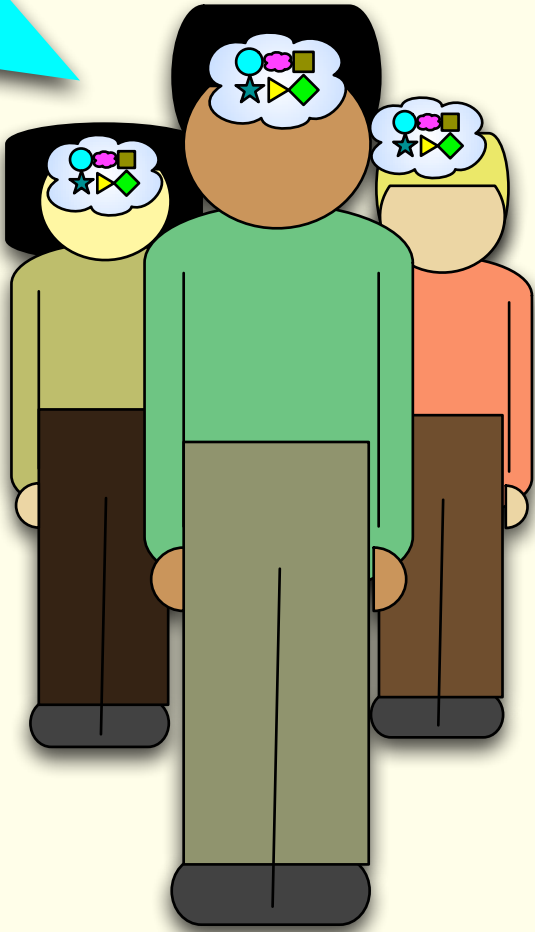
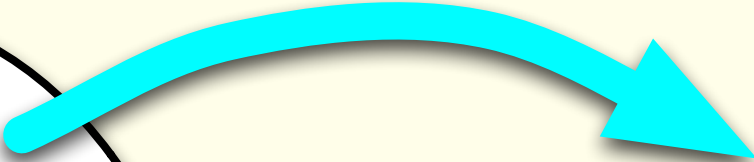
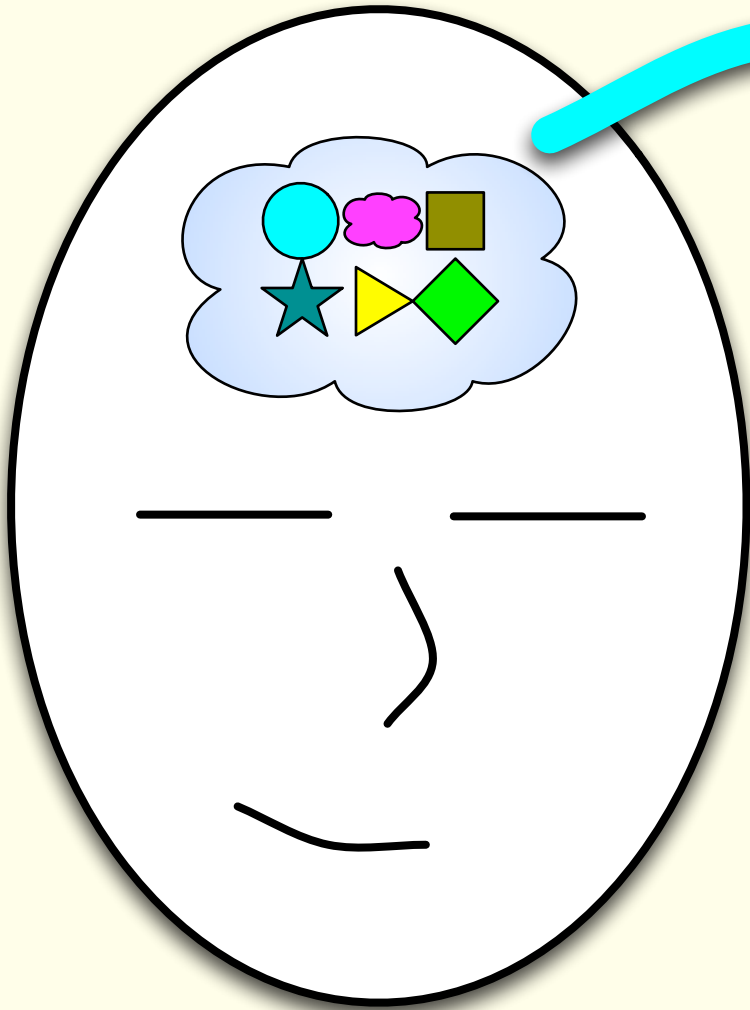


RETHINKING HOW YOU PRESENT INFORMATION

**UPPER MERION AREA HS
AUGUST 20, 2009**

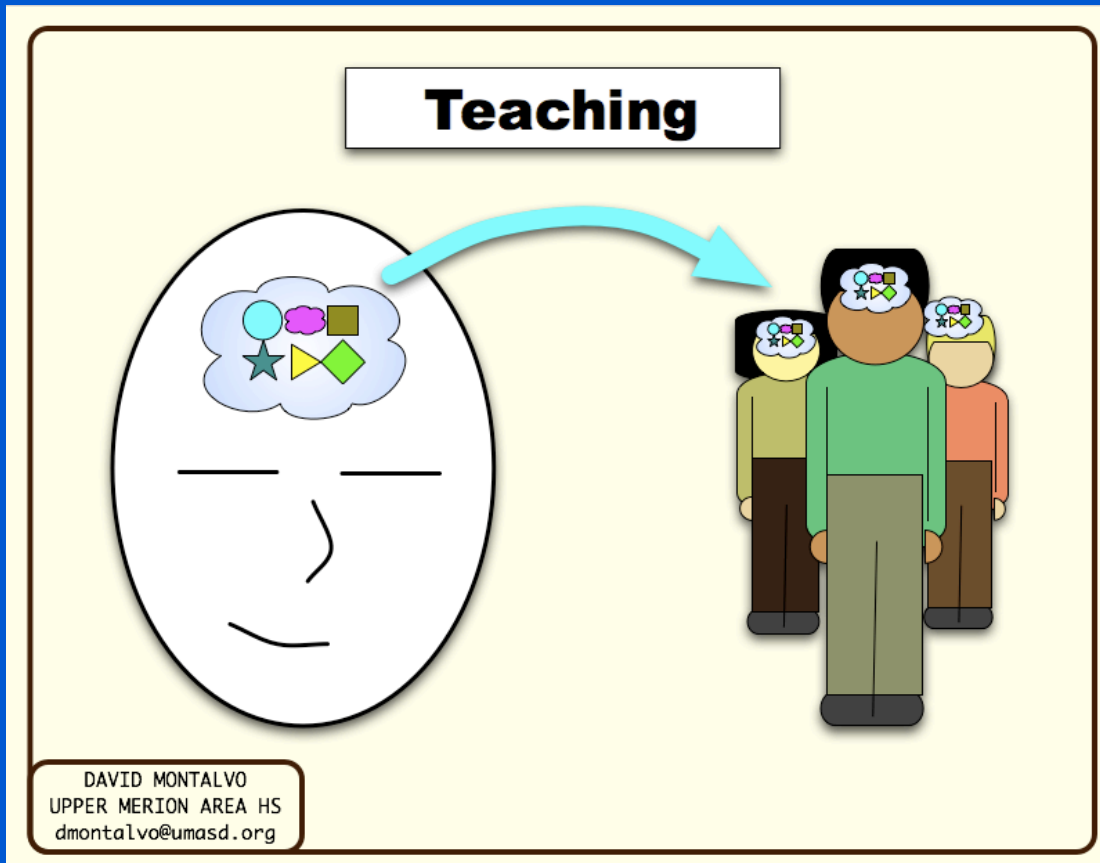
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Teaching



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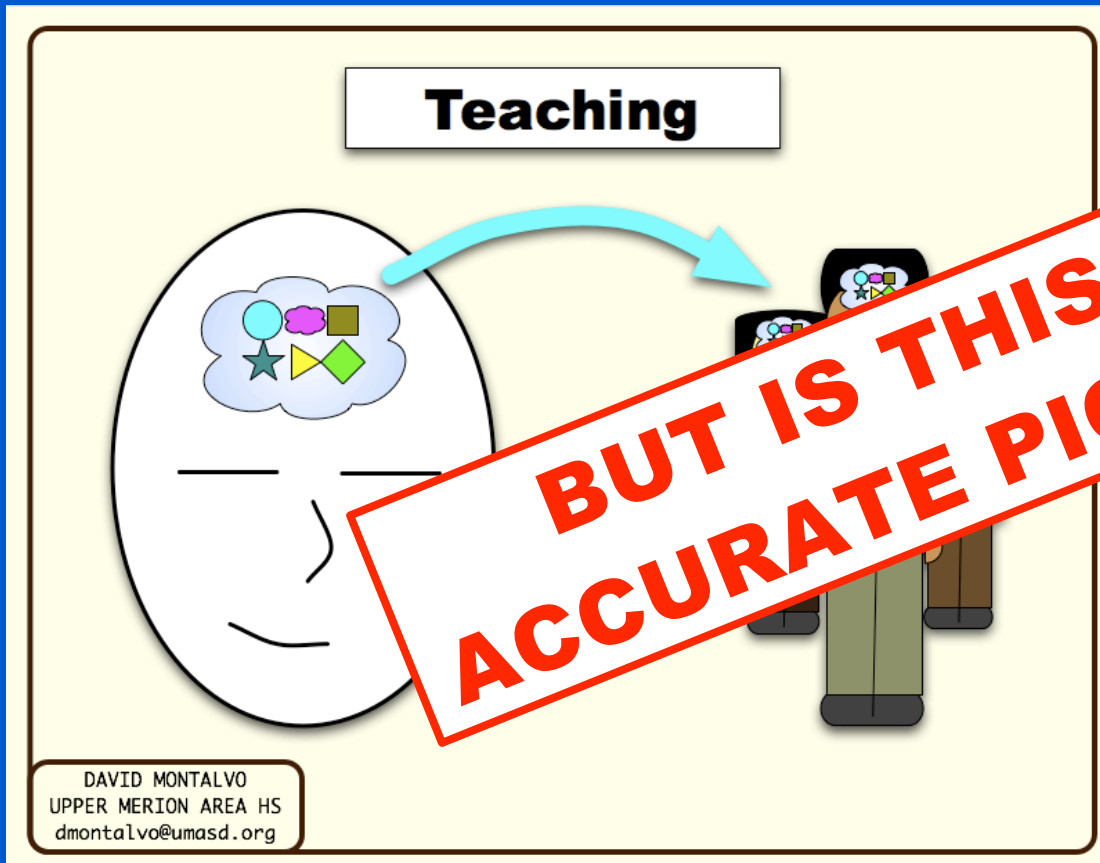
AS TEACHERS, WE ASSUME...



- WE KNOW CONTENT
- WE CAN TRANSFER THAT CONTENT TO OUR STUDENTS BY PRESENTING IT TO THEM

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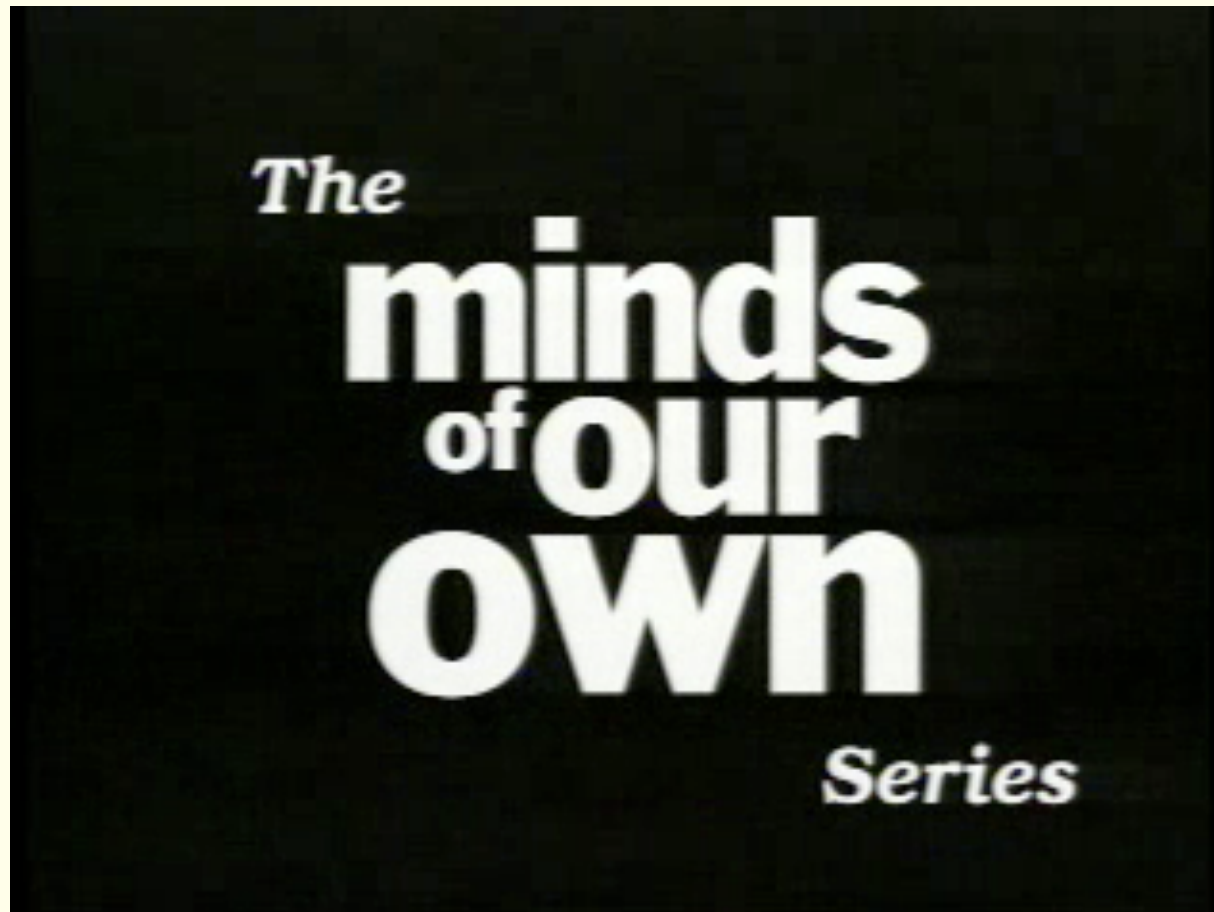
AS TEACHERS, WE ASSUME...



- WE SHOW CONTENT
TRANSFER
CONTENT TO
OUR STUDENTS BY
PRESENTING IT TO
THEM

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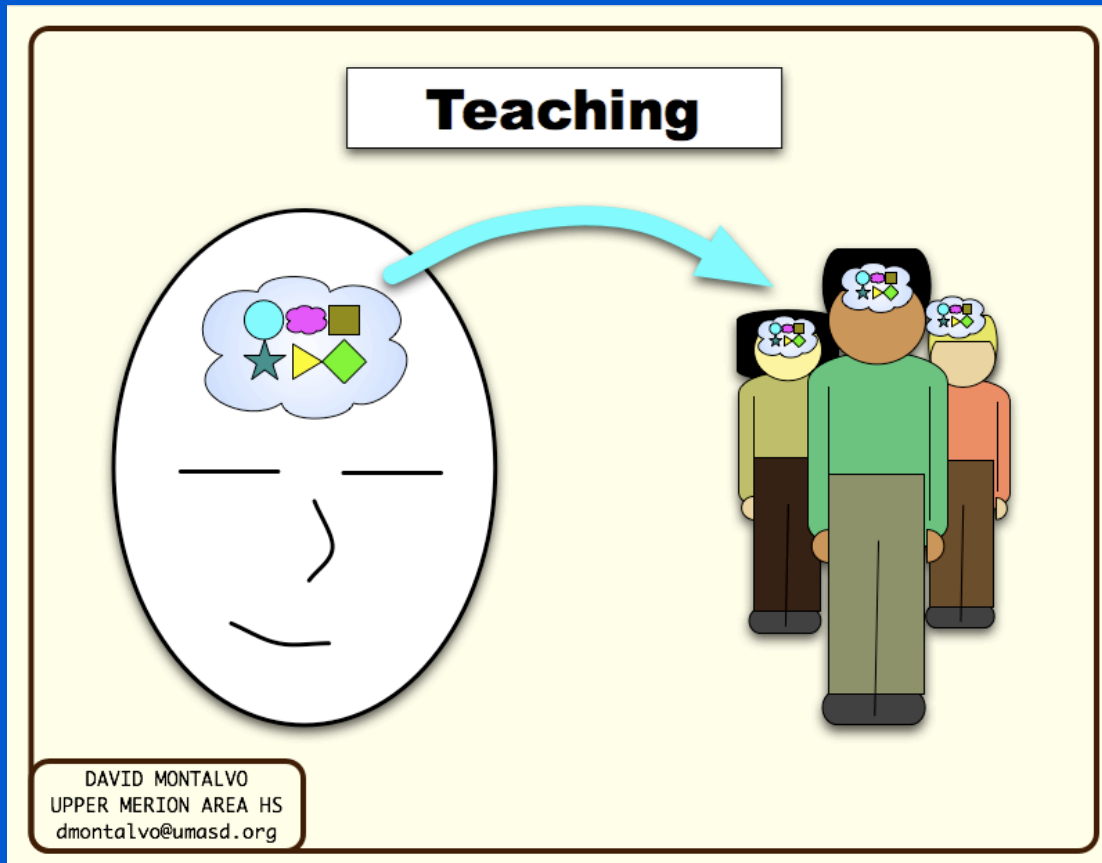
**We present information, but
are they really getting it?**



Produced by the Harvard-Smithsonian Center for Astrophysics. 1997.
<http://www.learner.org/resources/series26.html>

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THE PROBLEM WITH THIS PICTURE



- IT'S NOT A SIMPLE TRANSFER

- HOW CAN WE ENSURE (AS FAR AS POSSIBLE) THAT THEY RECEIVE THE CONTENT?



photo credit: pyramis on Flickr
<http://www.flickr.com/photos/mindmob/313845896/>

To create illusions is to engage in disinformation design, to corrupt optical information, to deceive the audience.

Thus the strategies of magic suggest what not to do if our goal is truth-telling rather than illusion-making.

- Edward Tufte, Visual Explanations
(Cheshire, CT: Graphics Press, 2005)

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Magic



David Copperfield Illusion DVD 2000

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MAGIC - THE OPPOSITE OF TEACHING

- DON'T TELL THEM WHAT YOU'RE DOING OR WHY

- ERASE ALL CONTEXT

- THINGS COME OUT OF NOWHERE

- DON'T REPEAT

- DON'T ALLOW TIME FOR REFLECTION

- DON'T ADJUST BASED ON AUDIENCE FEEDBACK

Magic



David Copperfield Illusion DVD 2000

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Several of the classic texts of magic advocate two primary principles for successful illusion-making, suppressing context and preventing reflective analysis.

[...]

These techniques of disinformation design, when reversed, reinforce strategies of presentation used by good teachers.

- Edward Tufte, Visual Explanations
(Cheshire, CT: Graphics Press, 2005)

MAGIC - THE OPPOSITE OF TEACHING

- TELL THEM WHAT
YOU'RE DOING AND WHY

- GIVE CONTEXT

- TELL A STORY (SEGUE)

- REPEAT YOURSELF

- ALLOW TIME FOR
REFLECTION

- COLLECT & USE
AUDIENCE FEEDBACK

Magic

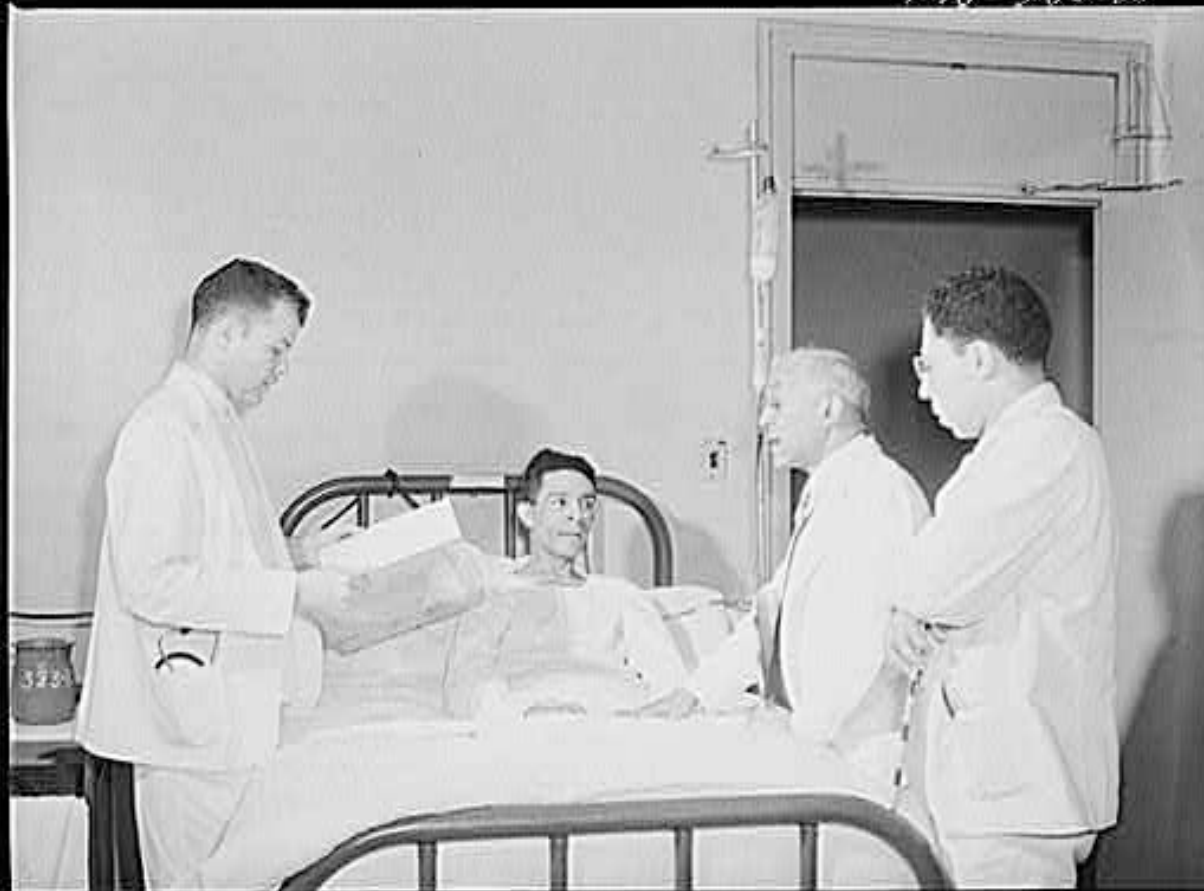


David Copperfield Illusion DVD 2000

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Think about what goes into a good health care experience...



Photographer: Jack Delano Digital ID: fsa 8d03060

Source: digital file from intermediary roll film Reproduction Number: LC-USW3-000580-D (b&w film neg.)

Repository: Library of Congress Prints and Photographs Division Washington, D.C. 20540

<http://hdl.loc.gov/loc.pnp/pp.print>

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TELL THEM WHAT YOU'RE DOING AND WHY

**Think about what goes into a
good health care experience...**



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**- SHARE YOUR TEACHING
STRATEGIES**

**- TELL THEM WHY YOU
DO IT THE WAY YOU DO**

**- TELL THEM ABOUT
PAST EXPERIENCES WITH
STUDENTS**

**- IF YOU'VE CHANGED
THE WAY YOU DO
THINGS, TELL THEM**

Give context



Delaware Ave, Philadelphia, PA in 1905
Source: Phillyhistory.org

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GIVE CONTEXT

- THE POWER OF THE DATA PROJECTOR IS IN VISUALS & BIG, BOLD IDEAS

- THEY'VE ONLY WALKED THE PLANET 14-18 YRS;
THEY HAVE NO CONTEXT FOR MUCH OF WHAT WE TALK ABOUT

- GIVE THEIR IMAGINATION SOMETHING TO CHEW ON

- MULTIMEDIA PRESENTATION VS INTERACTIVE LEARNING

Give context



Delaware Ave, Philadelphia, PA 1905
Source: Phillyhistory.org

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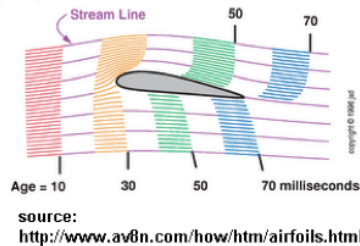
ABOUT PRESENTATION SLIDES...

Why Airfoils Work

The truth is that the 3rd Law of Motion and the Bernoulli Effect are both relevant.

It is true that air is forced down (downwash), but this is mostly due to a speeding up of the air on top of the wing, which is a Bernoulli Effect phenomenon.

The effect is so pronounced, that air passing over the wing actually passes around the wing in a shorter time than air passing under the wing.



Source: me

Science Misconceptions Power Point, 2005

- THE PROBLEM OF BULLETS

- "I WON'T INSULT YOU BY READING THE SLIDE..."

- IS WHAT'S ON THE SLIDE FOR YOU OR FOR YOUR AUDIENCE?

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Stories grab people

Ira Glass on Storytelling #1



<http://www.youtube.com/watch?v=n7KQ4vkiNUk>

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TELL A STORY; USE SEGUES

- THE HUMAN MIND IS ADAPTED TO STORIES

Stories grab people



<http://www.youtube.com/watch?v=n7KQ4vkiNUk>

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- USE ANECDOTES

- PERSONAL STORIES WORK WELL

- THINK ABOUT THE BIG (YEAR-LONG) STORY OF WHAT YOU TEACH

- SEGUE, NOT "ONE DAMN THING AFTER ANOTHER"

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Why you should repeat yourself

Ever had a student ask a question that you just answered, not five seconds ago?

Of course, we all admit that no one (not even teachers) could possibly pay attention 100% of a 48 minute period. But that automatically means that at any given time, there is a chance that someone is not paying attention.

Go ahead --- try what you think are reasonable numbers and see what happens.

The moral of the story is that if teachers are going to lecture, they should expect to repeat themselves!

USE WHOLE NUMBERS, PLEASE

On average, each student pays attention % of the time
(with no decay, slow decay, or rapid decay.)

Size of class:

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Last modified 21 Feb 2009

Who's Paying Attention?



Expected average number of students not paying attention at any given moment:

Actual number of students not paying attention right now:

<http://www.mrmont.com/teachers/attentionindex.html>

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Content Indigestion



I was an ingenious and resourceful teacher, clever about thinking up lesson plans and demonstrations and motivating devices[...] And I only very slowly and painfully - believe me, painfully - learned that when I started teaching less, the children started learning more.

- John Holt Learning All the Time
(Reading, MA: Perseus Books, 1989)

Taking time to reflect and engage material would only slow students down and adversely affect grades.

- Denise Pope Doing School
(Yale University Press, 2003)

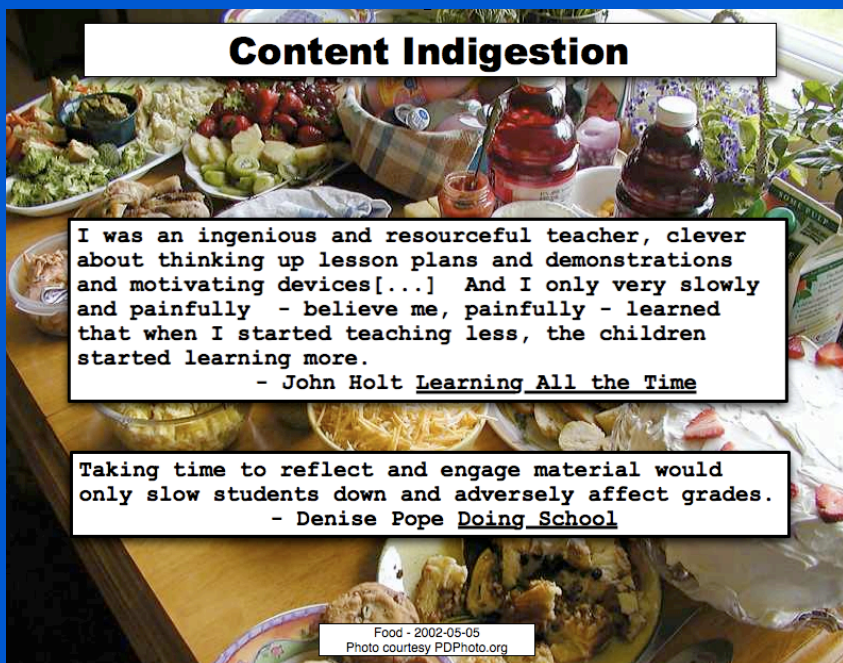
Content Indigestion



Food - 2002-05-05
Photo courtesy PDPhoto.org

TAKE TIME TO REFLECT

- **SMALL SCALE:**
STUDENTS TAKE NOTES



- **TAKING NOTES IS HELPFUL (DON'T HAND OUT COMPLETE NOTES)**

E Cohn, S Cohn, & J Bradley Jr. "Notetaking, Working Memory, and Learning in Principles of Economics" Journal of Economic Education Fall 1995.

G S Thomas, "Use of Student Notes and Lecture Summaries as Study Guides for Recall" Journal of Educational Research July-August 1978.

- **LARGE SCALE:**
INCORPORATE, NOT REVIEW ACTIVITIES, BUT DIGESTING ACTIVITIES

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Regulating instruction based on student feedback



Dylan William

PDE School Talk: Smart Investment

linked at: <http://www.portal.state.pa.us/portal/server.pt?open=512&objID=4228&&PageID=440536&mode=2>

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COLLECT & USE STUDENT FEEDBACK

- **CREATE STUDENT ENGAGEMENT**

- **ELECTRONIC CLICKERS, CARDS, WHITEBOARDS, QUIA**

- **DIAGNOSTIC QUESTIONS**

- **USE THEIR ANSWERS TO DECIDE WHICH TO DO:**

(1) GO ON

(2) RE-TEACH

(3) TEACHABLE MOMENT

Regulating instruction based on student feedback



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