



Now I see it!

Data displays as powerful feedback

Tara Richerson
ASCD Annual Conference
March 23, 2015



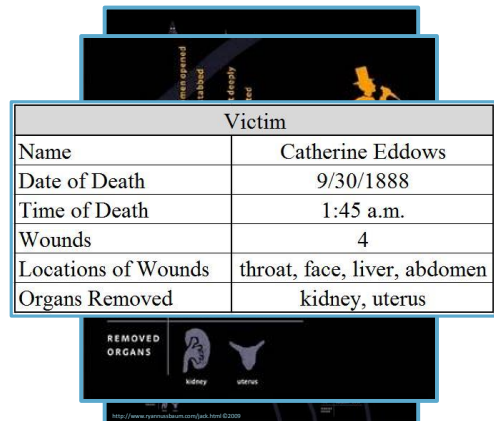
Session Goals

- Identify best practices for visual communication that increase student achievement.
- Select tools and strategies to connect feedback and goal-setting.

SPACE
taken by 60 people





<http://www.flickr.com/photos/kenwheeler/134203344/>



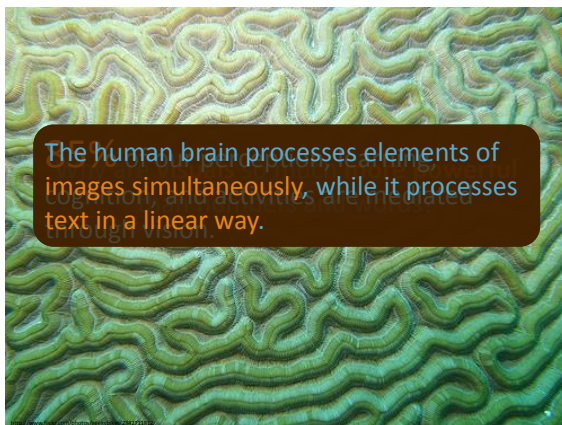
Victim	
Name	Catherine Eddows
Date of Death	9/30/1888
Time of Death	1:45 a.m.
Wounds	4
Locations of Wounds	throat, face, liver, abdomen
Organs Removed	kidney, uterus

REMOVED ORGANS



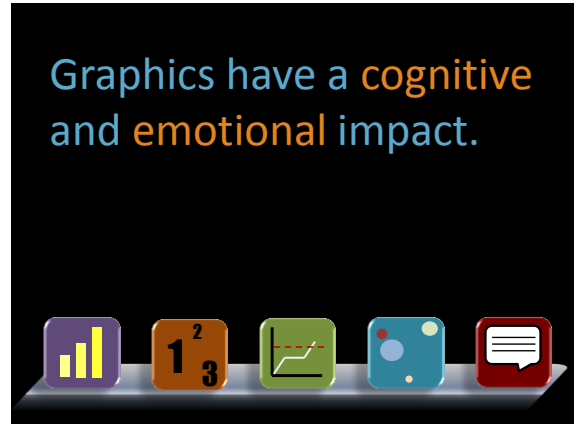
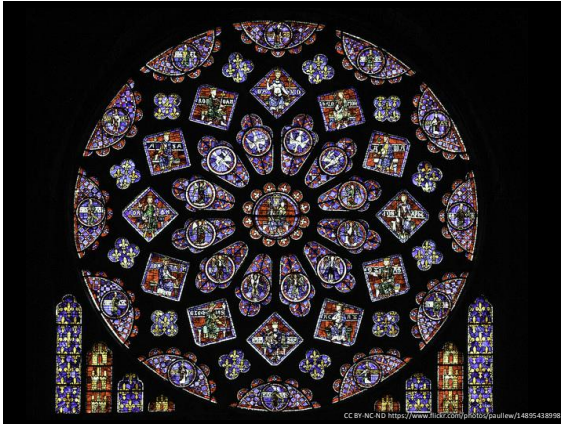
kidney uterus

<http://www.gynmuse.com/ask/ask.html>

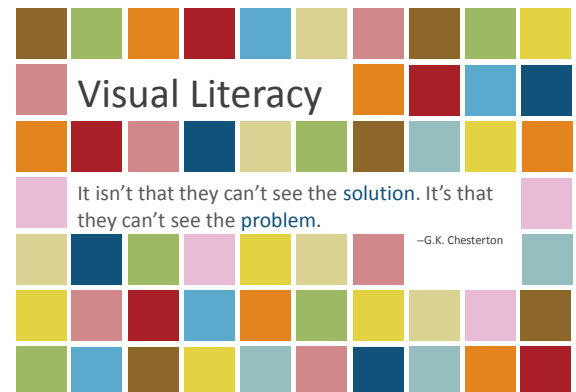


The human brain processes elements of images simultaneously, while it processes text in a linear way.





		LS1: Cell Energetics					
		Section Review 9.7	Cell Energetics Lab	Homework	Graphic Organizer	Cell Energetics Project	Review
Anderson	Michael	3	2	2	2	3	2
Chan	Grant	3	2	3	3	1	2
Click	Robert	1	2	2	3	3	4
Intiman	Laura	3	3	3	3	1	2
Judge	Brandon	3	1	1	2	3	4
Moore	Marcy	3	1	2	3	2	2
Stockton	Nancy	1	1	2	3	2	1
Trujillo	Juan	3	1	1	2	3	1
Vargas	Anna	1	1	1	2	3	2
Zimmerman	Amber	3	1	3	3	1	2



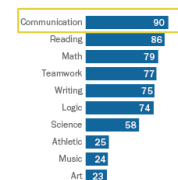
Visual communication skills

Visual thinking is the language for anyone who wants to **make a difference** in the 21st century.

— David Sibbet

The Skills to Succeed

% saying ___ skills are most important for children to get ahead in the world today



Source: American Trends Panel, Sept. 9 - Oct. 3, 2014. N= 3,154

PEW RESEARCH CENTER

<http://www.pewresearch.org/fact-tank/2015/02/18/skills-for-success/>

Visual communication skills

Reading

Integration of Knowledge and Ideas

- Integrate and evaluate content presented in diverse media and formats, including visually and quantitatively, as well as in words.

Speaking & Listening

Presentation of Knowledge and Ideas

- Make strategic use of digital media and visual displays of data to express information and enhance understanding of presentations.



Jennifer Orr
@jenorr



Following

Working on graphing: comparing hamster and fish on graph. Which one has more? Hamster. How many more? Dog. (I now want to cry.)



FAVORITES

2



5:23 PM - 27 May 2014

<https://twitter.com/jenorr/status/471446701279309826>

Visual communication skills

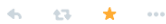


Jennifer Orr
@jenorr



Following

More graphing problems: choose two of your categories. Picks fish and dog. Which has more? Hamster. (I may need a glass of wine.)



FAVORITES

2



5:43 PM - 27 May 2014

<https://twitter.com/jenorr/status/471451578533437440>



Turn and talk

- What are your **successes and challenges** with visual communication among your peers or students?
- How do you **provide feedback** to your students, peers, or self?

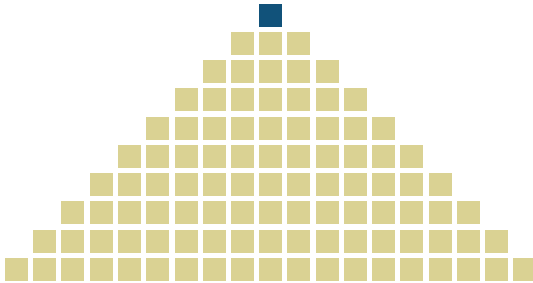
Feedback

We are usually convinced more easily by **reasons** we have found ourselves than by those which have occurred to others.

—Blaise Pascal

The most **powerful** single modification that enhances achievement is **feedback**.*

—Hattie, 1992



Impact of Feedback on Achievement

Type of feedback	% Effect
Apply a rule (intervention)	32
Display results graphically	26
Explain correct answer	20
Repeat instruction until students successful	20
Grading criteria understood by students	16
Provide correct answer	8.5
Mark answers wrong	-3

Fuchs and Fuchs, 1986

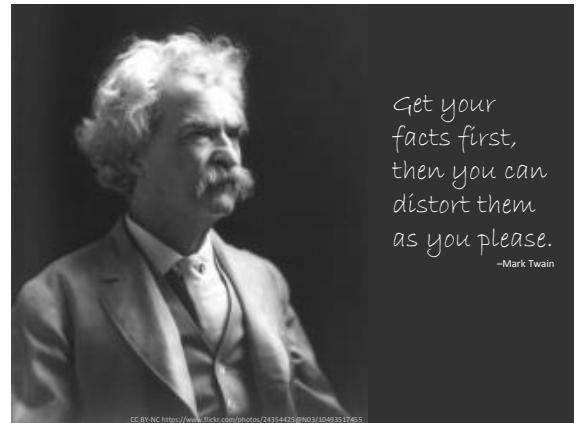
Strategies for visual feedback

Teachers

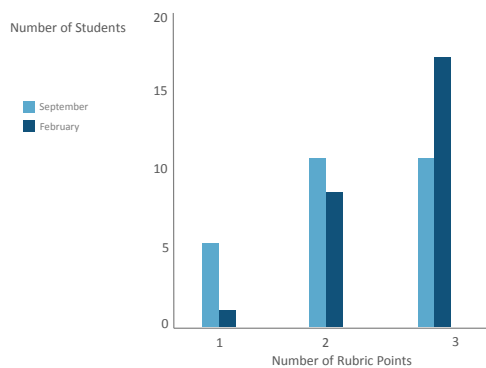
- Data tools and exploration
- Roster with targets
- Folder with sticky notes

Students

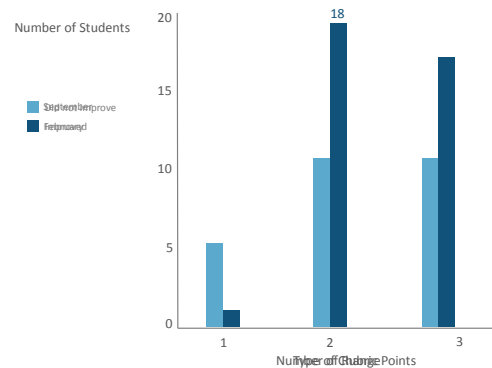
- Graphic organizers (K-W-H-L)
- Google sheets
- Record-keeping using laminated sheets with velcro dots or paper copies



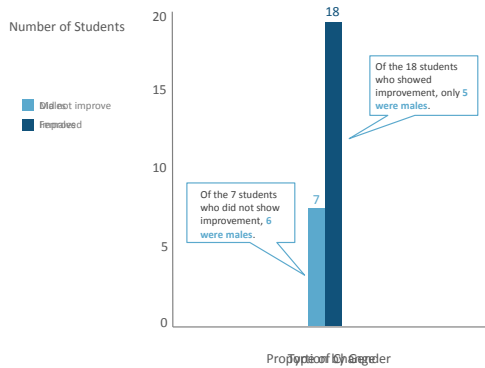
Graphic representation of feedback



Graphic representation of feedback



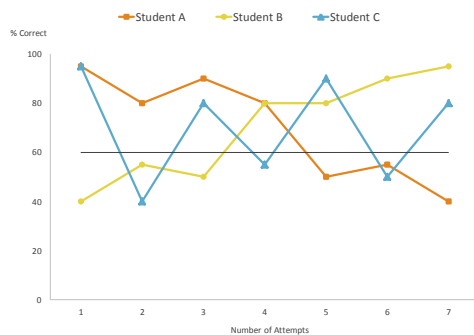
Graphic representation of feedback



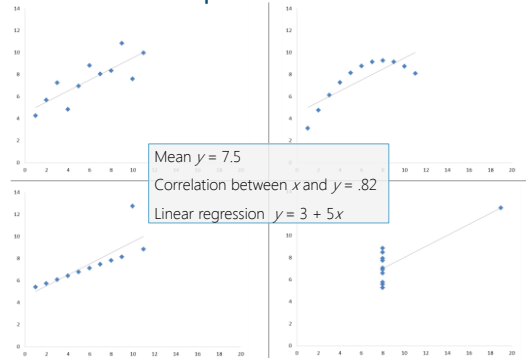
Can one snapshot...

tell the whole story?

Who packs your parachute?



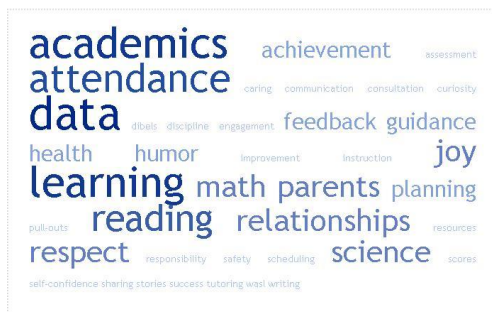
Anscombe's quartet



What happens?



What matters?



What matters most?



Students appear to be especially vulnerable to teacher feedback about their ability

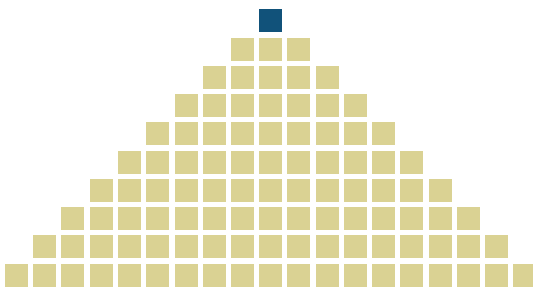
and need help in drawing linkages between their performance and how and what they studied.

—McMillan & Workman, 1998

The most powerful single modification that enhances achievement is feedback.*

a goal set by

—Hattie, 2008



Effective use of feedback



begins with a question

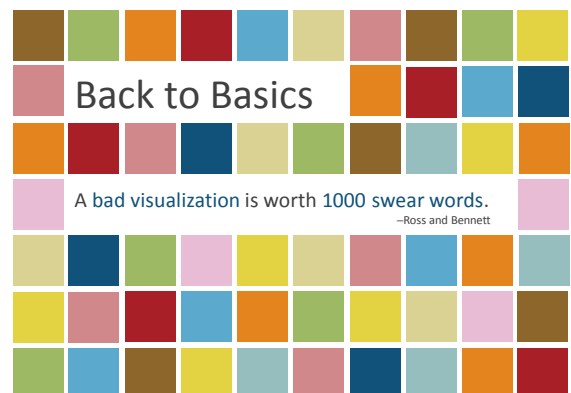
CC BY-NC-SA <https://www.flickr.com/photos/gongli/5063818469>

Theory of action

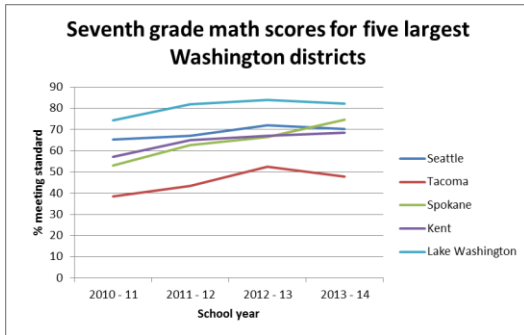
If visual communication is critical...

and graphic representations of feedback have a significant affect on student learning...

then we must pay attention to our visual literacy skills.



What do you see?



Tell your story

Comparison

Groups or periods of time



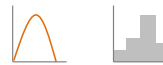
Part-to-Whole

Difference or proportion



Distribution

Understand a population



Relationship

Patterns and outliers



Where the magic happens



Not so much...



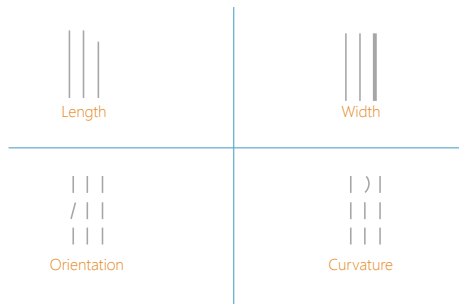
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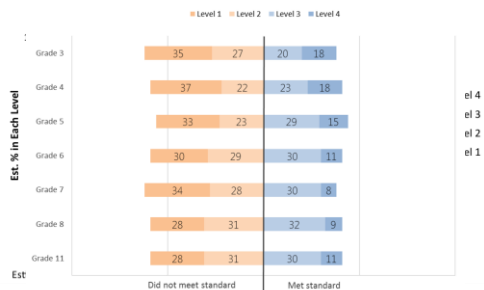
<http://www.flickr.com/photos/jonrobby/1080319147>

Pre-attentive attributes: Form

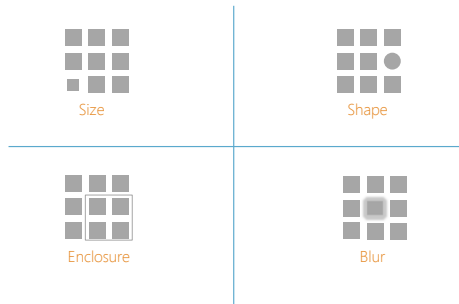


We see length more accurately

Estimated percentage of students scoring at each achievement level for English language arts



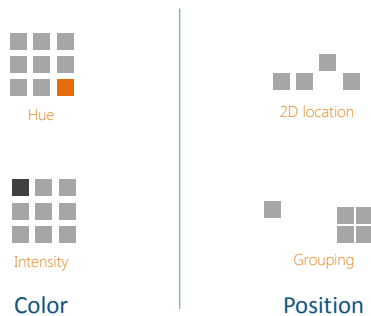
Pre-attentive attributes: Form



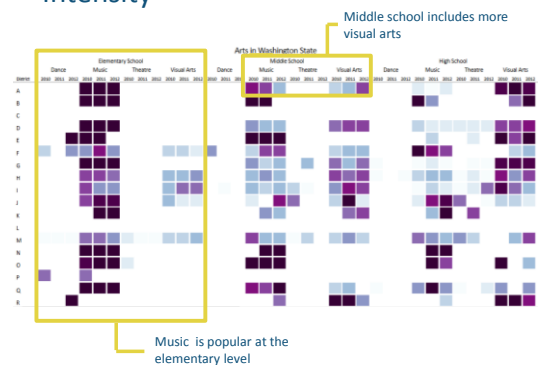
Reduce your data-to-ink ratio

Student	Item Number				
Student	1	2	3	4	5
Anderson, Melanie	1	0	0	0	0
Dalton, Craig	1	1	1	0	0
Gallego, Peter	1	1	1	1	1
Herrera, Sylvia	1	1	0	1	0
LaCrosse, Martin	1	1	1	0	0
Peterson, Michelle	1	0	1	1	0
Sanders, Karen	0	0	0	0	0
Walters, Darren	0	1	1	0	0
Wu, Alice	1	1	0	0	0

Pre-attentive attributes



Intensity



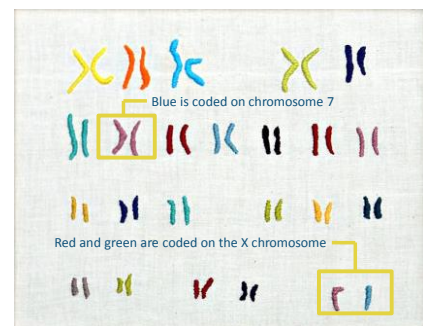
What colors are this dress?



Our brain uses environmental cues



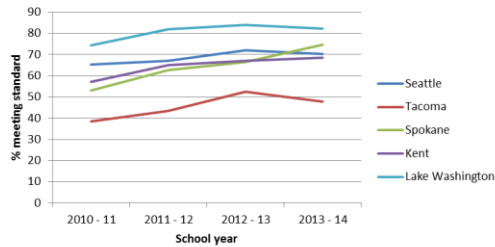
Color perception starts small



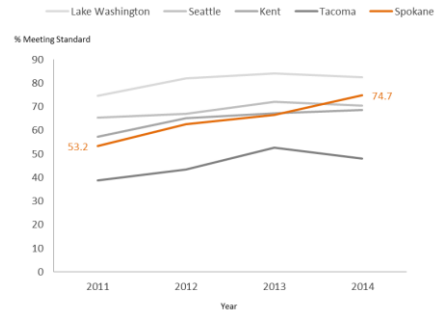
CC BY https://www.flickr.com/photos/hey_gau/7611617022

What do you see?

Seventh grade math scores for five largest Washington districts



Since 2011, 7th grade students in **Spokane** have made consistent gains on the Washington state math assessment compared to the other four largest districts.



Session Goals

- Identify best practices for visual communication that increase student achievement.
- Select tools and strategies to connect feedback and goal-setting.



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<http://blog.whatslikeontheinside.com>
<http://excellforeducators.blogspot.com>



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