Assessing Inquiry:

"How do we know they're getting better?"

International Baccalaureate Americas
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10:45-12:00

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Agenda—10:45-12:00

I. Purpose of Workshop—Establish Network (5)

II. Introductions—Why assessing inquiry is important. (5)

***III. Inquisitiveness Framework—Discussion/Modifications (10)**

IV. Assessing our own Inquisitiveness (10)

***V. Revising Personal Inquisitiveness Inventory (15)**

***V. Evidence of Students' Growth in Inquiry—Discussion/Analysis (15)**

VI. Generating New Opportunities for Pre, Formative and Summative Assessments. Rubric Possibilities (10)

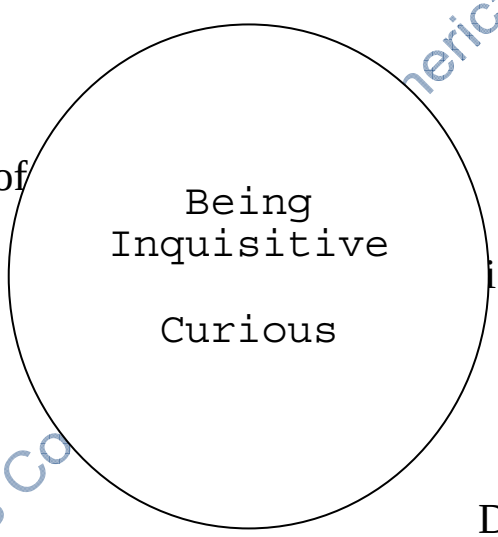
VII. Communicating with Administrators and Parents. . . Opportunities, Formats, Frequency. . .

Inquisitiveness Framework

(A conceptual Framework for planning, implementing, assessing Inquisitiveness)

Asking Good Questions (Levels I, II, and III)

Wonderings, fascinations, musings



Origins/Recognition of
Perplexity, Novelty,
Uncertainty, Doubt

Results:

Critical
Thinking

Problem
Solving

Drawing
Conclusions

Dispositions:
Openness to Mystery, Puzzles
Being Persistent, Cooperative,
Self-Directed, Interactive with world around

Assessing Our Own Inquisitiveness:

A 2,000-year-old underground chamber has been discovered in Israel's Jordan Valley.

The largest human-made cave in Israel, the 1-acre (0.4-hectare) space is thought to have begun as a quarry. In subsequent centuries it may have served as a monastery, hideout for persecuted Christians, or Roman army base, experts say.

Archaeologists working in the valley found the cave this past March when they came across a hole in a rock face.

The archaeologists peered into a huge hall lined with 22 thick pillars—giving the "impression of a palace," added Adam Zertal, team leader from University of Haifa. "We didn't have much light—it was complete darkness," he said. But "even with the torches, we saw how glorious it looks."

Etched into those columns were 31 Christian crosses, Roman letters, a Zodiac sign, and what looks like the Roman army's pennant—all of which surprised the researchers.

"It surely was not just a quarry," Zertal said.

Christine Dell'Amore
National Geographic News
June 24, 2009
(at www.refdesk.com, accessed 26 June, 2009)

K W H L A Q

What do we *think* we Know about this situation/object?

What do we want and/or *need* to find out? List your questions:

What have you observed about your own questions?

Three Story Intellect (Revised) *--Based on Benjamin Bloom

Level III Applying/Using Knowledge to demonstrate Understanding

Evaluate
Judge
Imagine
Speculate. . . If. . . then
Estimate
Apply a principle
Forecast
Create a product

Level II Processing Information [in order to Understand]

Compare/Contrast
Classify
Identify Variables
Analyze
Distinguish Cause and Effect/Fact and Opinion

Pose problems, generate solutions and solve
Make decisions

Infer and draw conclusions

Hypothesize, experiment and draw conclusions

Explain (Why) Justify decisions/conclusions

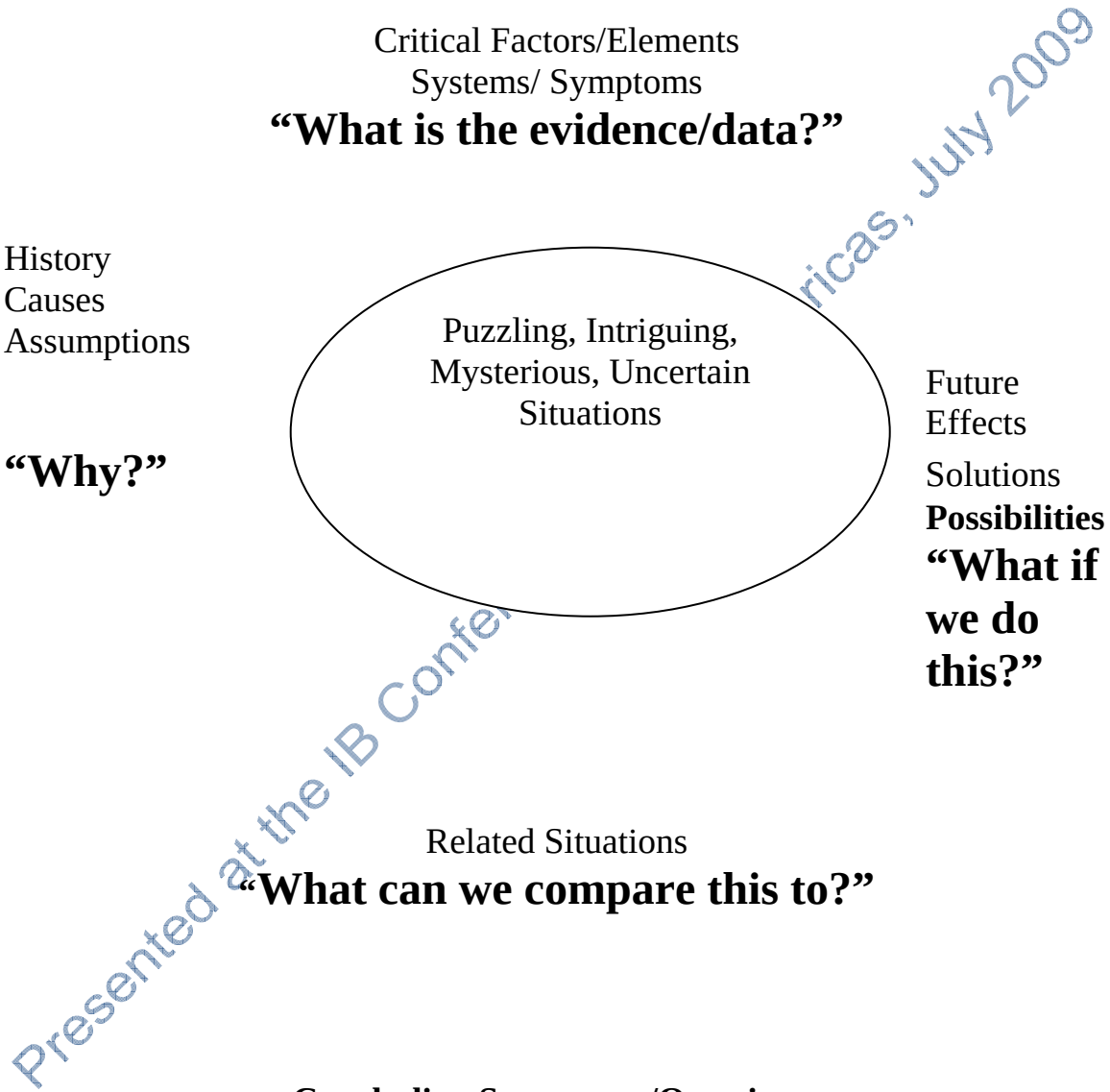
Level I Gathering Information

Describe	Name
Observe	Recite
Record Data	Recall

Source: Illinois Renewal Institute/Skylight Publishing, Inc., 1990
See also, *Developing More Curious Minds* (2003), p. 64 and *Problem-Based Learning—An Inquiry Approach* (2007, Corwin), p. 18.

Question Frame

A question frame is an attempt to provide a generic set of questions to pose about complex, perplexing situations:



Concluding Statements/Questions:
"What do we want to do?
What are our tentative conclusions?
What questions do we have now?"

Personal Inquisitiveness Inventory

1. I like to ask questions. . . those requiring more than yes/no.

2. When I am curious, I try to find answers

3. I enjoy listening to other peoples' ideas. . .other points of view

4. There are subjects that really fascinate me, not necessarily those in school

5. Problem solving is fun. . .

6. I am often skeptical of what I read, see and hear. . .

7. Working in groups to solve problems and find answers is fun/energizing. . .

8. I notice what is puzzling, contradictory, unfamiliar, intriguing, odd and unanticipated. . .

9. I am often found searching the Internet (or in books) for new ideas and experiences. . .

10. I persist in finding answers to my own questions. . .

11. The adventures of people who have traveled to new places are fascinating. . .

12. I like to generate my own learning. . .

13. I think outside the box. . .

14. Other inventory items. . .

Evidence of Students' Improvement

Key Questions: *What kinds of evidence do we need?*
What characteristics of students' products do we examine?
Does the evidence enable us to infer students' knowledge, skill or understandings? (McTighe, Wiggins, 2005)

Measuring creativity: Fluency (number of solutions); flexibility (from different points of view) and originality (novelty, uniqueness). E. P. Torrance.

A. What kinds of evidence do we need from students?

1. Asking questions. . . follow-up questioning with others
Recognizing/attending to unusual, novel, discrepant events/situations
Making choices—to explore, investigate questions on one's own
Reflecting on own performance—during and post instruction

Poking around in books, browsing the Internet, going to museums
Keeping an inquiry journal
Working with peers during investigations

Sharing background knowledge. . . sharing research with others
Setting personal goals

B. What characteristics of students' behavior do we examine?

1. Intellectual level of students' questions (I,II, III)
1. Frequency of question asking
1. Flexibility of questions—reflecting different points of view
1. Frequency, flexibility of noticing strange, mysterious events
Understanding of role of inquiry within unit investigations

Amount of time spent poking around, browsing Internet. . .
Finding new topics of fascination. . .asking more questions.. .

Cooperation with peers during investigations. . . Listening/responding

Choice—freely/frequently choosing to roam, wander, surf new subjects. . .
Respectfully challenging assumptions. . .
Generating new ideas, points of view, What if? Questions

Accessing background knowledge to build a bridge to new learnings

Specific Examples of Students' Questions/Reflections

A. **Comparing Questions in September and January**:
Liz Debrey, Minneapolis. Initial questions from pictures of ancient Athens and Rome:

> "Is this Rome in the picture?
> Are they working?
> What kinds of clothes do they usually wear?"

Then, after work with question framework (p. 6), students generated questions like these:

> "How did people become leaders?
> How is Rome like Minneapolis?
> What differences are there between Greek architecture and that at home?"

And months later in a unit on "Big Beliefs" students generated these questions:

> "What do people who don't follow a religion believe in?
> How does religion work for people?
> Why are there different religions that believe in different things?
> And Do all people follow a religion for ONE thing?" (2008)

What differences do you see between students' initial and subsequent questions? Might they be significant?

B. **Reflections on years' most meaningful experiences**:

1. "One thing that I have gotten amazing at is asking questions. That will be something that will always stay in me forever. Mrs. Faber made me believe in me." Jessica, Gr. 6
2. "I learned that first you have to make a plan. Next you have to ask yourself questions. Then it makes sense." Gr. 6
3. "The writing helped me with the drawing; now I realize I ask questions as I sketch." Art Teacher

C. Your reflections on students' questions/reflections:

Opportunities/Experiences to assess inquiry

Pre-Assessments (determining prior knowledge, dispositions)
Formative-Assessments ("provide the information needed to adjust teaching and learning while they are happening. . .informs both teachers and students about student understanding at a point when timely adjustments can be made. . ." NMSA)

Summative Assessments (". . .tools to help evaluate the effectiveness of programs, school improvement goals, alignment of curriculum, or student placement in specific programs. . ." NMSA)

Tests, standardized and others
KWHLAQ ("What Know. . Want to Know. . How find Answers. . Learned. . .Apply/Question?")
Problematic Scenarios
Observe, Think, Question with Artifacts, articles, experiences
Explorations of environments—classroom/outside school, in community
Homework
Problems of any kind
Group Work/Reflections/Reports
Critical Thinking about Data/Experiences

Individual/Group Projects (Written, Oral, Media Presentations, PPTs)
Written Work
Concept Maps developed before/during/after units

Creating Analogies, Metaphors, Similes and other comparisons. . .
Art work: drawings, musical compositions, sculptures. . .
Journals: Inquiry, daily, reflective at end of units and end of year. . .
Classroom behaviors: discussions, students' questions/answers, debates, group work
Goal setting with criteria

Possible Rubric Criteria (In addition to Presentation, Use of Language, Organization, Understanding Concepts, and/or Problem Solving):
Development of Inquisitiveness: Asks complex questions, often, as follow-up, to challenge assumptions, from different points of view, spends significant time researching, searching different sources, responds directly to strange, puzzling situations, reflects on progress.

Name

Subject

School Address

Email:

Your comments/suggestions: