Three Workshops

Ruben R. Puentedura, Ph.D.
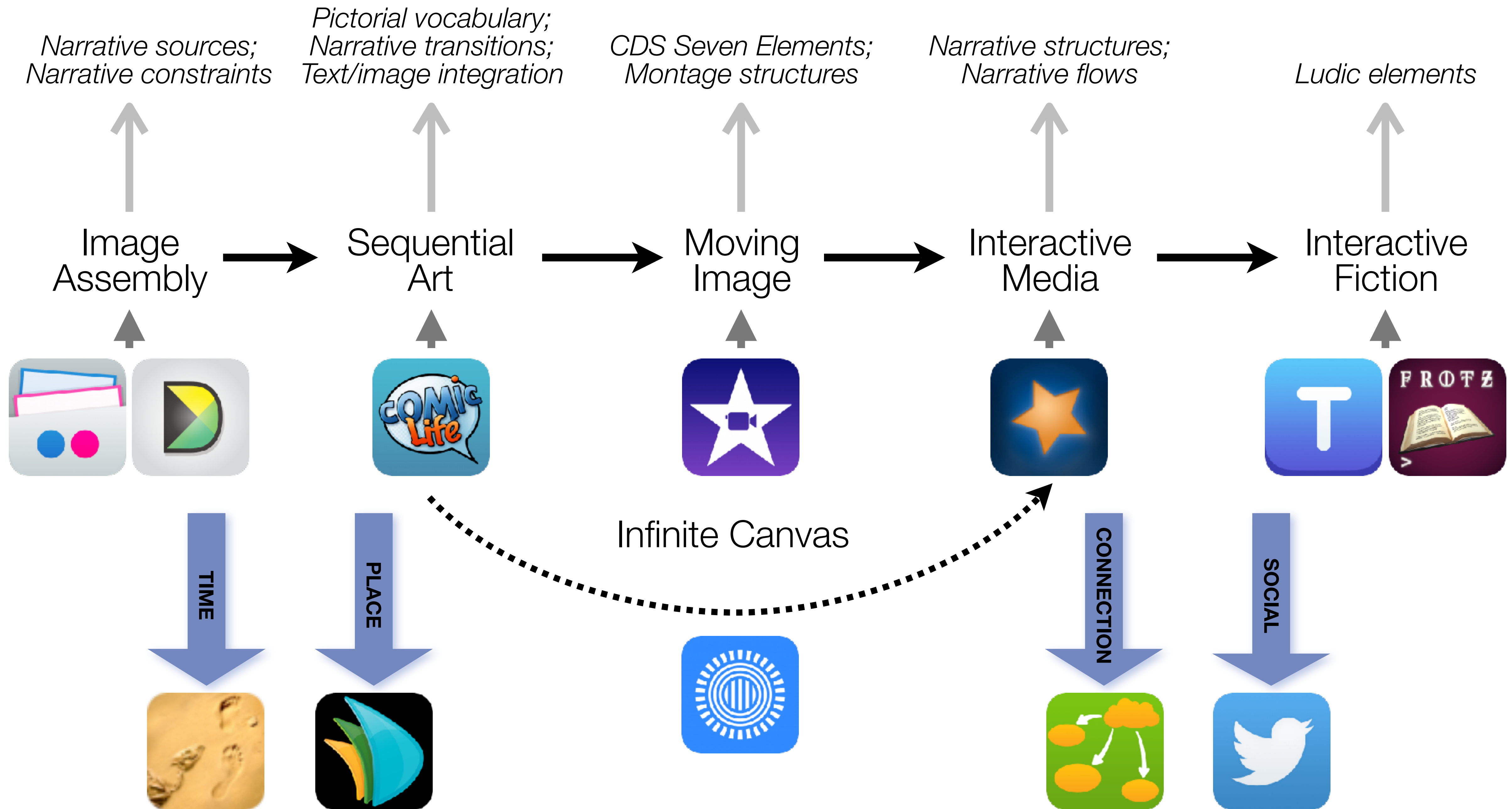
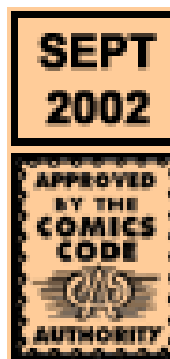| The EdTech Quintet – Associated Practices	
Social	Communication, Collaboration, Sharing
Mobility	Anytime, Anyplace Learning and Creation
Visualization	Making Abstract Concepts Tangible
Storytelling	Knowledge Integration and Transmission
Gaming	Feedback Loops and Formative Assessment

S to A: The Value of Shared Practices

- Augmented Note Taking and Annotation

- Core Visualization Methods:

  - 5 Primary Domains: Space, Time, Networks, Text, Number

- Simple Blogging

- Simple Digital Storytelling Video

- Flipped Classroom:

  - Materials Creation

  - Peer Discussion/Instruction Methods

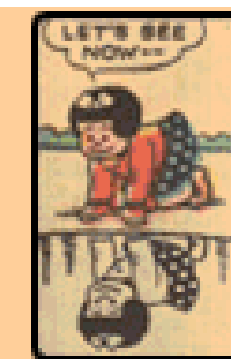- Simple Interactive Fiction

- LMS Practices

1. Tell Me A Story

Storytelling

Narrative sources;
Narrative constraints

Pictorial vocabulary;
Narrative transitions;
Text/image integration

CDS Seven Elements;
Montage structures

Narrative structures;
Narrative flows

Ludic elements

Image
Assembly → Sequential
Art → Moving
Image → Interactive
Media → Interactive
Fiction

Infinite Canvas

TIME

PLACE

CONNECTION

SOCIAL

INTRODUCTION

THE GAME

HALL OF FAME

The Game

There are no panels in the sequence yet.

Click on a panel to add it to the sequence:
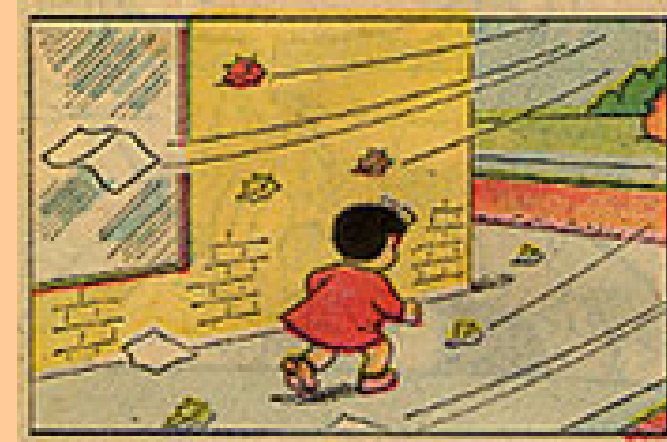
Draw new panels
Reset the sequence
Mail this sequence to a friend
Five-Card Nancy message board

Meaning and the Camera Frame

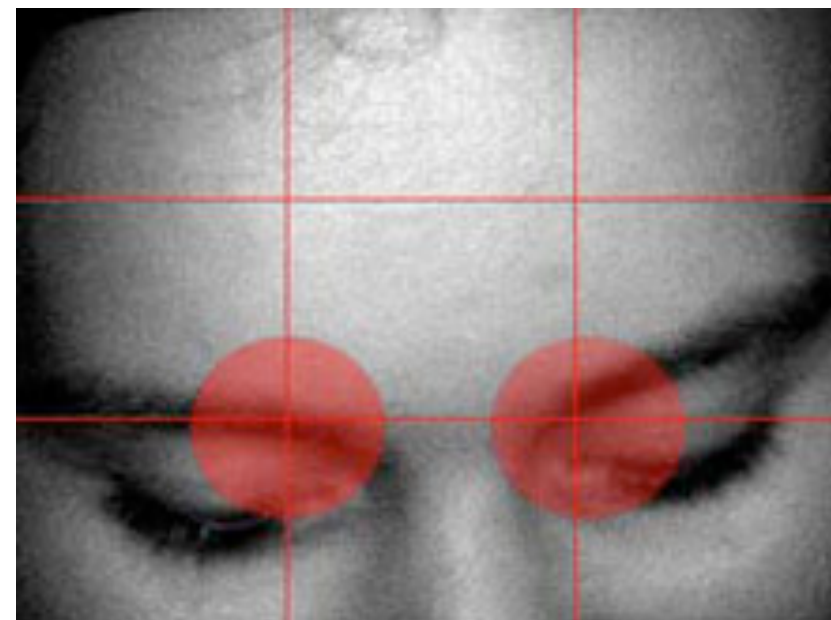# The Power of the Center(s)
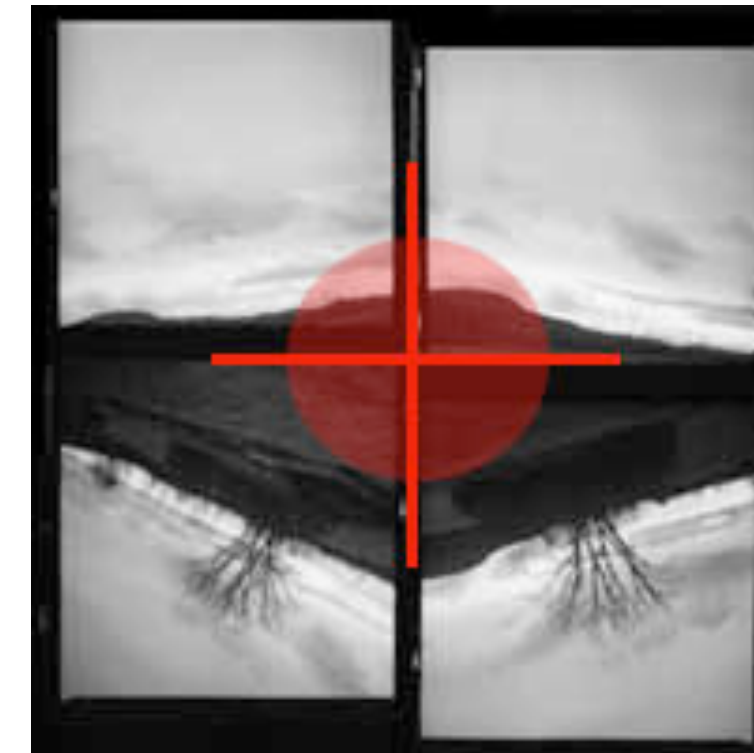
The Rule of Thirds
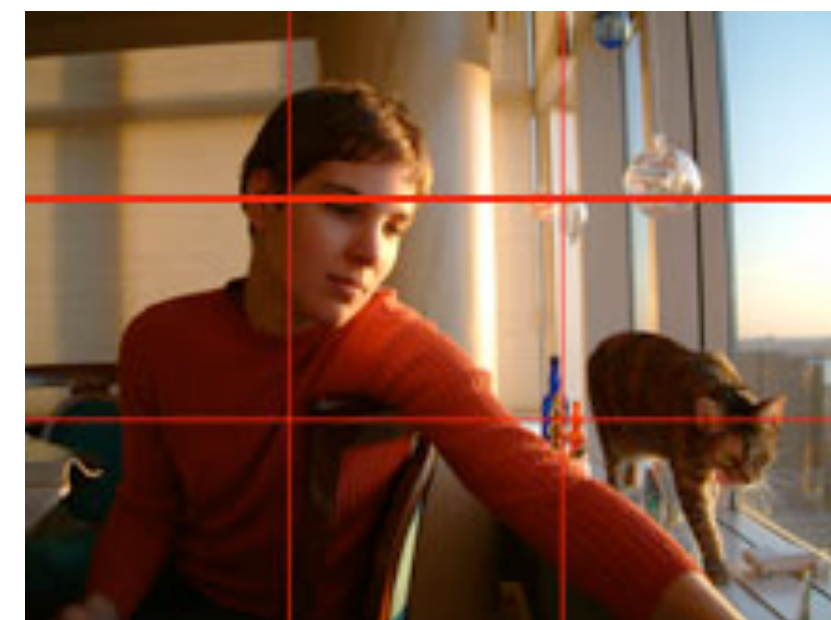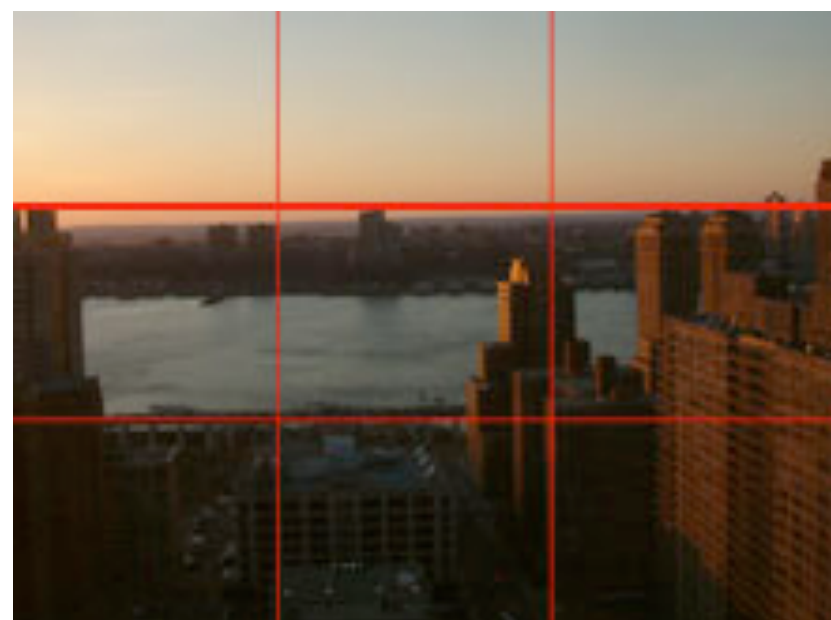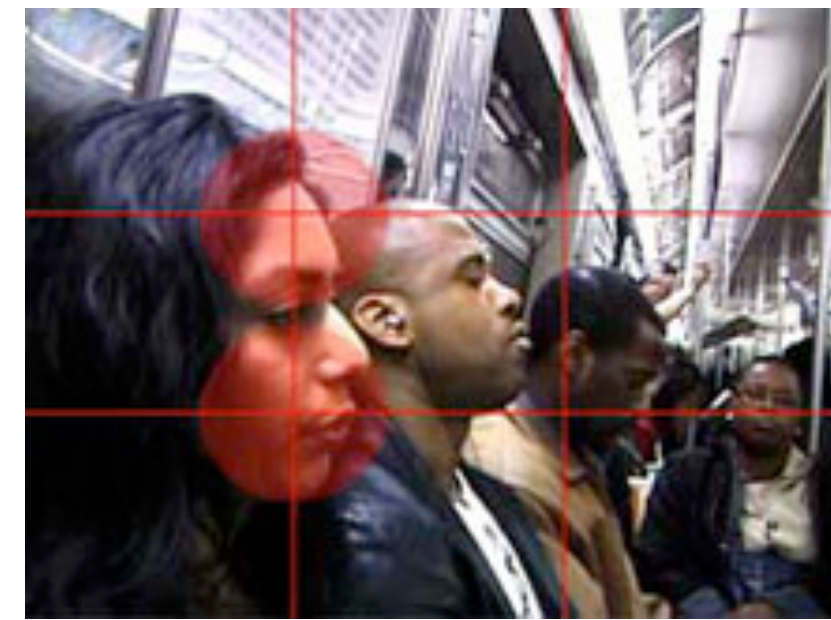
Lines of Direction

Leading the Action

Common Shots

• Big Close-Up

• Close-Up

• Medium Shot

• Long Shot

Scott McCloud: Two Key Frameworks

FIRST, WE HAVE THE **WORD SPECIFIC** COMBINATIONS, WHERE PICTURES *ILLUSTRATE,* BUT DON'T SIGNIFICANTLY *ADD* TO A LARGELY *COMPLETE* TEXT.

WE STUMBLED BACK TO THE APARTMENT SHORTLY BEFORE DAWN, *VOMITING* EVERY 20 YARDS.

JUDY GAVE ME HER KEYS AND SMILED.

THE *UNITED STATES CONSTITUTION* WAS ADOPTED BY THE *SECOND CONTINENTAL CONGRESS* IN 1787 AND PUT INTO EFFECT IN 1789.

ANOTHER TYPE IS THE **ADDITIVE** COMBINATION WHERE WORDS *AMPLIFY* OR *ELABORATE* ON AN IMAGE OR *VICE VERSA.*

MY HEAD FEELS LIKE A *SMASHED* PUMPKIN!

HOW D'YA LIKE MY *NEW THREADS,* BABE?

IS THIS THE SAME *JUPITER* OF MY YOUTH?

PERHAPS THE MOST *COMMON* TYPE OF WORD/PICTURE COMBINATION IS THE **INTER-DEPENDENT,** WHERE WORDS AND PICTURES GO *HAND IN HAND* TO CONVEY AN IDEA THAT NEITHER COULD CONVEY *ALONE.*

MEANWHILE...

DID ANYONE *SEE* YOU?

THIS IS ALL I NEED TO *STOP* HIM!

I ASK YOU, DOES THIS GUY LOOK LIKE A *C.E.O.* TO YOU?!

"AND JUST *GUESS* WHO DROVE UP IN BOB'S TRUCK AN HOUR LATER!"

THEN THERE ARE **PICTURE SPECIFIC** COMBINATIONS WHERE WORDS DO LITTLE MORE THAN ADD A *SOUNDTRACK* TO A VISUALLY TOLD SEQUENCE.

HE *DID IT!*

MMM... MMM...

IN **PARALLEL** COMBINATIONS, WORDS AND PICTURES SEEM TO FOLLOW VERY DIFFERENT COURSES—WITHOUT *INTERSECTING.*

"TALKED TO *BILL* YET?"

"*SALLY* DID. *WHY?"*

"THE *TEST RESULTS* CAME BACK: ALL *NEGATIVE.*"

"*REALLY!* THAT'S *GREAT!*"

WELL...

PEPPER. CEREAL

MILK. BUTTER

LIGHT BULBS.

HE'S LYING. UH-HUH.

HEY, MARGE!

OH, MY *GOD!*

"AFTER COLLEGE, I PURSUED A CAREER IN *HIGH FINANCE.*"

HURRY UP, WILLYA?!

AND, OF COURSE, **DUO-SPECIFIC** PANELS IN WHICH BOTH WORDS AND PICTURES SEND ESSENTIALLY THE *SAME* MESSAGE.

GRIM-FACED, GEORGE LIFTED HIS LOLLYPOP.

BUT THE CAPTAIN'S MIGHTY BLOW MISSES ITS INTENDED TARGET!

BLAST! HE *DODGED* MY PUNCH AND I STRUCK THIS *BRICK WALL!*

HA! I *DODGED* YOU!

I FEEL SO *SAD!*

...THOUGHT AMY.

STILL ANOTHER OPTION IS THE **MONTAGE** WHERE WORDS ARE TREATED AS INTEGRAL *PARTS* OF THE PICTURE.

CASH PUB FLOW BOTTOM LINE ANNUAL REPORT

HAPPY!

INTERDEPENDENT COMBINATIONS AREN'T ALWAYS AN *EQUAL BALANCE* THOUGH AND MAY FALL *ANYWHERE* ON A SCALE BETWEEN TYPES ONE AND TWO.

GENERALLY SPEAKING, THE MORE IS SAID WITH *WORDS,* THE MORE THE PICTURES CAN BE FREED TO GO *EXPLORING.* AND *VICE VERSA.*

$$\frac{P}{W} \qquad \frac{P}{W} \qquad \frac{W}{P}$$

Scott McCloud, *Understanding Comics.* New York: HarperCollins. (1993)

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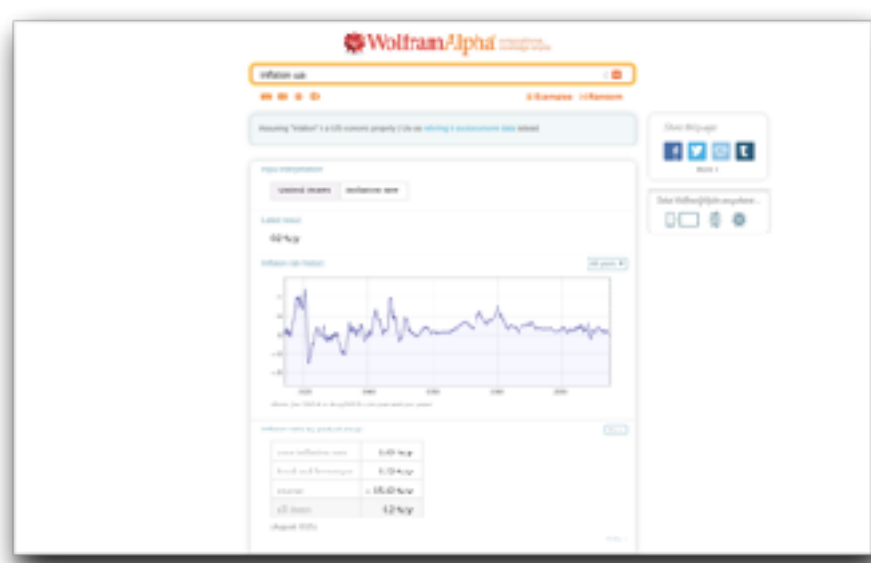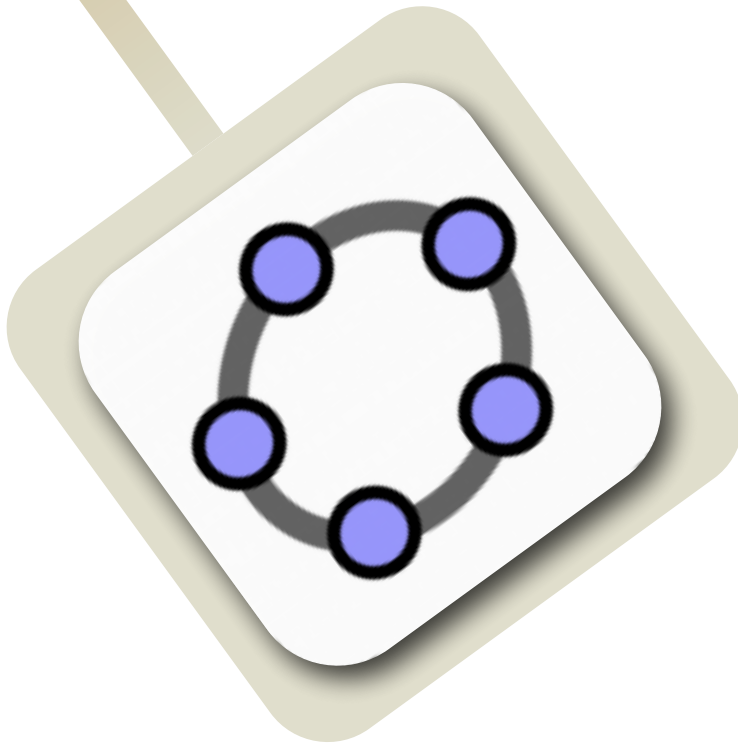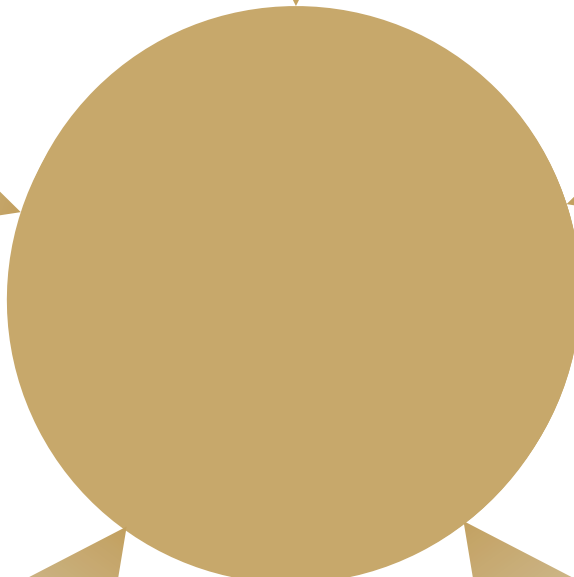Want to edit with Fotor on your phone?

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2. Show Me Why

Visualization

StoryMap JS

Maps that tell stories.

Make a StoryMap

Overview   Examples   Make a StoryMap   Advanced   Help

Map Overview

Madison

Milwaukee   Grand Rapids   Flint
Lansing   London   Hamilton
Rockford   Ann Arbor   Detroit
Chicago   Erie
South Bend   Toledo   Cleveland
Fort Wayne   Akron

Mississauga   Toro
Kitchener   London

MICHIGAN
IOWA
ILLINOIS   INDIANA   OHIO   PENNSYLVANIA
MISSOURI   WEST VIRGINIA   VIRGINIA
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The Travels of Ibn Battuta

Introduction

Welcome to this tour of Ibn Battuta's medieval travels!

You will be following in the footsteps of this famous 14th century Muslim traveler, exploring the places he visited and the people he encountered. To help you learn more about his adventures there will be images of the people and places he saw, information on the food he might have tasted, and "side trips" into the past and future.

Ibn Battuta started on his travels in 1325, when he was 20 years old. His main reason to travel was to go on a Hajj, or a Pilgrimage to Mecca, to fulfill the fifth pillar of Isla.. But his traveling went on for around 29 years and he covered about 75,000 miles visiting the equivalent of 44 modern countries which were then mostly under the governments of Muslim leaders of the World of Islam, or "Dar al-Islam".

He met many dangers and had numerous adventures along the way. He was attacked by bandits, almost drowned in a sinking ship, and nearly beheaded by a tyrant ruler. He also had a few marriages and lovers and fathered several children on his travels!

Near the end of Ibn Battuta's life, the Sultan of Morocco insisted that Ibn Battuta dictate the story of his travels to a scholar and today we can read translations of that account, which was originally titled *Tuhfat al-anzar fi gharaaib al-amsar wa ajaaib al-asfar*, or *A Gift to Those Who Contemplate the Wonders of Cities and the Marvels of Traveling*.

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GeoGebra

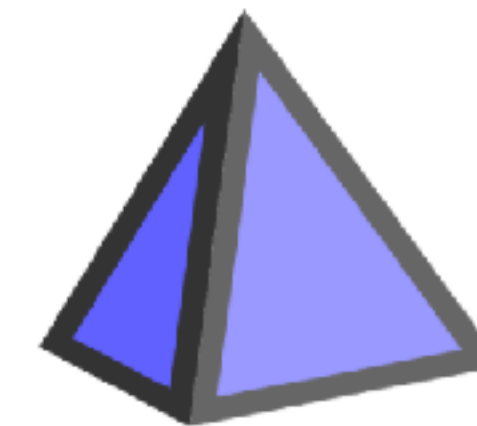\+   Materials   Downloads   Blog   Help   **Sign in**

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Geometry Calculator
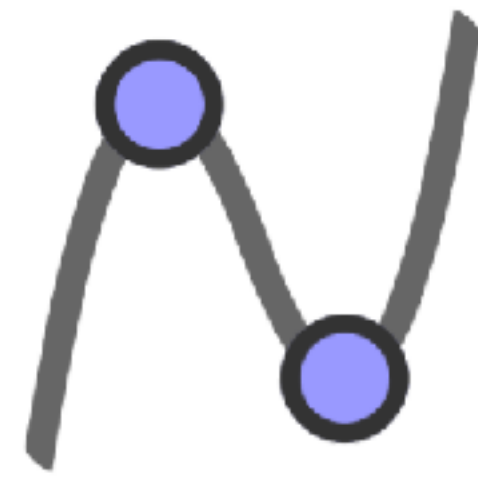
Graphing Calculator

3D Calculator

Materials

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3. Integration

Black and Wiliam: Defining Formative Assessment

"Practice in a classroom is formative to the extent that evidence about student achievement is elicited, interpreted, and used by teachers, learners, or their peers, to make decisions about the next steps in instruction that are likely to be better, or better founded, than the decisions they would have taken in the absence of the evidence that was elicited."

Black, P. and Wiliam D. "Developing the theory of formative assessment." *Educational Assessment, Evaluation and Accountability*. 21:5-31 (2009)

Wiliam: A Framework for Formative Assessment

	Where the learner is going	Where the learner is right now	How to get there
Teacher	1 Clarifying learning intentions and criteria for success	2 Engineering effective classroom discussions and other learning tasks that elicit evidence of student understanding	3 Providing feedback that moves learners forward
Peer	Understanding and sharing learning intentions and criteria for success	4 Activating students as instructional resources for one another	
Learner	Understanding learning intentions and criteria for success	5 Activating students as the owners of their own learning	

Dylan Wiliam, *Embedded Formative Assessment*. Solution Tree (2011)

1. Clarifying, Sharing, and Understanding Learning Intentions and Criteria for Success

- Rubric Dichotomies:
  - Task-specific *vs*. generic rubrics
  - Product-focused *vs*. process-focused
  - Official *vs*. student-friendly Language

- Rubric Design:
  - Three key components in presenting learning intentions and success criteria to students:
    - WALT: we are learning to
    - WILF: what I'm looking for
    - TIB: this is because
  - Make explicit progressions within rubrics, and progressions across rubrics

- Students and Rubrics:
  - Have students look at samples of other students' work, then rank them by quality
    - Students become better at seeing issues in their own work by recognizing them in others' work
    - Not a "somebody wins" exercise, but rather a quality exercise that engages students
  - Have students design test items, rubrics

Rubric Example #1: A Classical Rubric for Concept Maps (M. Besterfield-Sacre et al., 2004)

	1	2	3
Comprehensiveness – covering completely/broadly	The map lacks subject definition; the knowledge is very simple and/or limited. Limited breadth of concepts (i.e. minimal coverage of coursework, little or no mention of employment, and/or lifelong learning). The map barely covers some of the qualities of the subject area.	The map has adequate subject definition but knowledge is limited in some areas (i.e., much of the coursework is mentioned but one or two of the main aspects are missing). Map suggests a somewhat narrow understanding of the subject matter.	The map completely defines the subject area. The content lacks no more than one extension area (i.e., most of the relevant extension areas including lifelong learning, employment, people, etc. are mentioned).
Organization – to arrange by systematic planning and united effort	The map is arranged with concepts only linearly connected. There are few (or no) connections within/between the branches. Concepts are not well integrated.	The map has adequate organization with some within/between branch connections. Some, but not complete, integration of branches is apparent. A few feedback loops may exist.	The map is well organized with concept integration and the use of feedback loops. Sophisticated branch structure and connectivity.
Correctness - conforming to or agreeing with fact, logic, or known truth	The map is naïve and contains misconceptions about the subject area; inappropriate words or terms are used. The map documents an inaccurate understanding of certain subject matter.	The map has few subject matter inaccuracies; most links are correct. There may be a few spelling and grammatical errors.	The map integrates concepts properly and reflects an accurate understanding of subject matter meaning little or no misconceptions, spelling/grammatical errors.

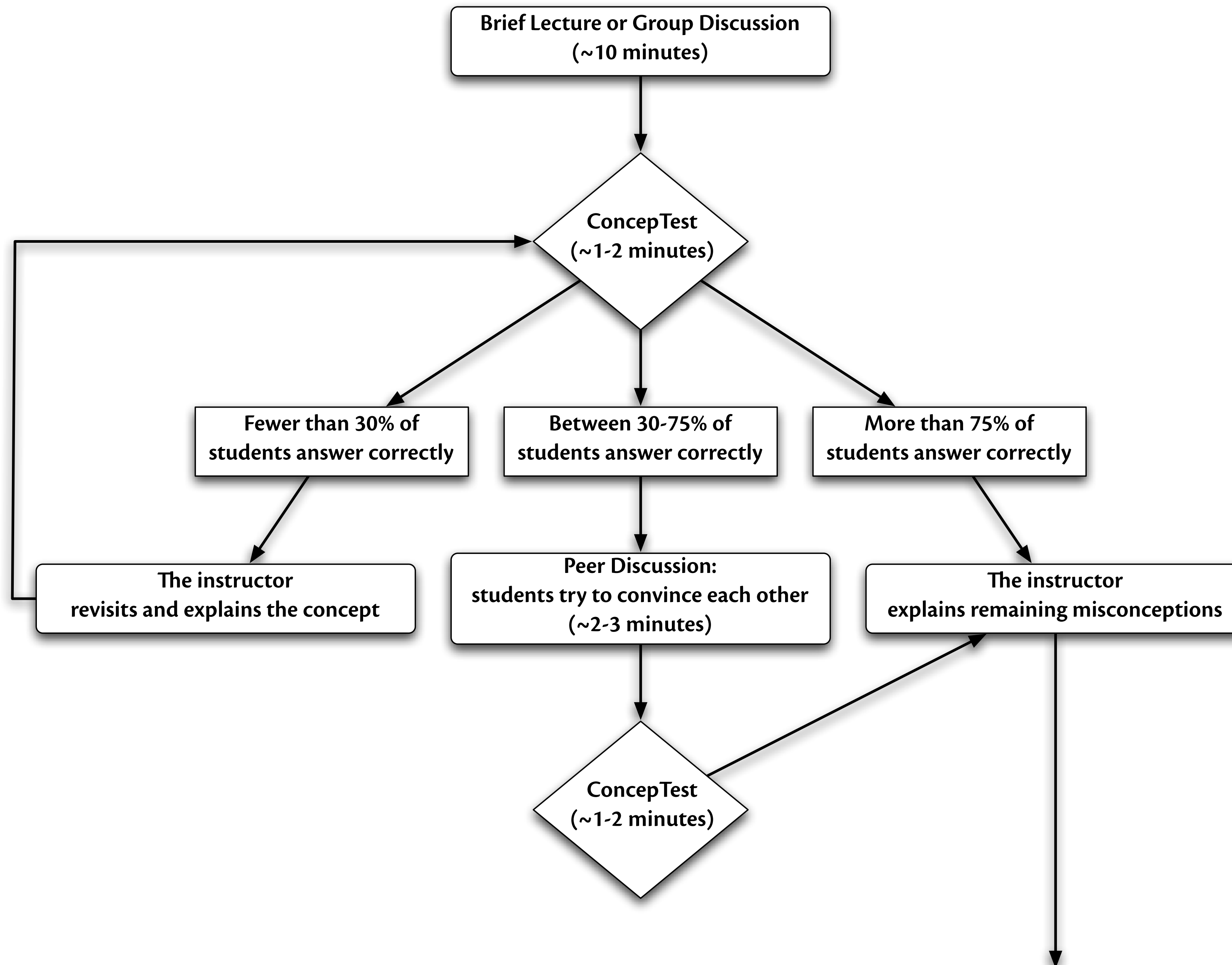*Table 4. Concept Map scoring rubric (Understanding of Engineering Field).*

Besterfield-Sacre, Mary, et al. "Scoring concept maps: An integrated rubric for assessing engineering education." *Journal of Engineering Education* 93.2 (2004): 105-115.

Rubric Example #2: A Rubric for Sociology Online Discussion (S. Evans, 2010)

	4 Points	2 Point	0 Points
Content	You show that you can apply or extend the idea you are discussing.	Some of your messages analyze, interpret, or apply the material well, but some do not. This might either be because the analysis was not done well, or because it was not attempted (that is, was simply opinion or hearsay).	Your messages generally show little evidence of analysis, consisting instead of opinion, feelings and impressions.
Accuracy	You accurately represent the concepts discussed.	You generally represent the concepts accurately, but you do not do so in all cases.	You have significant issues with regard to accurately representing the concepts.
Use of material	You use and cite sources, including the text and articles and/or bring in an outside source, all of which clearly add *significantly* to the discussion.	You clearly refer back to a definition, example or concept from the reading or lecture.	You do not bring in or refer to any material from the text, outside sources, or lectures.
Sociological Analysis	You focus on the sociological implications of the issue at hand (e.g., social meaning, the outcomes for society or groups, the social function served).	You touch on some sociological issues, but focus also on individual ones.	You focus primarily on individual issues.
	2 Points	**1 Point**	**0 Points**
Responses	You extend or politely question the post of another person in a way that advances the discussion.	You add new examples that continue the idea created by another person.	Your responses are primarily agreement.
Participation	You write at least three or more substantive comments (using the above criteria) based on the discussion assigned.		You write fewer than three substantive comments.
Time of Posting	Your posts are spread widely during the discussion.	You post at two significantly different times.	Your posts are clustered within a short period of time.
Posts Read	You have read at least 75% of the posts in the discussion.	You read at least 50% of the posts in the discussion.	You read less than 50% of the posts in the discussion.
Clarity	You use standard grammar and spelling and your meaning is clear.	Your posts have some grammar or spelling mistakes or your meaning is not entirely clear.	Your posts have significant grammar or spelling mistakes or your meaning is not clear.

2. Eliciting Evidence of Learners' Achievement in the (Extended) Classroom

- Asking questions in class:
  - Chosen to act as a discussion/thinking trigger
  - Should provide info for varying instruction on the fly and in the long term
  - Examples:
    - ConcepTest
    - POE (Predict-Observe-Explain)
    - TPS (Think-Pair-Share)
    - Virtual Whiteboard

Brief Lecture or Group Discussion
(~10 minutes)

ConcepTest
(~1-2 minutes)

Fewer than 30% of
students answer correctly

Between 30-75% of
students answer correctly

More than 75% of
students answer correctly

The instructor
revisits and explains the concept

Peer Discussion:
students try to convince each other
(~2-3 minutes)

The instructor
explains remaining misconceptions

ConcepTest
(~1-2 minutes)

Mazur, E. *Peer Instruction - A User's Manual*. Prentice Hall (1997)

3. Providing Feedback that Moves Learners Forward

- The feedback process must provide a recipe for future action

- Feedback should:
  - Be more work for the recipient than the donor, i.e., not just right/wrong – make them think about what did not work
  - Be focused: less is more
  - Relate explicitly to goals/rubrics

- How:
  - Scores or praise alone do not provide this; comments do
  - Supplying minimal scaffolded responses (i.e., where the student got stuck) >> supplying a full response to the problem
    - This emphasizes the crucial role of the draft object and process
  - Oral feedback >> written feedback
    - Consider using recordings
  - Create (sometimes together with students) process rubrics that embody this scaffold
  - Provide time for students to use this feedback

- Minimize grading:
  - Avoid false stopping points
  - Avoid ratchet effect

4. Activating Students as Instructional Resources for One Another

- Two key elements:
  - Group goals
  - Individual accountability

- Effectiveness due to (in order of importance):
  - Personalization
  - Cognitive Elaboration
  - Motivation
  - Social Cohesion

- Reciprocal help only works when it takes the form of elaborated explanations:
  - Not simple answers or procedures
  - Looks to the upper levels of Bloom for both participants

- Reciprocal help is more effective (by a factor of up to 4) if the product being assessed is the result of the aggregate of individual contributions, rather than just one group product

5. Activating Students as Owners of their Own Learning

- Effective self-assessment is up to twice as effective as other-assessment

- Two key components:
  - Metacognition:
    - Metacognitive knowledge: know what you know
    - Metacognitive skills: what you can do
    - Metacognitive experience: what you know about your cognitive abilities
  - Motivation:
    - Traditionally viewed as a cause (intrinsic/extrinsic), but is better viewed as an outcome:
      - Flow (M. Csikszentmihalyi): the result of a match between capability and challenge
        - Students are motivated to reach goals that are specific, within reach, and offer some degree of challenge

- Three sources of info for students to decide what they will do:
  - Perceptions of the task and its context
  - Knowledge about the task and what it will take to be successful
  - Motivational beliefs

- The role of the draft process and object resurfaces as a crucial component here

- Important Tools:
  - Learning logs and journals
  - Learning portfolios

Determining SAMR Level: Questions and Transitions

- **Substitution:**
  - What is gained by replacing the older technology with the new technology?

- **Substitution to Augmentation:**
  - Has an improvement been added to the task process that could not be accomplished with the older technology at a fundamental level?
  - How does this feature contribute to the design?

- **Augmentation to Modification:**
  - How is the original task being modified?
  - Does this modification fundamentally depend upon the new technology?
  - How does this modification contribute to the design?

- **Modification to Redefinition:**
  - What is the new task?
  - Is any portion of the original task retained?
  - How is the new task uniquely made possible by the new technology?
  - How does it contribute to the design?

Hippasus

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