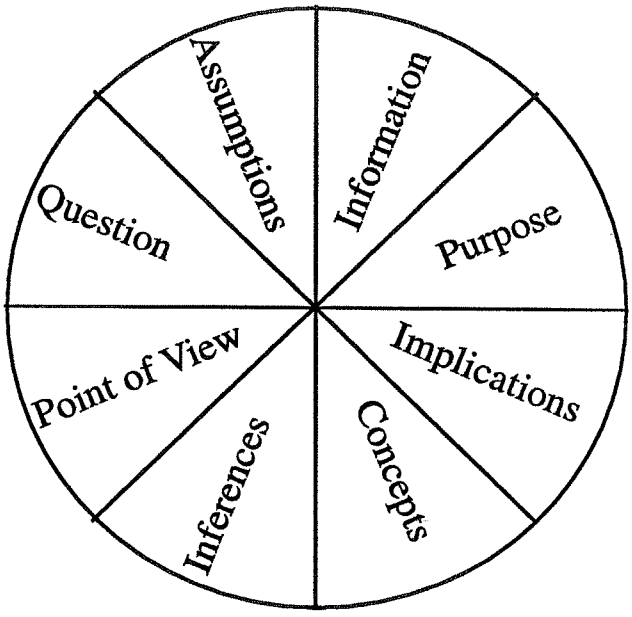
Think especially about how to help students take charge of their thinking about the content.

Observer A

Will observe the discussion with a view to noticing the sequencing of questions, the use of summary, how they are probing,

& especially

Elements of Thought

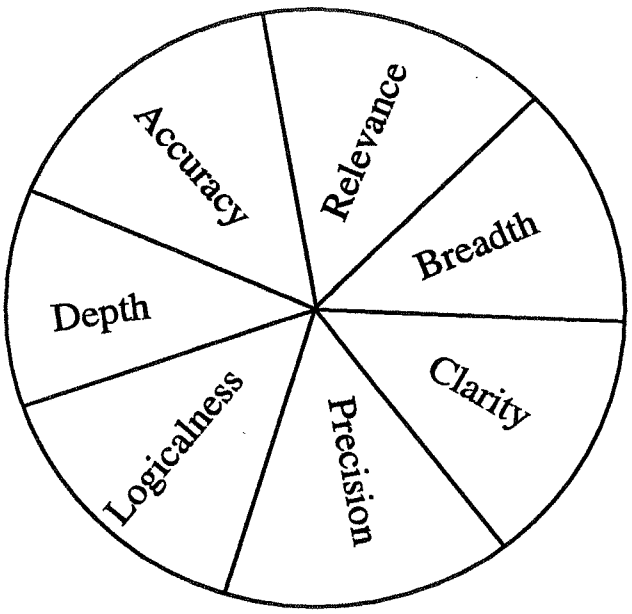


Observer B

Will observe the discussion with a view to noticing the sequencing of questions, the use of summary, how they are probing,

& especially

Intellectual Standards



Trans 162

Journal Entries

1) Describe in detail a **significant** situation you were in or are in presently.

2) Describe your emotional reaction to the situation.

3) Analyze your reaction to the situation.

4) What can you learn from your analysis? (implications)

The best structure I use in my instruction is _____

The weakest "structure" I use is __

If I was a student who wanted to get the highest grade in my class with the least work I would _____

My "system" is/is not in need of major structural re-thinking because _____

AN OVERVIEW OF HOW TO DESIGN INSTRUCTION

- The idea of instruction as something to be DESIGNED.
- Designing STRUCTURES (in advance) and designing TACTICS (to solve problems as they arise)
- Five IDEATIONAL structures (that set the stage for everything else)

    1. Your concept of the COURSE
    2. Your general plan for implementing the concepts.
    3. The requirements the students must meet.
    4. Grading policies.
    5. Grade profiles.

DESIGNING UNITS & ASSIGNMENTS

PURPOSE:

To incorporate self-assessment strategies.

- Design a unit for your course where you bring self-assessment into the structure of the unit.
- Use pages _____ for ideas.

- Write out the unit.
- Stand up, find a partner, and share.

DESIGNING A UNIT

PURPOSE:

To understand how psychologists use the scientific experiment in answering psychological questions.

1. Before class, have students write answers to these questions:
   a. What is a scientific experiment?
   b. What are the parts of an experiment?
   c. In what ways do psychologists use the experimental method to answer psychological questions?

2. In class, have students work in groups of two to discuss these questions briefly.

3. Lead general discussion of subject, helping students come to accurate answers to the questions.

4. In groups of four, have students design an experiment around a problem / question.

   Specific criteria:
   - question at issue must be important
   - adhere to ethical standards
   - some variable must be manipulated
   - list potential problems / weaknesses in design.

5. Random reporting with time for students to clarify, probe for significance, feasibility, relevance.

Design a class unit which somehow incorporates the elements of thought or an element of thought in it. Figure out how you might apply the standards.

For example:

- Goldilocks, Pride & Prejudice
  - Compare various point of view in a story.
  - What assumptions did the characters make?
  - How might have those assumptions been false?
  - What inferences did they make?

- What does it mean to be a counselor?
  - Look at the concept "counseling."

- Articulate the point of view in the Civil War.

DESIGNING A UNIT FOR A COURSE

- Review in your mind an introductory chapter to a textbook you use and make:
  1. List of topics included
  2. List of basic concepts covered

- Then make a list of central questions one can answer if one understands the information there.

- Then see if you can formulate an umbrella question which covers the chapter as a whole.

- Design a critical thinking approach to teaching the chapter content so that students are reasoning about the umbrella question and sub-questions.

- Try to design a sequence of activities which will comprehensively cover the logic of the chapter content and enable you to use this unit as a teaching template for the other chapters, or units, in the course.

- Work alone for _____ minutes.

- Share in groups of three for ____ minutes.

READING FOR UNDERSTANDING (P 61)

- Get into groups of 3
- The person whose first initial falls last in the alphabet goes first.

- The first person read a bit, then thinks aloud a bit, through one paragraph.
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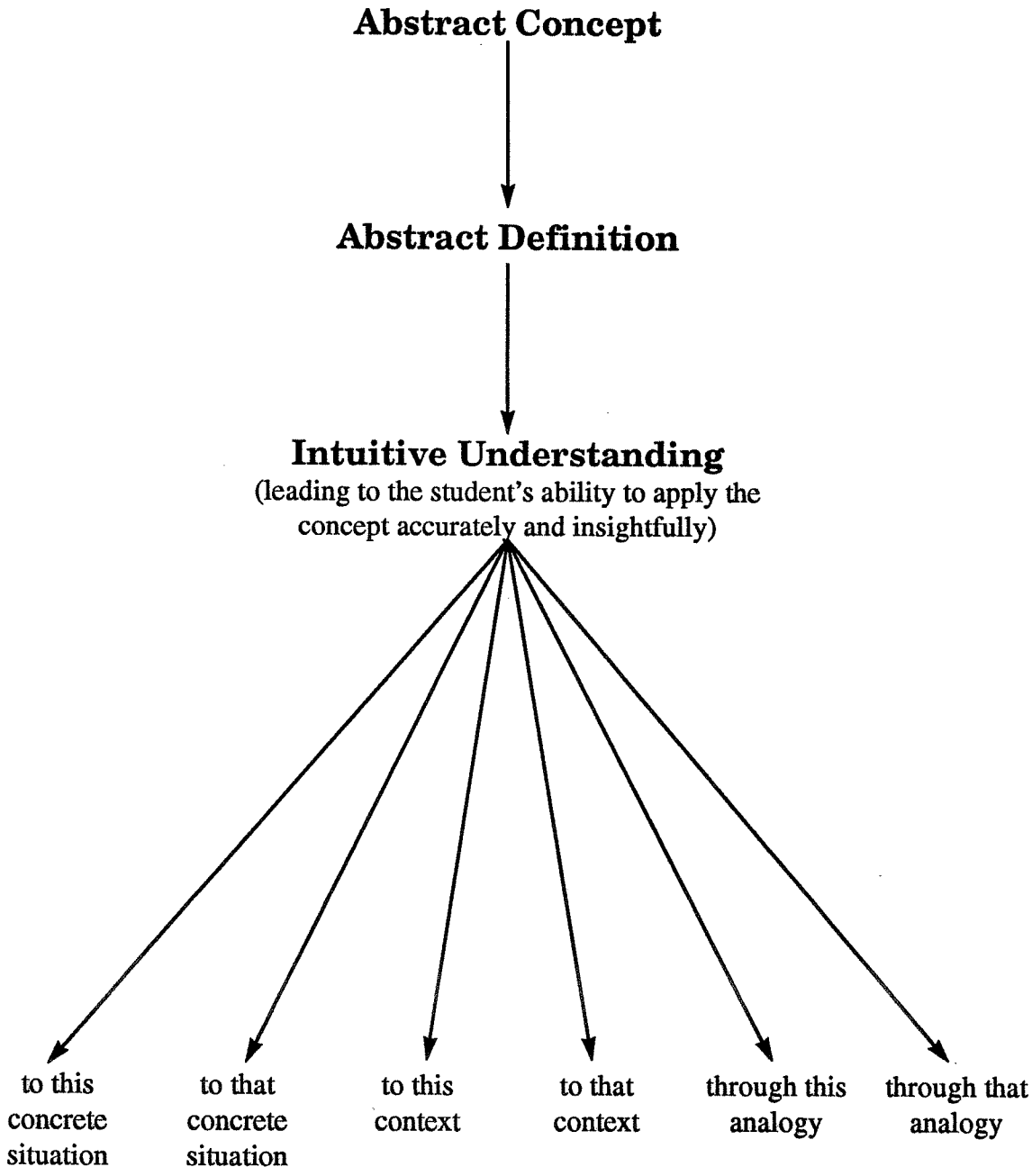
- The last person follows the same procedure.
- Keep going in the same fashion until you hear the tone.

Structures

Now write out your general plan, designed to bring critical thinking into the classroom.

Think especially about how to help students take charge of their thinking about the content.

What would a typical day be like?



Intuitive Understanding Enables Us to Insightfully Bridge the Gap Between Abstract Concept & Concrete Application

Abstract Concept

(e.g., the concept of democracy)

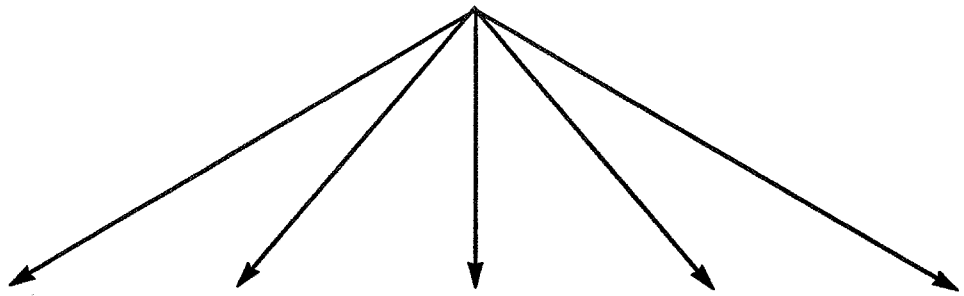
We might have our students look up the word in a dictionary where they will find abstract characterizations (like "rule by the people")

Building Intuitive Understanding

(We might lead a class discussion Socratically focused on questions like "What does it mean to say that the people rule?", "What does it mean to say that the people decide?", "What if the people don't consider the issues, have they still decided?" "What if they don't get accurate information, are they still deciding?" "In what sorts of situations in your life is democratic decision-making used?" "When is non-democratic decision-making used?", "Is it sometimes better not to decide things democratically?"

Leading To

students' starting to apply the concept of democracy seriously to their daily lives.



Let's see, I guess there are a lot of decisions that are not *made* democratically.

At home we never vote on what to do. It seems like Dad decides some things and Mom decides others.

At school we don't decide many things democratically. The teacher makes most of the decisions.

We try to make decisions democratically on the playground, but usually some of the kids seem to do most of the deciding

Maybe democracy is not always a good way to decide things or maybe we need to change the way we do some things.

Abstract Concept

(e.g., the concept of inference)

Abstract Definition

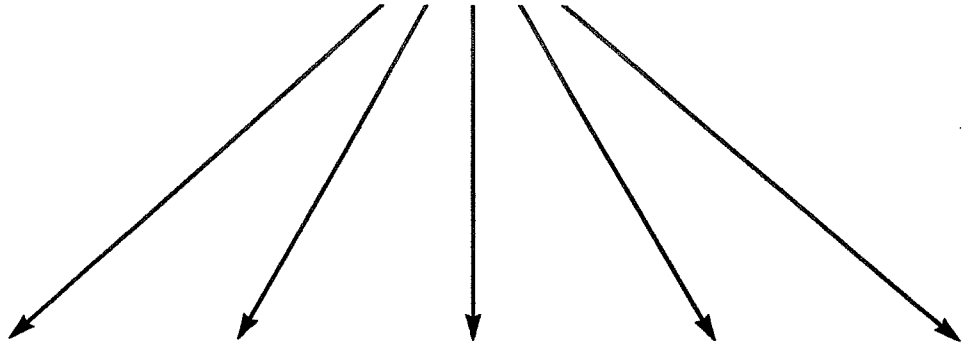
(e.g., "to conclude or decide from something known or assumed; to derive by reasoning; to draw as a conclusion")

Building Intuitive Understanding

("Let's see, we're always having to make sense of what we experience, so that means, I guess, we have to draw conclusions about everything we give meaning to. In fact, that means that whenever I am making sense of *anything,* I must be making *inferences* about it, even though I never seem to notice myself doing this. I guess my mind works very quickly and silently and I often am unaware of what it is doing.")

Leading To

the ability to apply the concept accurately and insightfully to cases.



"When Jack was late and I decided he was being irresponsible, *that* was an inference"

"When my car didn't start and I concluded that the battery was dead, *that* was an inference"

"When I was about to put my red sweater on but decided it clashed with my brown pants, *that* was an inference"

"When Frank walked by without saying anything to me and I concluded that he was angry with me, *that* was an inference"

"Whenever I read a book and decide what it means that must be the result of a whole lot of inferences"

1) Choose something— some part of your content —that you teach

---

2) Formulate at least one question in each of the 8 categories

---

3) Stand up when you are finished & share what you came up with.

Abstract Concept

(e.g., the concept of inference)

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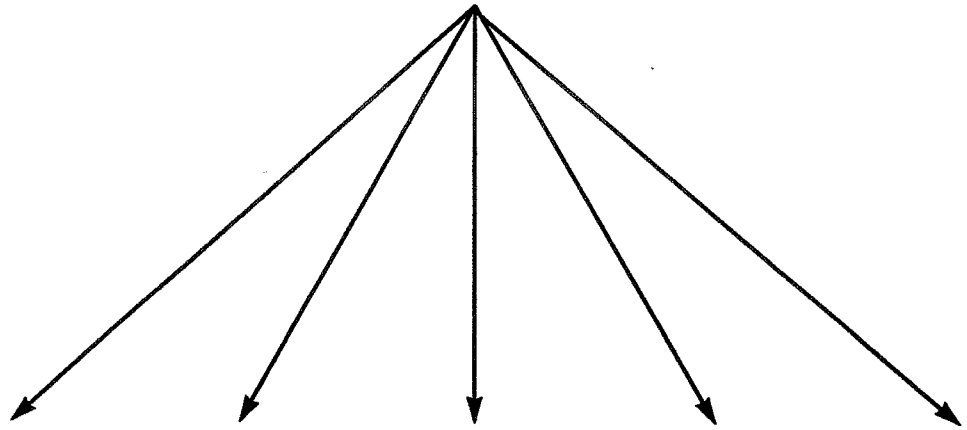

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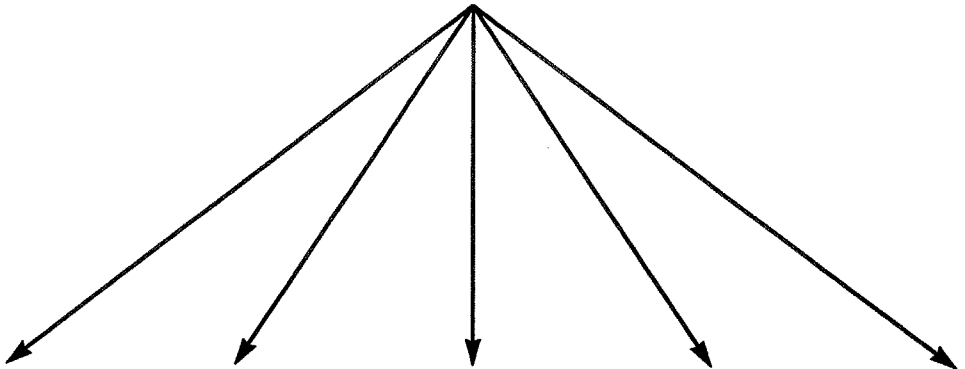

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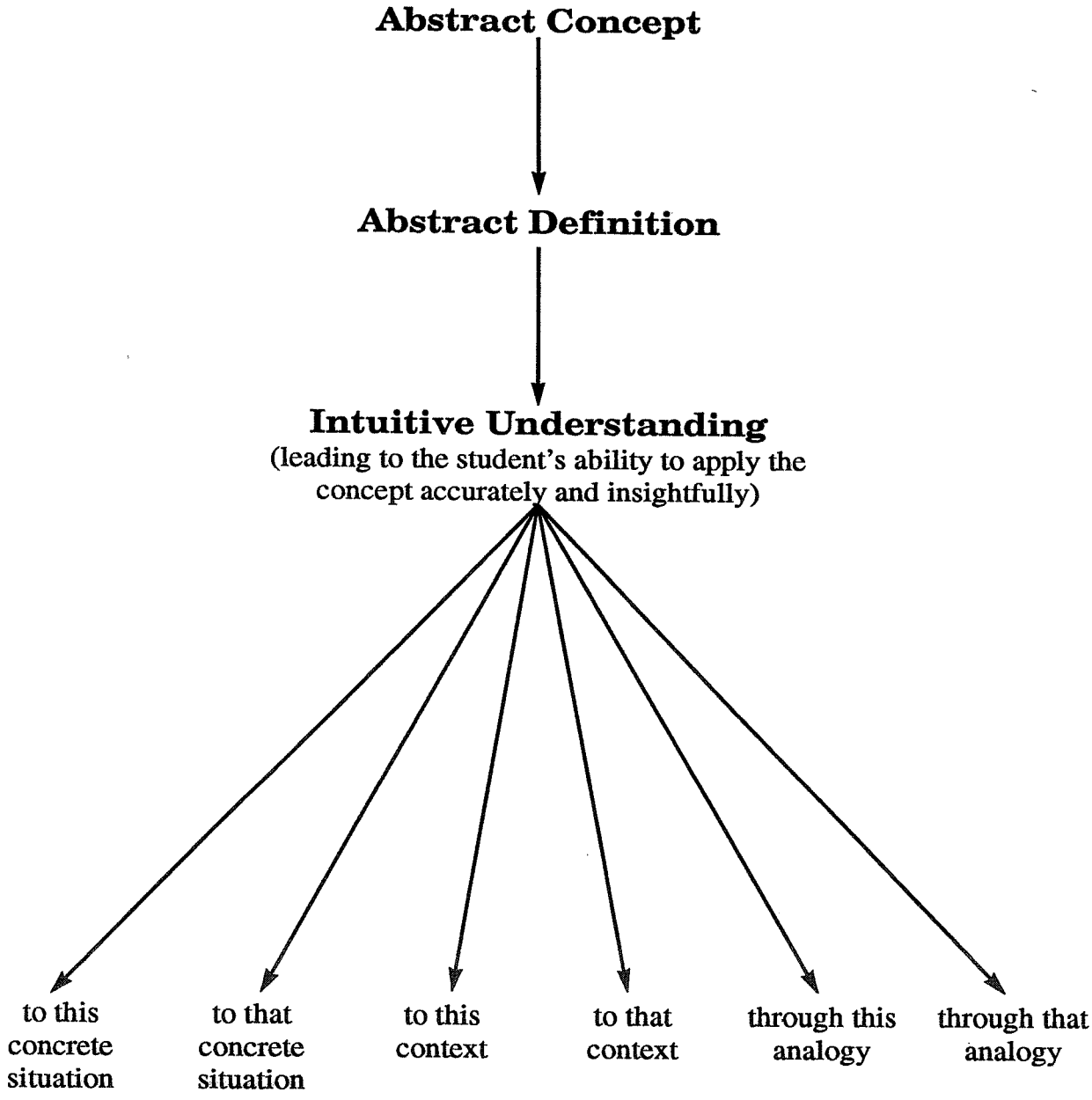

Intuitive Understanding Enables Us to Insightfully Bridge the Gap Between Abstract Concept & Concrete Application

Elements of Reasoning

Think of one unit (lesson) you teach and write:

1) The main question the students will focus on.

2) The purpose of addressing the question.

3) Key concepts related to the question and purpose.

4) The point of view the students may consider as they address the question.

5) The information students will need to gather which relate to the question.

6) Assumptions students might make as they reason through the problem.

7) Interpretations/Inferences students may make as they reason.