150K+ students per class: MOOCs, students, & learning

How to understand what's happening in online learning

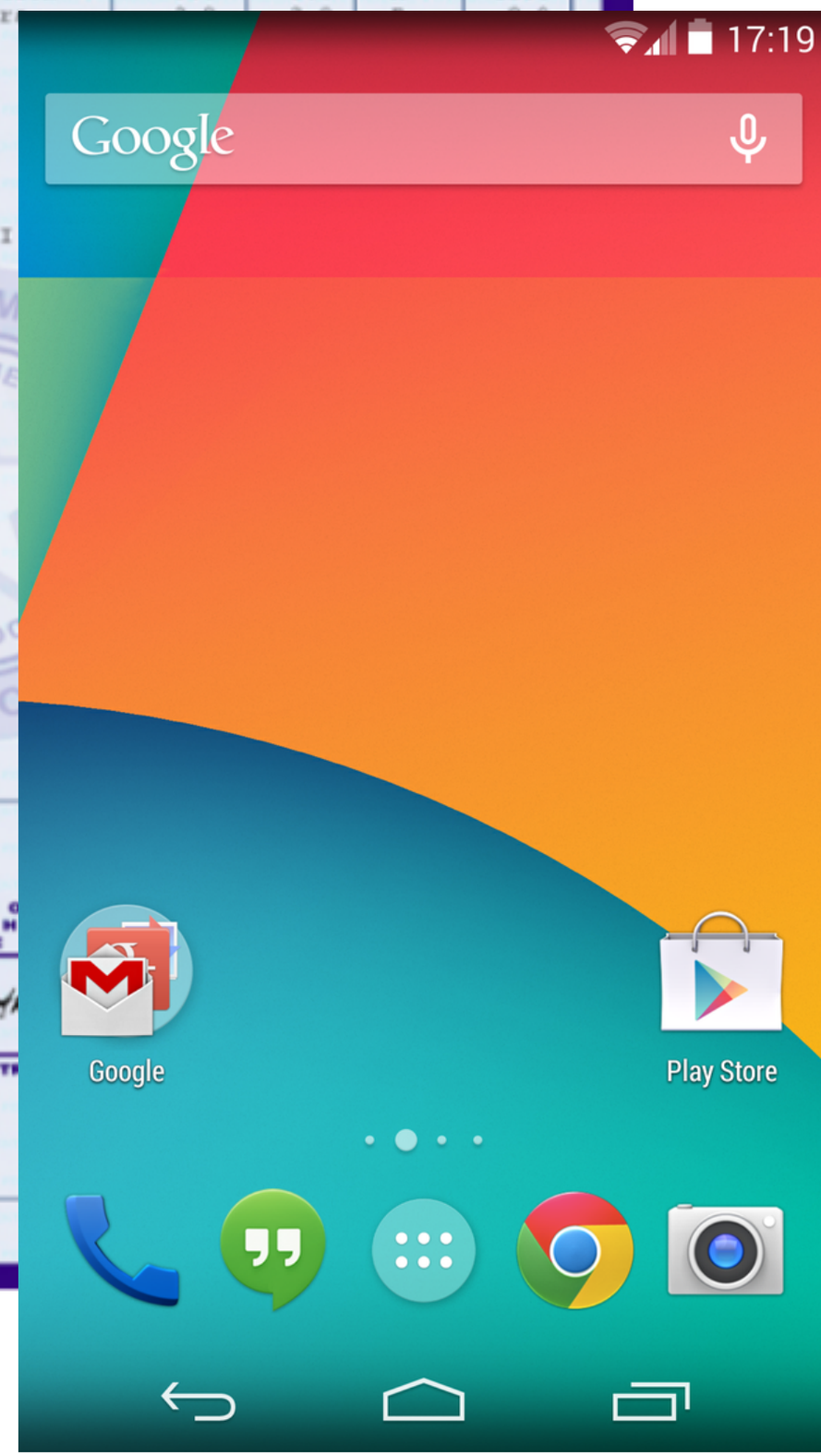
Daniel M. Russell, Google

July, 2014

"You can observe a lot just by watching."

Yogi Berra

10 bits / semester



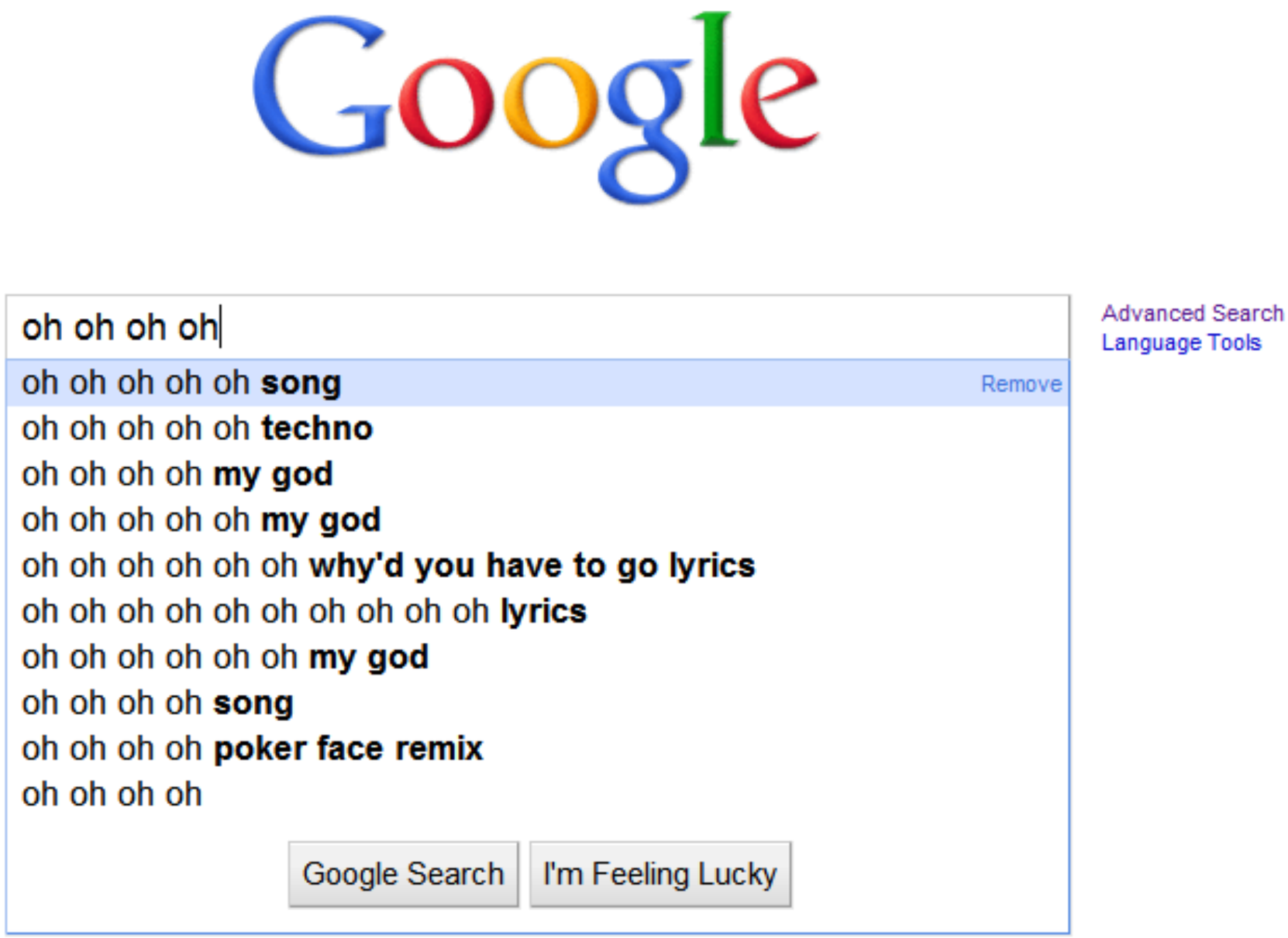
192k bits / second

The evolution of asking questions…

A story about what you can ask…

The crowd chants wildly along with a piece of music. Unfortunately, there are no words. How do you find the music?

How do you search for something like this?



What can you **query / ask** about?

My son didn't know that
[oh oh oh oh] was a crazy query

Diagnosis: I was ***functionally fixated***

He was lucky…
… and now it's a strategy:
look for texts of other people with the same question

Finding text on a page

- Fundamental online reading skill
  - Control-F / CMD-F / Edit>Find>
  - Lets you find a piece of text in an online document very quickly


esc
delete
tab
Q W E R T Y U I O P
caps lock
A S D F G H J K L
enter
return
shift
Z X C B N M
shift
fn
control
alt
option
command
command
alt
option


Esc
F1
F2
F3
F4
F5
F6
F7
F8
F9
F10
F11
F12
PrtSc
ScrLk
Pause
Insert
Home
PgUp
Delete
End
PgDn
Backspace
Tab
CapsLk
Enter
Shift
Fn
Ctrl
Alt

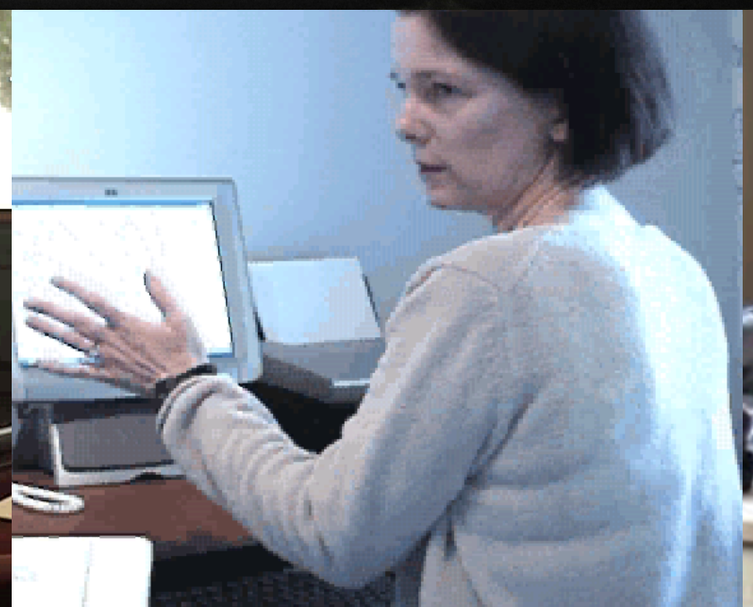
PLACE	DIV PL /TOTAL	NAME	AGE	S	TOWN	TIME	PACE /MILE
1	1/27	WILLIAM MATEKER	22	M	STANFORD	24:34	4:57
2	1/41	J.T. SERVICE	30	M	SAN FRANCISCO	25:17	5:06
3	2/41	KEVIN PIERPOINT	35	M	CAMPBELL	25:21	5:06
4	2/27	OEYVIND SUNDBY	27	M	STANFORD	26:00	5:14
5	3/27	DALE TAYLOR	22	M	MOUNTAIN VIEW	26:14	5:17
6	3/41	NICK MACFALLS	37	M	SAN FRANCISCO	26:52	5:25
7	1/20	JOSH NEWBY	18	M	PALO ALTO	27:33	5:33
8	4/41	MATT TOMPKINS	35	M	MOUNTAIN VIEW	27:36	5:33
9	1/62	RACHEL BOOTH	30	F	MOUNTAIN VIEW	27:47	5:36
10	5/41	STEFANO PROFUMO	33	M	SANTA CRUZ	28:02	5:39
11	1/39	CHANTELLE WILDER	25	F	LOS GATOS	28:06	5:40
12	2/20	MICHAEL UNDERWOOD	16	M	PALO ALTO	28:23	5:43
13	4/27	DAVID TOBIN	22	M	STANFORD	28:34	5:45
14	1/75	SEAN SELEY	46	M	LOS ALTOS HILLS	28:44	5:47
15	2/75	DAVID DEGUSTA	41	M	HAYWARD	28:56	5:50
16	2/62	SUZANNE SEGESTRA	39	F	REDWOOD CITY	29:05	5:51
17	3/75	ANDREW CREWS	41	M	SUNNYVALE	29:10	5:53
18	2/39	LINDSEY MACLISE	27	F	SAN FRANCISCO	29:21	5:55
19	3/39	ASHLEY CARROLL	28	F	MENLO PARK	29:25	5:56
20	4/75	DAVID GOMNZALES	46	M	BOULDER CREEK	29:26	5:56
21	5/75	ADAM PRINCE	47	M	SANTA CLARA	29:32	5:57
22	6/41	ANTONIO ALUNNI	36	M	MOUNTAIN VIEW	29:41	5:59
23	6/75	MARC OSTROWSKI	47	M	SAN JOSE	29:42	5:59
24	5/27	BENJAMIN KALLMAN	22	M	STANFORD	29:53	6:01
25	4/39	CAROLINE MULLEN	25	F	STANFORD	29:55	6:01
26	3/62	DINA ROSENTHAL	39	F	SAN JOSE	29:56	6:02
27	7/75	CHARLES ALEXANDER	47	M	MOUNTAIN VIEW	29:59	6:02
28	8/75	AHMET GOKCEK	43	M	PALO ALTO	29:59	6:02
29	1/71	VERITY BREEN	44	F	BURLINGAME	30:08	6:04
30	4/62	SARA GIGLIOTTI	36	F	SAN FRANCISCO	30:19	6:06
31	6/27	ABRAHIM EL GAMAL	23	M	PALO ALTO	30:27	6:08
32	9/75	DERRICK PETERMAN	43	M	BELMONT	30:29	6:08
33	7/27	FRANCISCO CONTRERAS	28	M	MENLO PARK	30:33	6:09
34	1/37	CLAY BULLWINKEL	53	M	PORTOLA VALLEY	30:34	6:09
35	5/62	MARISA BECK	33	F	SAN JOSE	30:38	6:10
36	7/41	JONATHAN LEE	36	M	SUNNYVALE	30:40	6:11
37	10/75	JEFF WATT	49	M	PALO ALTO	30:43	6:11
38	5/39	CLAIRE SHAW	20	F	STANFORD	30:57	6:14
39	3/20	ERIC KOFMAN	19	M	STANFORD	31:02	6:15
40	11/75	KEN CAMET	49	M	SAN JOSE	31:11	6:17
41	12/75	PATRICK JENNY	45	M	PALO ALTO	31:21	6:19
42	13/75	GARY MEEKER	42	M	SAN JOSE	31:22	6:19
43	1/10	ALEC OLSLUND	12	M	MOUNTAIN VIEW	31:35	6:22
44	2/71	SHANNON CODY	41	F	REDWOOD CITY	31:38	6:22
45		UNOFFICIAL		M		31:43	6:23
46	8/27	FRANK CHEN	23	M	STANFORD	31:53	6:25
47	4/20	IAN BALL	17	M	STANFORD	31:55	6:26
48	1/16	ARTURO RODRIGUEZ	61	M	PALO ALTO	31:57	6:26
49	14/75	FREDERIC GARDERES	41	M	PALO ALTO	32:00	6:27
50	9/27	BENJAMIN FLAMM	23	M	PALO ALTO	32:07	6:28
51	15/75	GEORGE REHMET	44	M	DALY CITY	32:10	6:29
52	10/27	ERIC BU[illegible]	23	M	LOS ALTOS	32:15	[illegible]
[illegible]	11/[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

- Find how long Beth Assuange took to run this race.

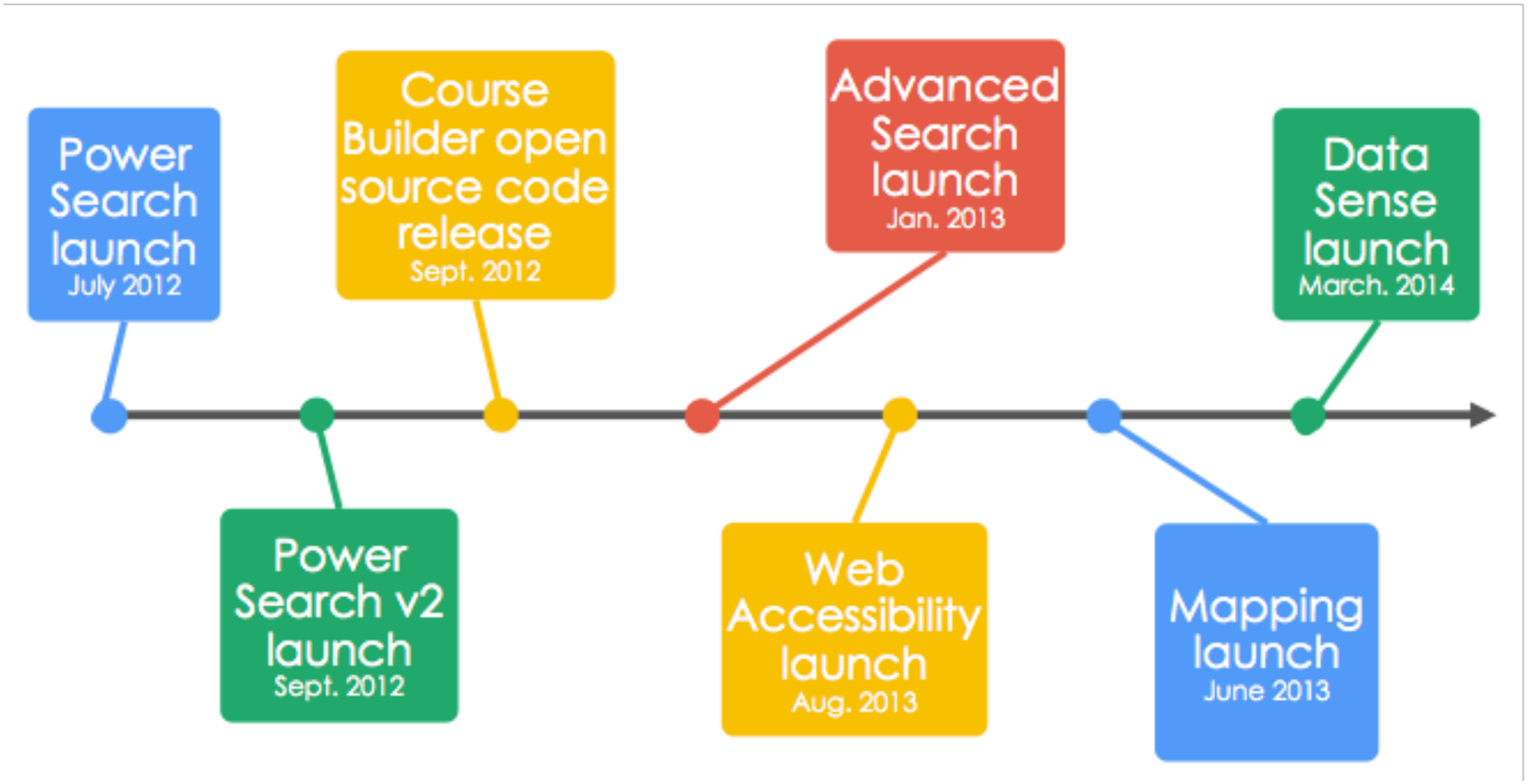
Study: How many people know Control-F?

- Survey of 2,225 US-English internet users:
  - 90.5% do **NOT** know how to "find" on a page
- Survey of 545 US-English internet using teachers:
  - 51.1% do **NOT** know how to "find" on a page
- Analysis of over 50K Firefox users (worldwide):
  - 93% have **NEVER** used the "find" command on a page


EXIT



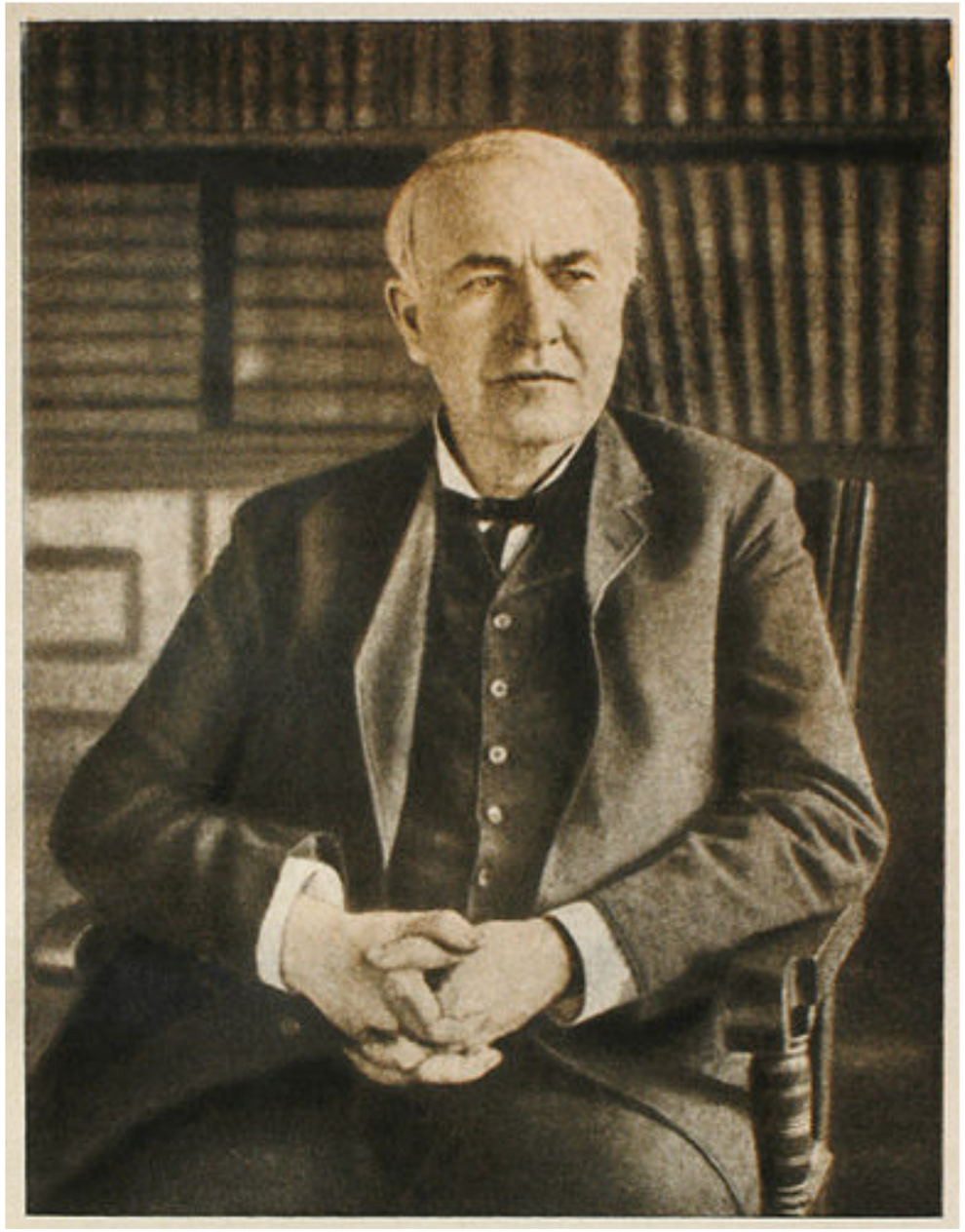

A.Le Coq


Power Search launch
July 2012
Course Builder open source code release
Sept. 2012
Advanced Search launch
Jan. 2013
Data Sense launch
March. 2014
Power Search v2 launch
Sept. 2012
Web Accessibility launch
Aug. 2013
Mapping launch
June 2013

	when	registered	Did-something rate (students**)	satisfaction (1-5)
Power Searching v1	July '12	154k	54%	4.43
Power Searching v2	Sept. '12	124k	**65%**	4.51
Advanced Power Searching	Jan. '13	38k	42%	4.57*
ping with Google	June '13	41k	24%	4.51*
YouTube Creator Academy	June '13	40k	45%	4.40*
Analytics Academy	Sept. '13	147k	33%	4.19*
Web Accessibility	Sept. '13	5k	19%	4.40*

**Based on survey sent to course completers.*
***Did something in the course besides register.*

“Books will soon be obsolete in the public schools.”
– Thomas A. Edison (1913)



1913 September 14
Cleveland Plain Dealer
Sunday Editorial, p 4, col 2

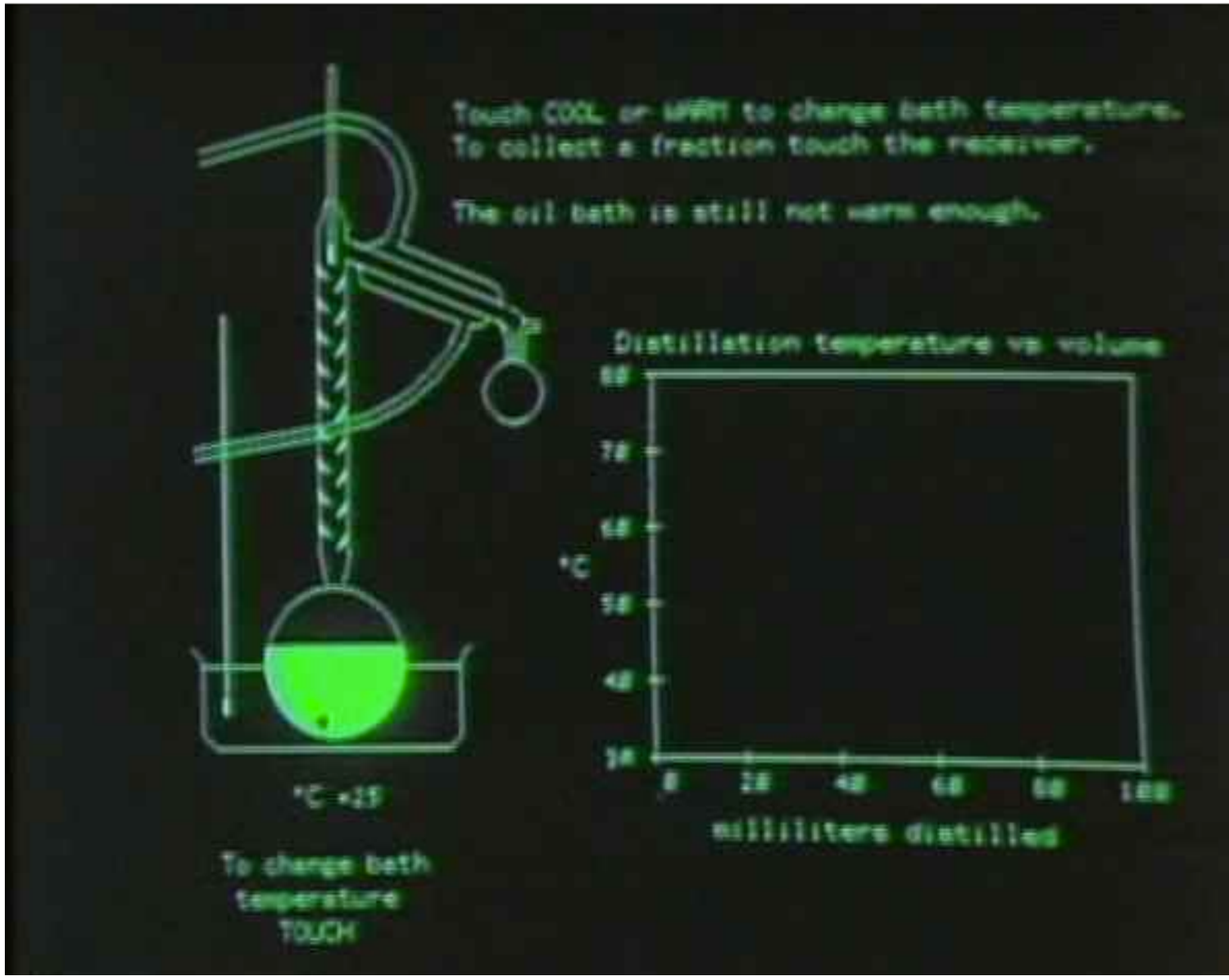
Nothing new here, move along…

A long time ago in a university far, far away…

University of Illinois (1960s)

PLATO

forums, message boards, online testing, e-mail, chat rooms, picture languages, instant messaging, remote screen sharing, multi-player games



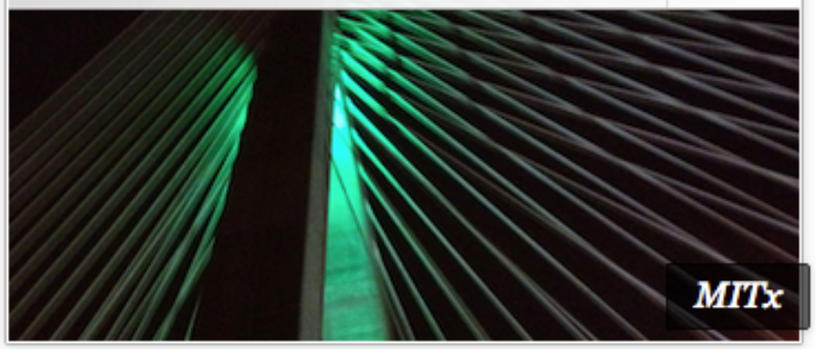
NEW

8.MReV Mechanics ReView

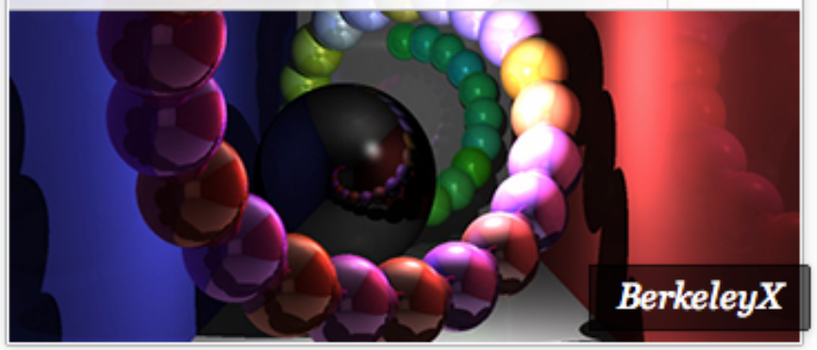
NEW

PH278x Human Health and Global Environmental Change

2.01x Elements of Structures

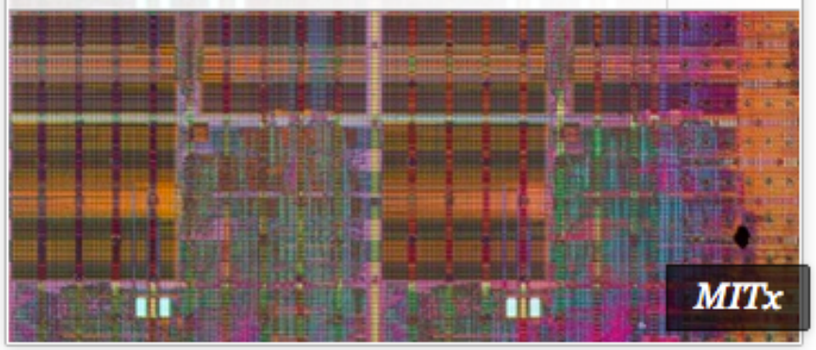


CS184.1x Foundations of Computer Graphics



CS169.1x Software as a Service

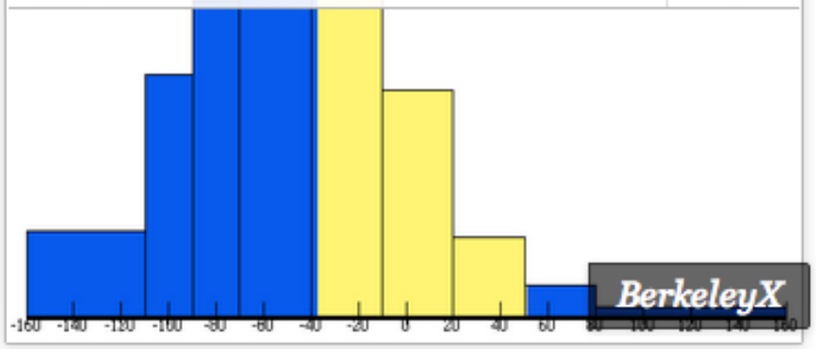
6.002x Circuits and Electronics



CB22x The Ancient Greek Hero

ER22x Justice

Stat2.1x Introduction to Statistics: Descriptive Statistics



Expectations

- **Analytics**: the world debugs your course
- **Near-realtime feedback** loops for adaptive & personalized learning
- **Pervasive formative assessments**
- **Higher leverage of instructor's time** (Bowen 2012, Buckminster Fuller 1971)
- **Massive scale**
- **Low cost / student**
- **We can change the world**

#1: Our first MOOC

July 2012

Power Searching #1: Needs & Goals

- **Needs:**
  - search is easy to use, but many searchers don't take full advantage of the possibilities
  - communicate what's possible to do in search, while keeping the messages of simplicity and sophistication in balance

- **Goals:**
  - **teach** > 20K students how to be better searchers
  - **objective measure:** improve performance by 33% (as measured by standard test)

Our MOOC: Power Searching with Google

Google | Search Education

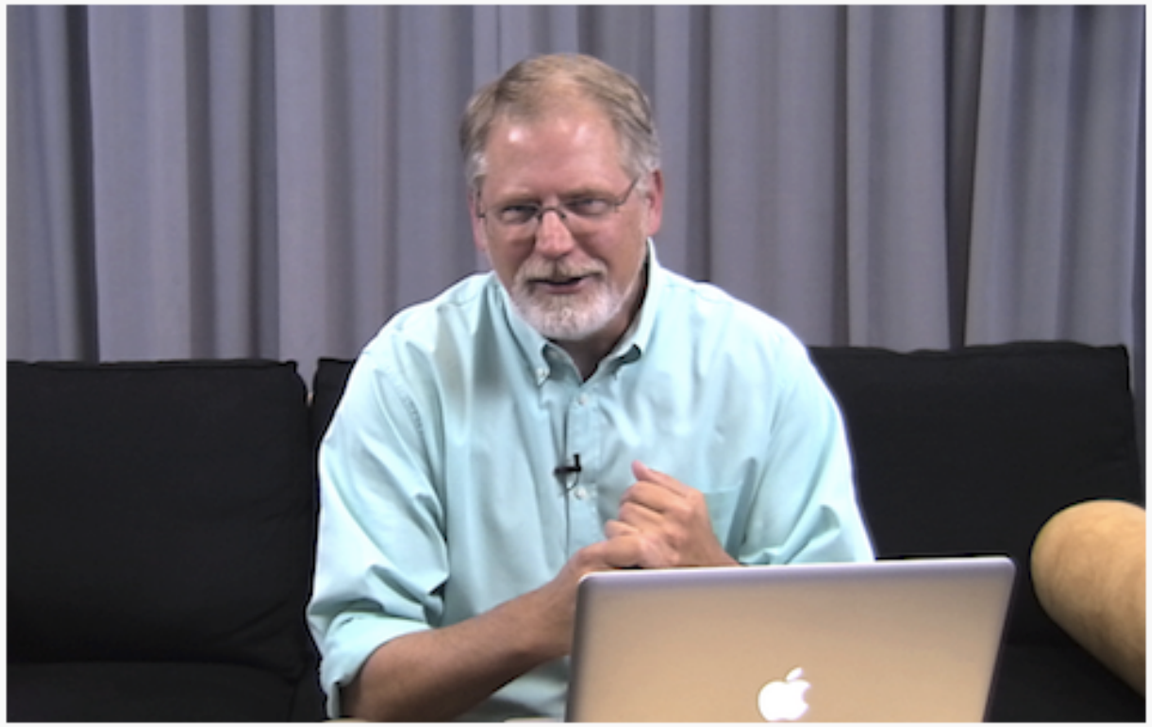
+1 1.2k

Course

Power Searching with Google

Google Search makes it amazingly easy to find information. Come learn about the powerful advanced tools we provide to help you find just the right information when the stakes are high.

Daniel Russell
Senior Research Scientist
Google, Inc.



Schedule

- Class 1 - Introduction
- Class 2 - Interpreting results
- Class 3 - Advanced techniques
- Class 4 - Find facts faster
- Class 5 - Checking your facts

Our MOOC: Power Searching with Google

- Deliver high quality educational experience to a very large number of students
- Short amount of learning time (6 hours / 2 weeks / ~10 hours total)
- *Semi-synchronous*

Activities: 1 – 3 per lesson

Course

Course › Class 4 › Lesson 4 › Activity

Class 4 - Find facts faster

Follow

Lesson 4.4 Activity

Text Version Slides

Search Tips:

- Limit results to sources published during a specific time period by clicking on Search Tools in the left panel, then selecting the appropriate time range.
- Time filters are available in Web Search, Books, Images, News, Videos, Blogs, Discussions, and Patents. Sometimes, in News, you may need to click on the 'Archives' link under the time filters on the left to access the Custom Range option.
- This feature is not available on tablet browsers.

Try this activity to test your ability to restrict time of document publication.

In 1883, a volcano on the island of Krakatoa in Indonesia erupted. The dust from this massive volcano affected weather as far away as the United States. The volcano has recently become active again. Using the query [krakatoa volcano] and the time filter, identify the following pieces of information.

1. Which of these newspaper articles was published in 1883? Remember to search for [krakatoa volcano] and use time filtering.

- Volcano Mystery Solved
- Venus has Volcanic Character
- The Volcano Heard Around the World
- Java's Canopy of Fire: A Volcano's First Effort

Check Answer

Activities often suggest connection w/ Forum

Class 2 - Interpreting results

Lesson 2.5 Activity

Text Version | Slides

Search Tips:

- In the left panel of the search results page, you can filter results by different categories.
- These categories include blogs, discussions, recipes, patents, books, 3D models, scholarly sources, and legal documents.
- The left panel does not appear on tablet computers (iPads and Android devices).

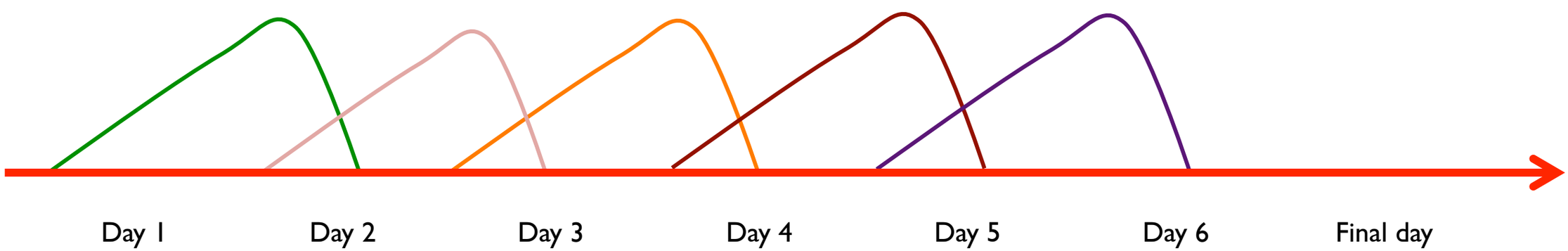
In the video, Dan explored results in different media for the word [cats]. What do you love? Compare the information you find by searching for a topic of your choice and clicking on all the different media options.

Share the most interesting thing you find in the forum.

Back | End

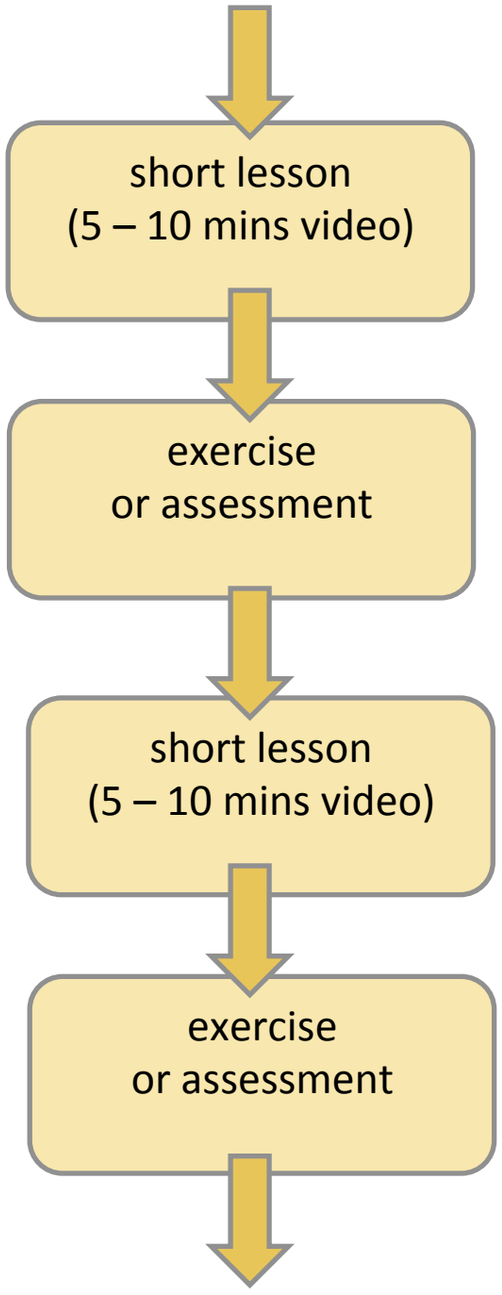
Semi-synchronous waves? A best practice?

- Class 1 released Tues July 10
- Class 2 released Wed July 11
- … etc …
- Final exam due Mon, July 23, 2012



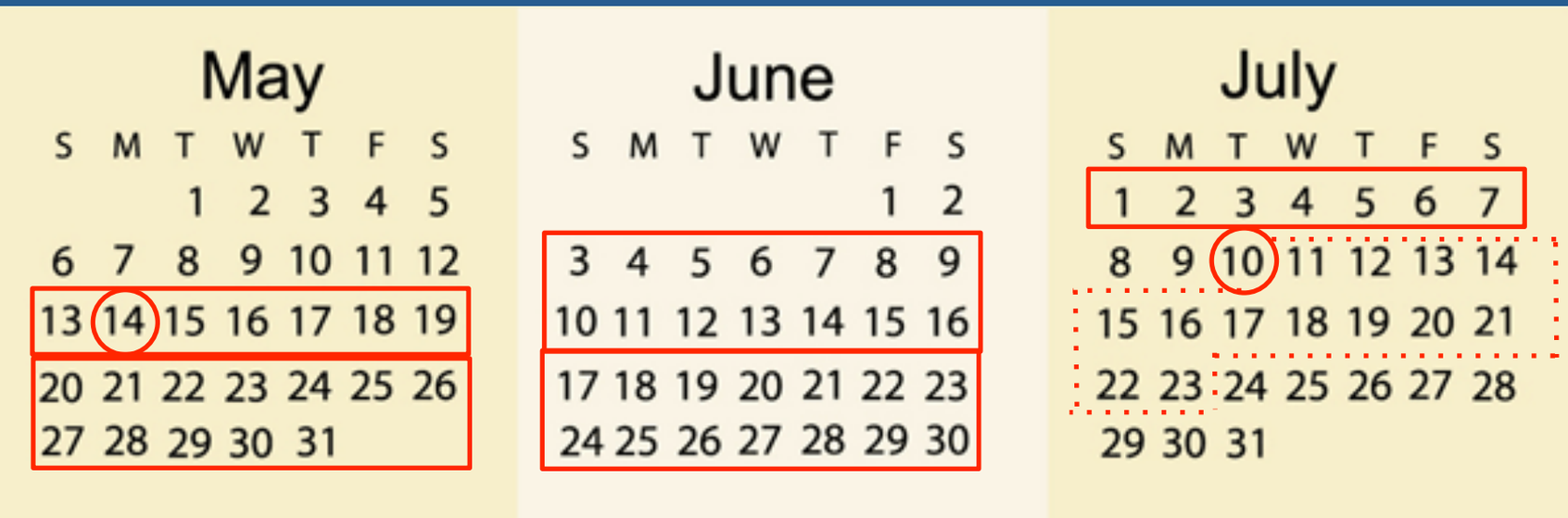
Typical xMOOC design style

- **Design challenge**—convert existing conventional lecture and exercise content into MOOC style



- **Our MOOC:**
  - 32 lessons
  - 4 hours of content
  - 2 hours of exercise

What we did… how we did it…



Week 1: team organization

Week 2,3: design; specs; mocks

Week 4,5: coding; content dev

Week 6,7: V0; recode; usability test

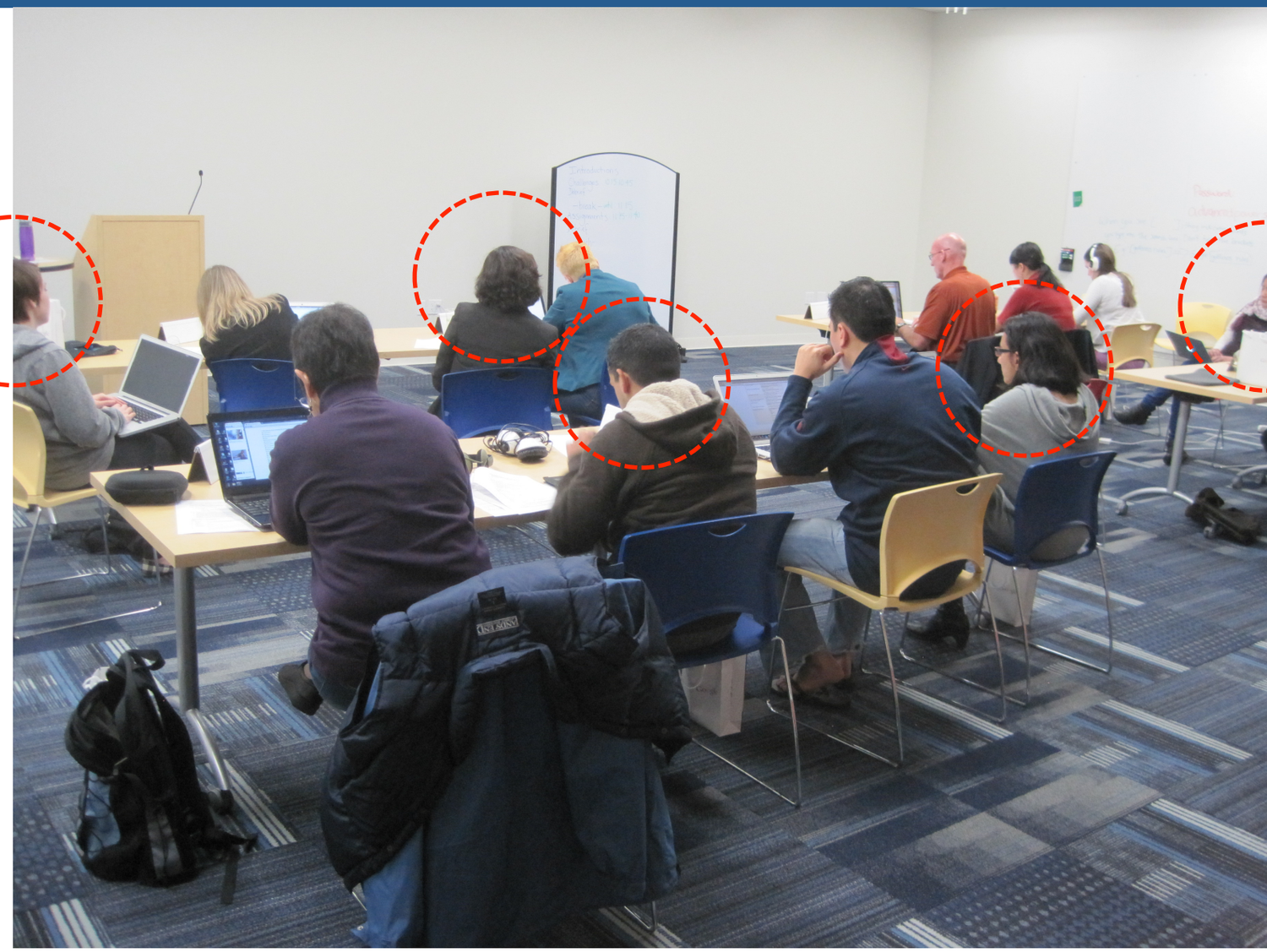
Week 8: usability testing; iterate

Week 9,10: deliver course

- **Team formed:** May 14
- **Version 0:** 6 weeks later (June 18)
- **Registration opens:** June 25
- **Testing:** week 7, 8
- **Deliver:** week 9 and 10 (July 10-19; final due July 23)

Usability testing… of course content material

- Find errors & irritants:
  - *… basic usability*
  - *Flow*
  - *Writing*
  - *Concepts*

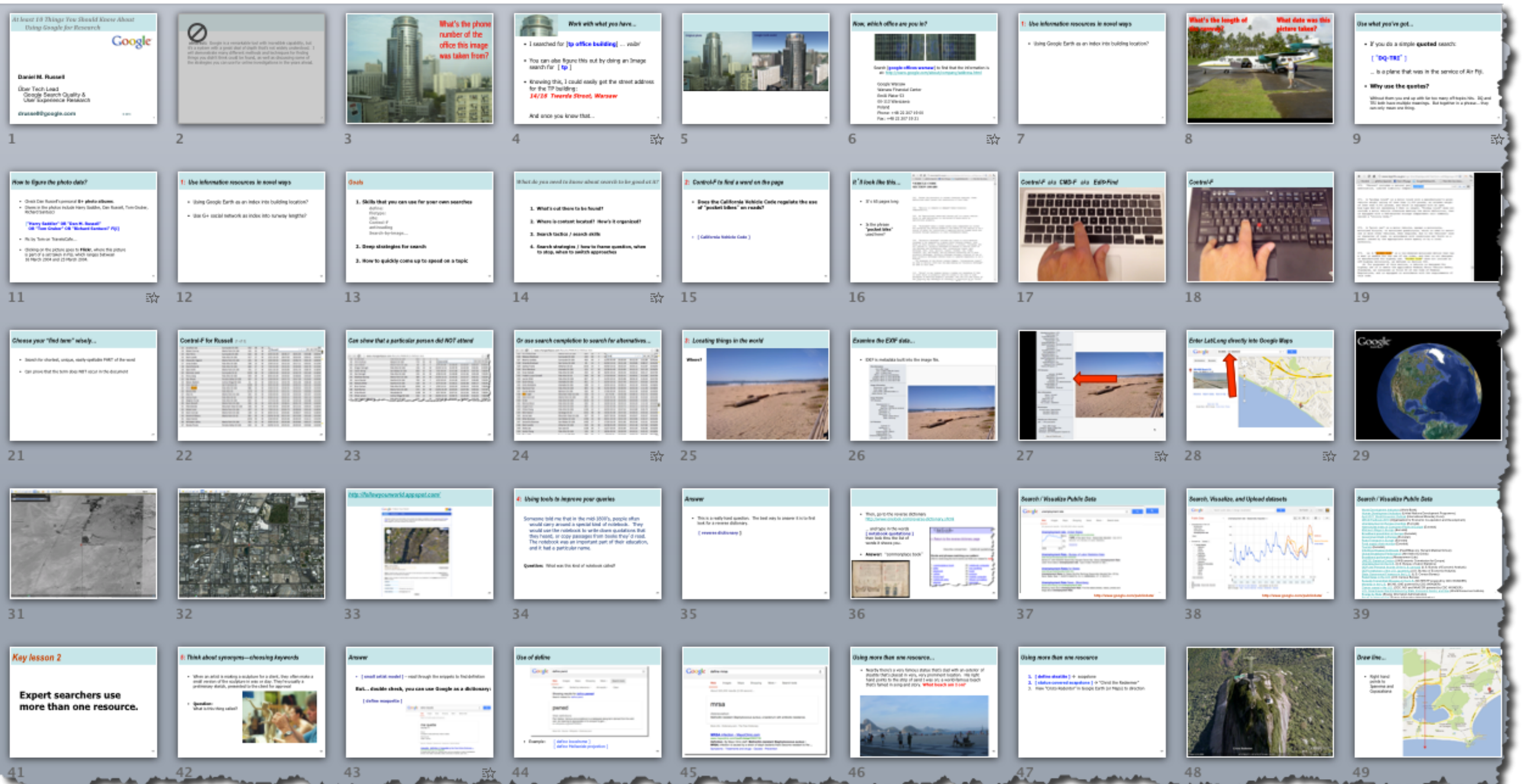


Design challenge 1: Software

- **Target:** develop MOOC application that will scale to potentially 100K simultaneous users
- **Requirements:**
  - clean visual design that works across all browsers
  - simple-to-use / internationalizable
  - use YouTube video; Google Groups
  - deliver content testing, validation, recording of exams

Design challenge 2: Restructure content

- **Prerequisite:** use pre-existing content
- **Target:** convert into MOOC style small elements
- **Task:**
  - creating MOOC content isn't just dividing up long lectures into short ones…
  - each media type/genre has its own design
  - MOOC units must stand on their own… yet…
  - … work into longer arc that feeds into large goals


At least 10 Things You Should Know About Using Google for Research
Google
Daniel M. Russell
Chief Tech Lead
Google Search Quality & User Experience Research
drussell@google.com
What's the phone number of the office this image was taken from?
Work with what you have...
I searched for [tp office building] ... yeah!
You can also figure this out by doing an Image search for [tp]
Knowing this, I could easily get the street address for the TP building:
14/16 Twarda Street, Warsaw
And once you know that...
Now, which office are you in?
1: Use information resources in novel ways
Using Google Earth as an index into building location?
What's the length of this runway?
What date was this picture taken?
Use what you've got...
If you do a simple quoted search:
["DQ-TRE"]
... is a plane that was in the service of Air Fiji.
Why use the quotes?
How to figure the photo date?
Check Dan Russell's personal G+ photo album.
Click on the photo include Harry Saddler, Dan Russell, Tom Grubar, Richard Sandoz
["Harry Saddler" OR "Dan M. Russell" OR "Tom Grubar" OR "Richard Sandoz" Fiji]
Go to Tom on TravelCafe...
Clicking on the picture goes to Flickr, where the picture is part of a set taken in Fiji, which ranges between 16 March 2004 and 23 March 2004.
1: Use information resources in novel ways
Using Google Earth as an index into building location?
Use G+ social network as index into runway lengths?
Goals
1. Skills that you can use for your own searches
Define:
Phrases:
site:
Control-F
wildcarding
Search-by-image...
2. Deep strategies for search
3. How to quickly come up to speed on a topic
What do you need to know about search to be good at it?
1. What's out there to be found?
2. Where is content located? How's it organized?
3. Search tactics / search skills
4. Search strategies / how to frame question, when to stop, when to switch approaches
2: Control-F to find a word on the page
Does the California Vehicle Code regulate the use of "pocket bikes" on roads?
[California Vehicle Code]
It'll look like this...
It's 40 pages long
Is the phrase "pocket bike" used here?
Control-F aka CMD-F aka Edit>Find
Control-F
Choose your "find term" wisely...
Search for shorted, unique, easily-spellable PART of the word
Can prove that the term does NOT occur in the document
Control-F for Russell
Can show that a particular person did NOT attend
Or use search completion to search for alternatives...
3: Locating things in the world
Where?
Examine the EXIF data...
EXIF is metadata built into the image file.
Enter Lat,Long directly into Google Maps
Google
Using tools to improve your queries
Someone told me that in the mid-1600's, people often would carry around a special kind of notebook. They would use the notebook to write down quotations that they heard, or copy passages from books they'd read. The notebook was an important part of their education, and it had a particular name.
Question: What was this kind of notebook called?
Answer
This is a really hard question. The best way to answer it is to find look for a reverse dictionary.
[reverse dictionary]
Thus, go to the reverse dictionary
[notebook quotations]
then look thru the list of words it shows you.
Answer: "commonplace book"
Search / Visualize Public Data
Search, Visualize, and Upload datasets
Key lesson 2
Expert searchers use more than one resource.
4: Think about synonyms—choosing keywords
When an artist is making a sculpture for a client, they often make a small version of the sculpture in wax or clay. They're usually a preliminary sketch, presented to the client for approval
Question: What is this thing called?
Answer
[small artist model] – read through the snippets to find definition
But... double check, you can use Google as a dictionary:
[define maquette]
Use of define
Example: [define bucolic]
[define Mollweide projection]
mina
Using more than one resource...
Nearby there's a very famous statue that's dealt with an enormous amount of graffiti that's placed in very, very prominent location. The right hand points to the strip of sand I was on, a world-famous beach that's famed in song and story. What beach am I on?
Using more than one resource
1. [define obelisk] + sculpture
2. [statue covered graffiti] → "Christ the Redeemer"
3. Have "Cristo Redentor" in Google Earth (or Maps) to direction
Draw line...
Right hand points to Ipanema and Copacabana

Design challenge 3: Design a community

- **Prerequisite:** use existing Google social tools
- **Target:** smoothly functioning social tools to support potentially large (20 – 200K) population
- **Design:**
  - create one Group / lesson topic
  - add content to drive community use of Groups
  - setup community of TAs to provide 24/7 support
  - moderate groups so questions are answered quickly

What did we not expect?

- **Community effect:** lots of students helped out by answering questions
  - 33% of finishers joined in the forums
  - 7% of all students posted in the forums
  - a significant number of questions posted to forums were answered by students in the class
- **International issues:**
  - Imperial measures ≠ US measures
  - language issues

How do you know when you're succeeding?

People care enough to steal it

http://www.punchapaadam.com/forums/topic/93846-google-power-search-online-certification-course-q-a-incl-full-course/

Qt & Ans

Spoiler Hide

Q . Where will the Summer Olympics of 2016 be held?
A . Rio de Janeiro

Q . You want to find some information on the Olympics from the United States State Department's web address is. So, you search for it, and get this result:
A . Search within the State Department website for a specific term.

Q . How do you remove the time filter from your search?
A . Click on the small blue X on the right-hand end of the blue stripe.

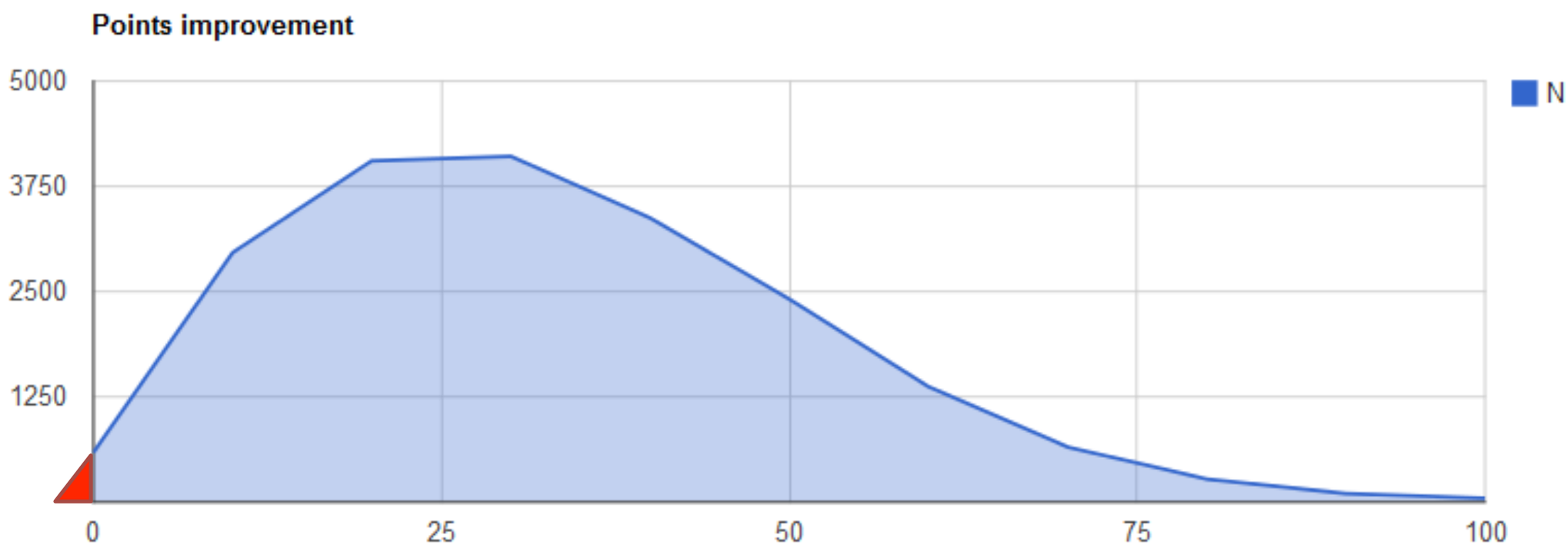
Q . What category of media is represented here?
A . Discussions

Q . What search would you do to find out how to apply for volunteer opportunities th
the official site for the 2016 Rio Olympics? It would get you results similar to those
A . [site:rio2016.com OR site:olympic.org]

Q . You wrote that great search, but found pages about people on the Olympic Commi
get in the way of your search. What do you add to the query [volunteer apply] to tell G
Committee?
A . [-"olympic committee"]

Q . You decide to follow the official site for the 2016 Rio Olympics in Portuguese, too
A . voluntário

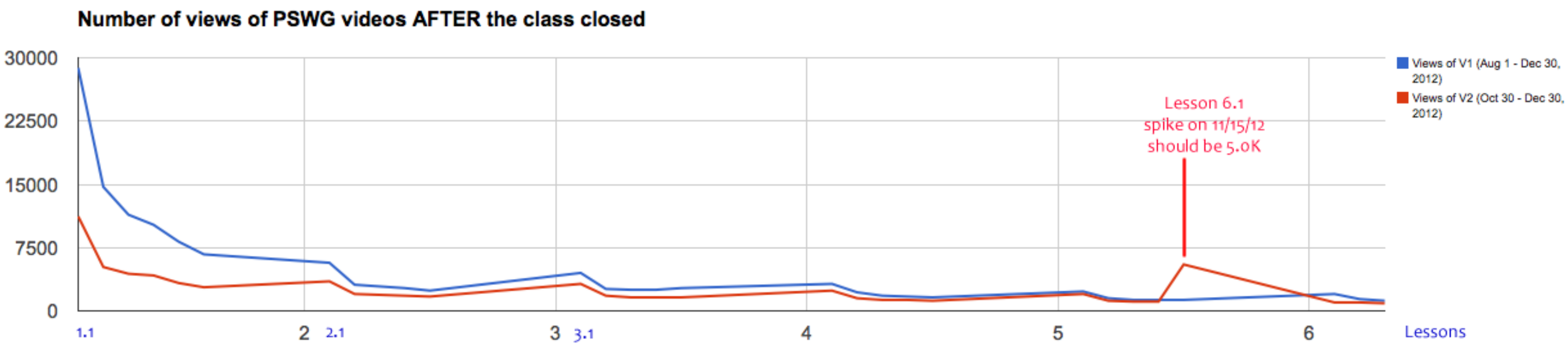
Amount of improvement: preclass to postclass tests



N = 22,391 course completers

mean improvement: 40.1%

Class video views AFTER class closed



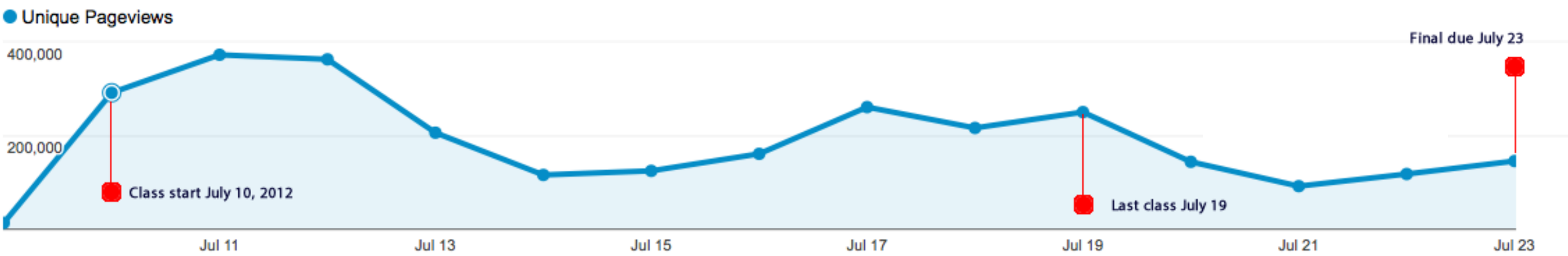
- ~7 years of post-class YT video watching!

Learning communities

- Hangout On Air:
  - live narrowcast to class; recorded for out-of-time-zone students
  - Google Moderator used to collect and vote on questions from students (15K votes on 647 questions)
  - 40% of all students used a HOA

    (43% found it very helpful; 50% somewhat)

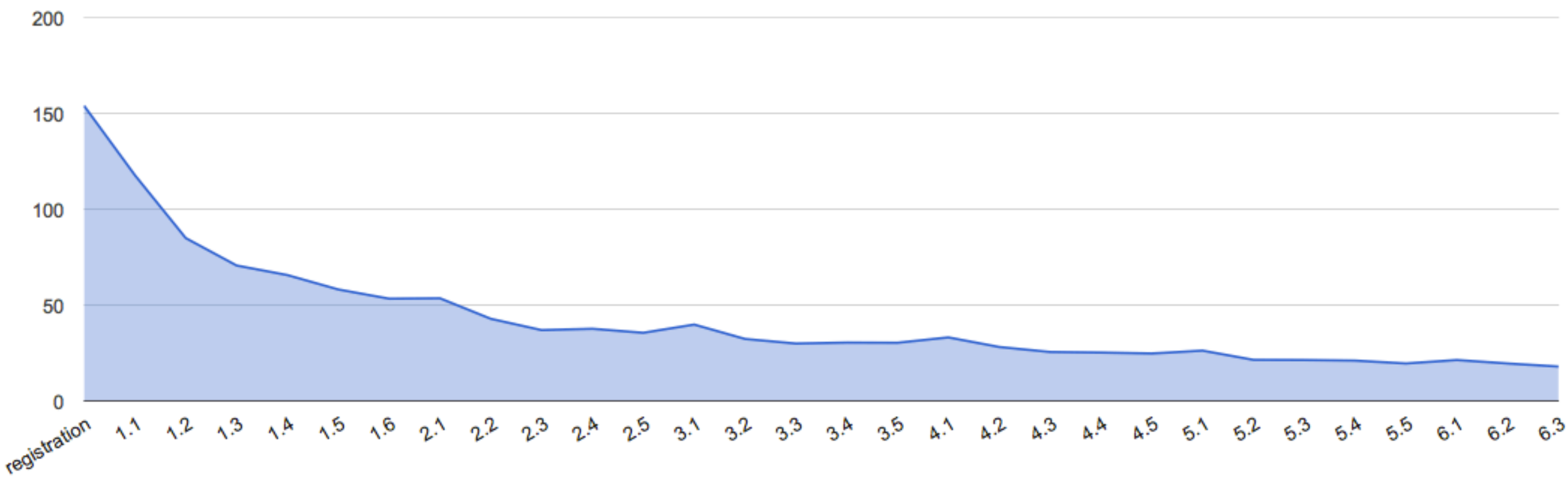
Patterns of attendance 1



- **2.8M** unique page views on site
- Avg time on page: **3:40**
- Total YouTube videos served: **87,630** hours
  (i.e., 10 person-years of video served)

Patterns of attendance 2

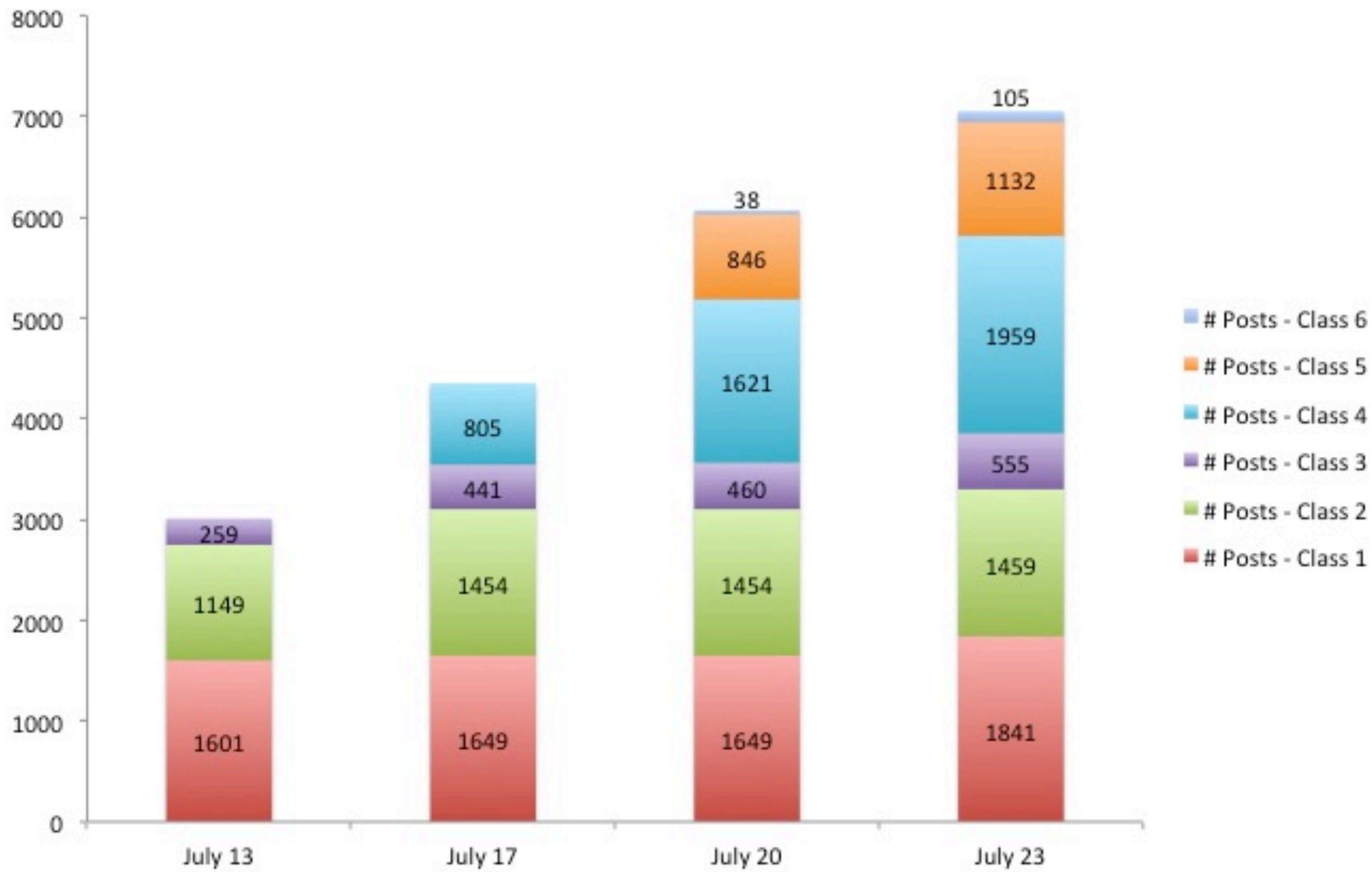
- 39% falloff between initial sign-ups and first class attendance
- ~6% decline / class
- Interesting 3% uptick at the first lesson of each class on all classes
- We later found out that this pattern is standard for all MOOCs



For MOOC #1 (July, 2013)…

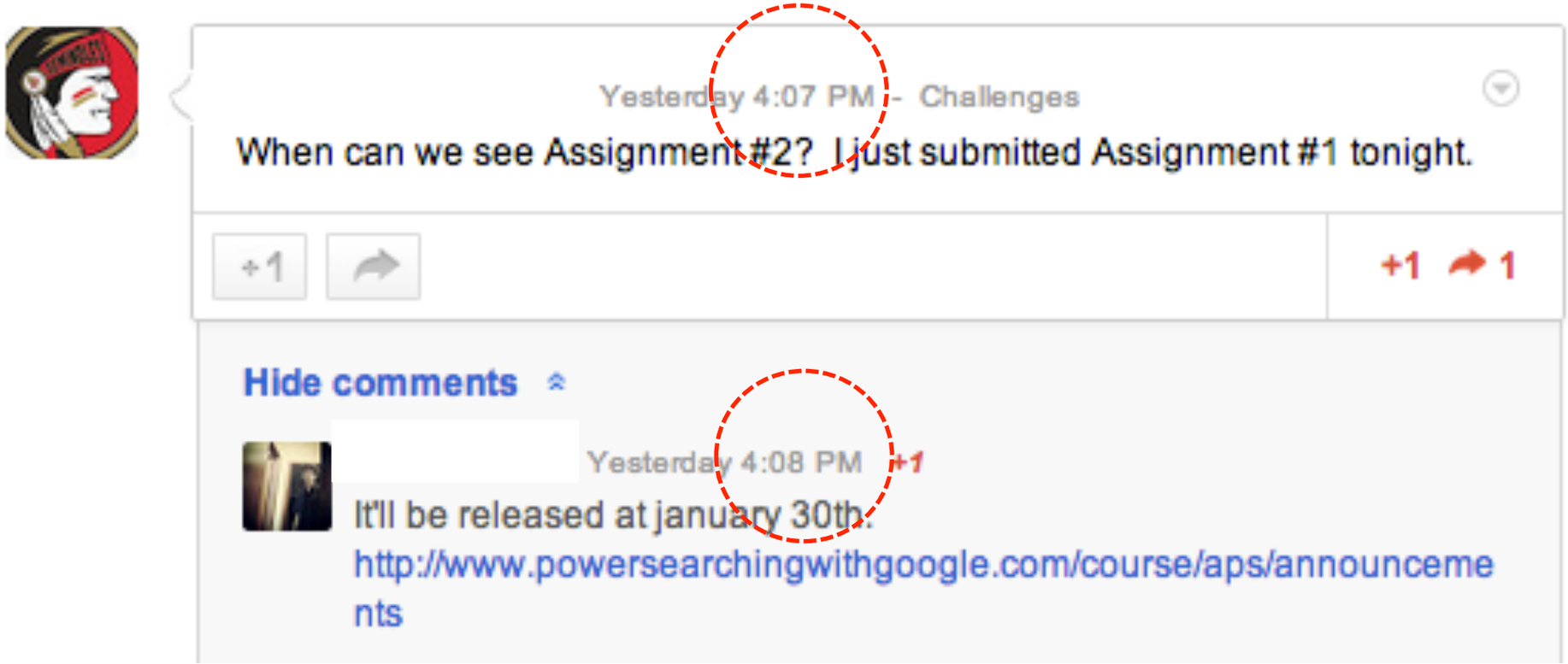
- 154K registrations
- 114K (74%) attended first lesson
- 19% FCCR (First-course-to-completion ratio)
- 22K students completed course
- 4.5 Net Promoter Score (out of 5)
- 98% of survey respondents said they would recommend this course to friends (n=19.8K)
- 40% mean improvement in performance score between pre-class test and final

Community learning



Posts to forums by class

Large cohort means rapid replies / diversity of approaches



7:25 AM (edited) - Challenges

I can not understand the challenge certificate predominantly that allow me to solve the problem The two challenges please help @ Tasha
Option 1:
This famous scrapbook enthusiast and patent-holder's first patent was issued the same year that he published his fake autobiography. According to that eponymous autobiography, what is the name of his earliest known ancestor?

Option 2:
My daughter recently received an heirloom cup that has been in my family for six generations. I wanted to know more about this cup. Refer to the two images below to solve this challenge. The second image is a magnified drawing of the bottom of the cup.

+1 +1

11:24 AM

هو عايزك فى الاول تجيب اسم الancestor بتاعه والتانى عايز صورتين للفنجان
استخدم المهارات اللى اتعلمتها علشان تحل التحدى ده

Add a comment...

M 10:32 AM - Challenges

How can I get my certificate in a pdf format? any help please

+1

Hide comments

Michael 10:39 AM

On printer setting before actually printing change to pdf

M 10:43 AM

But I printed already, any chance to fix it

Michael 10:49 AM +1

Go back in to challenge and do it again. Then when it comes up change the setting. Be sure to change to landscape or portrait.

M 10:52 AM

I did it Michael, Thank you so much for getting back to me.

Michael 11:07 AM

My pleasure.

Add a comment...

What you should do when designing a MOOC

1. **Expect to iterate** on design and testing of software **AND** content
2. **Count on a community effect** to help run the class
3. **Plan on re-writing / re-designing** the assessments and exercises
4. **Plan for analytics** to track clicks and views of all pages, videos, exercises (etc) to help debug MOOC
5. **Certificates mean a LOT!**

Certificate of Completion

Presented to

Sergey Sorokin

for successfully completing the
Advanced Power Searching with Google course in February 2013

Google™

What do we know about our students?

What we learned…

1. **MOOCs as software development practice: with a focus on user testing**

2. **Surprising power of community effect**

3. **Hints that FCCR matters, and that "attrition" might not be what we thought it was**

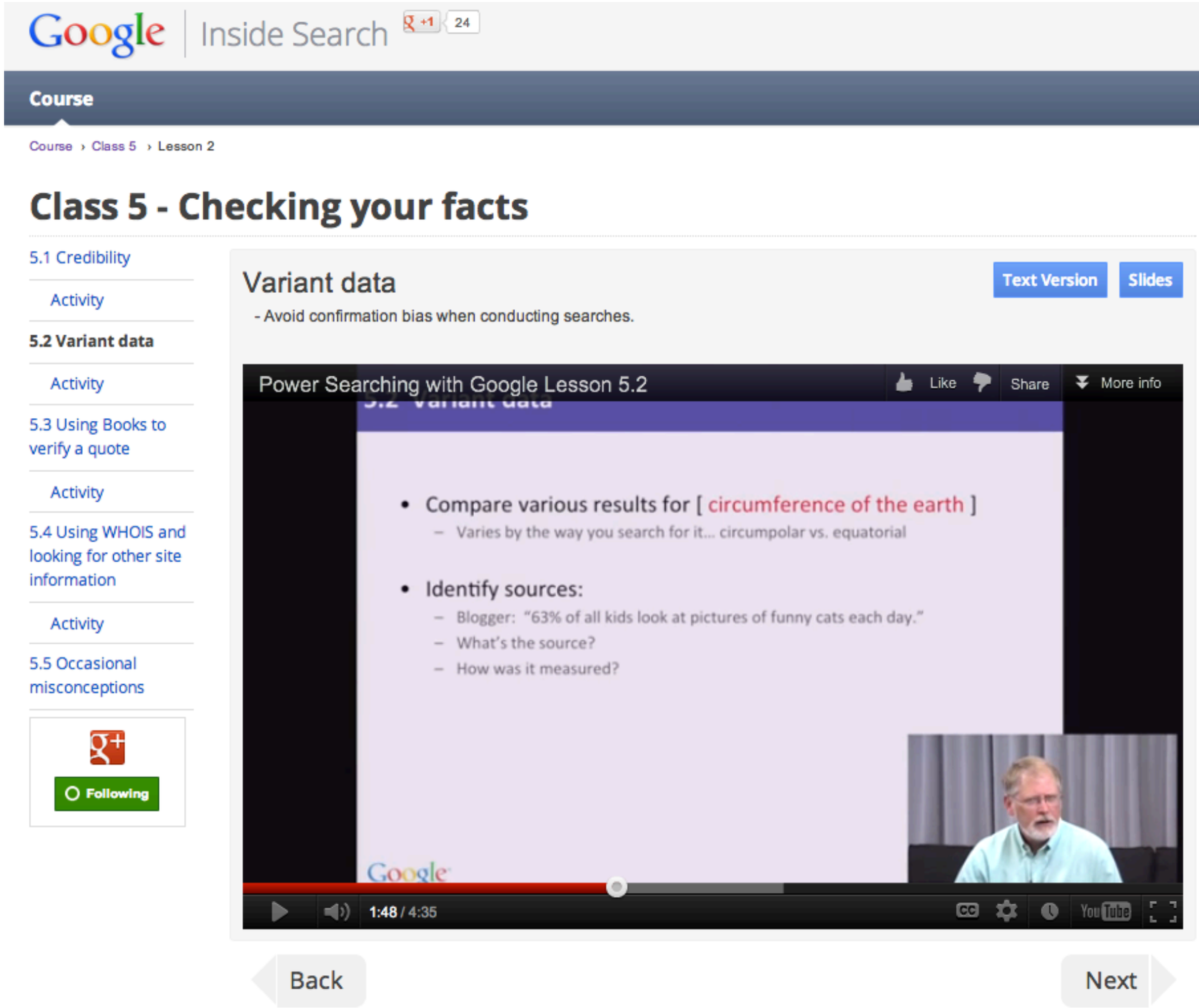
4. **Still need to validate**

#2: Our second MOOC

October 2012

We ran the MOOC again! (#2)

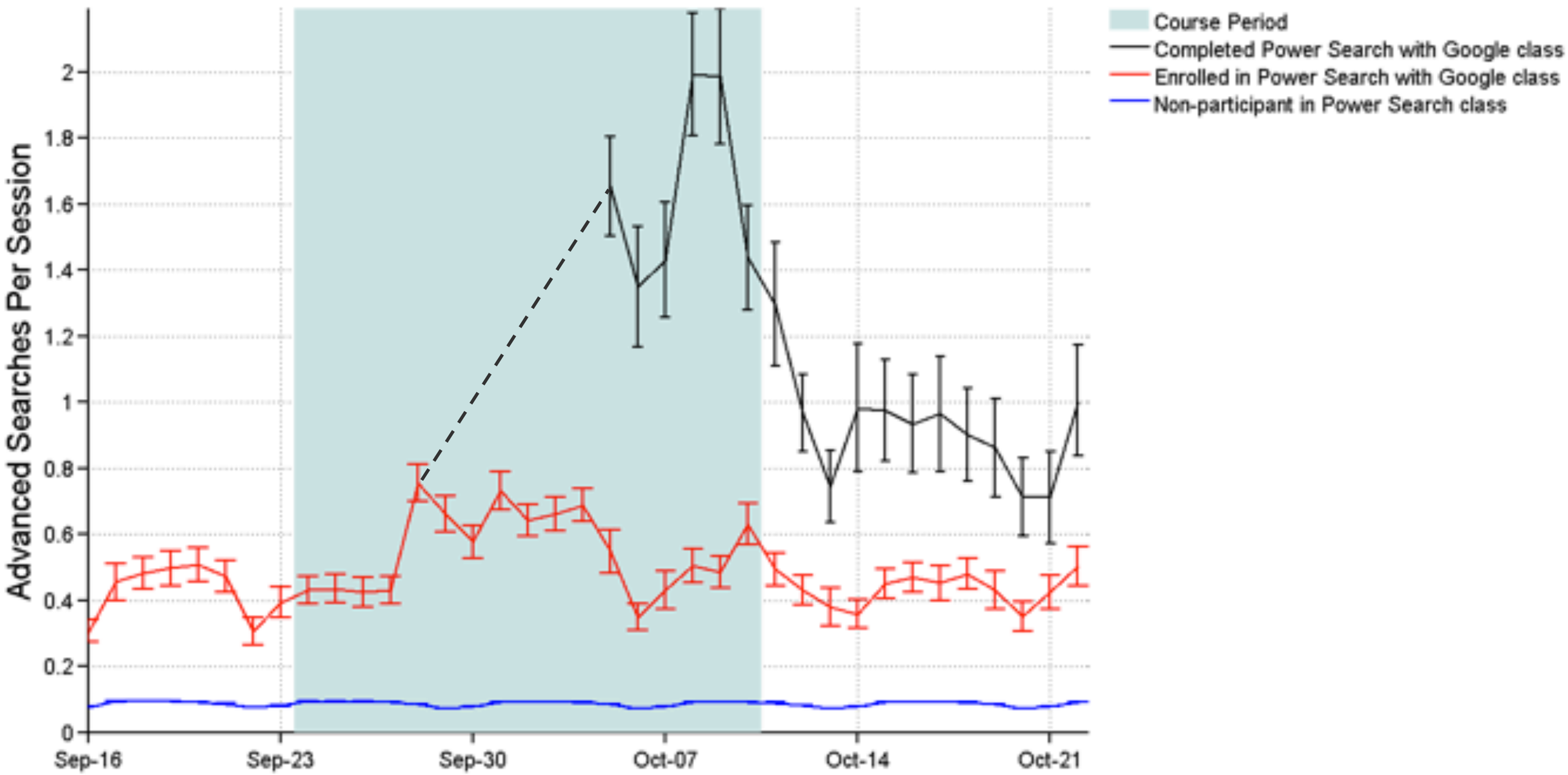
- **Offer the PSWG again in Oct, 2012**



However…for this MOOC…

• 154K	• 127K registrations
• 114K	• 90K (70%) attended first lesson
• **19%**	• **36%** FCCR (First-course-to-completion ratio)
• 22K	• 24K students completed course
• 4.5	• 4.6 Net Promoter Score (out of 5)
• 98%	• 99% of survey respondents said they would recommend this course to friends (n=9.2K)
• 40%	• 40% mean improvement in performance score between pre-class test and final

Adv search use post-registration to post-class



What we learned…

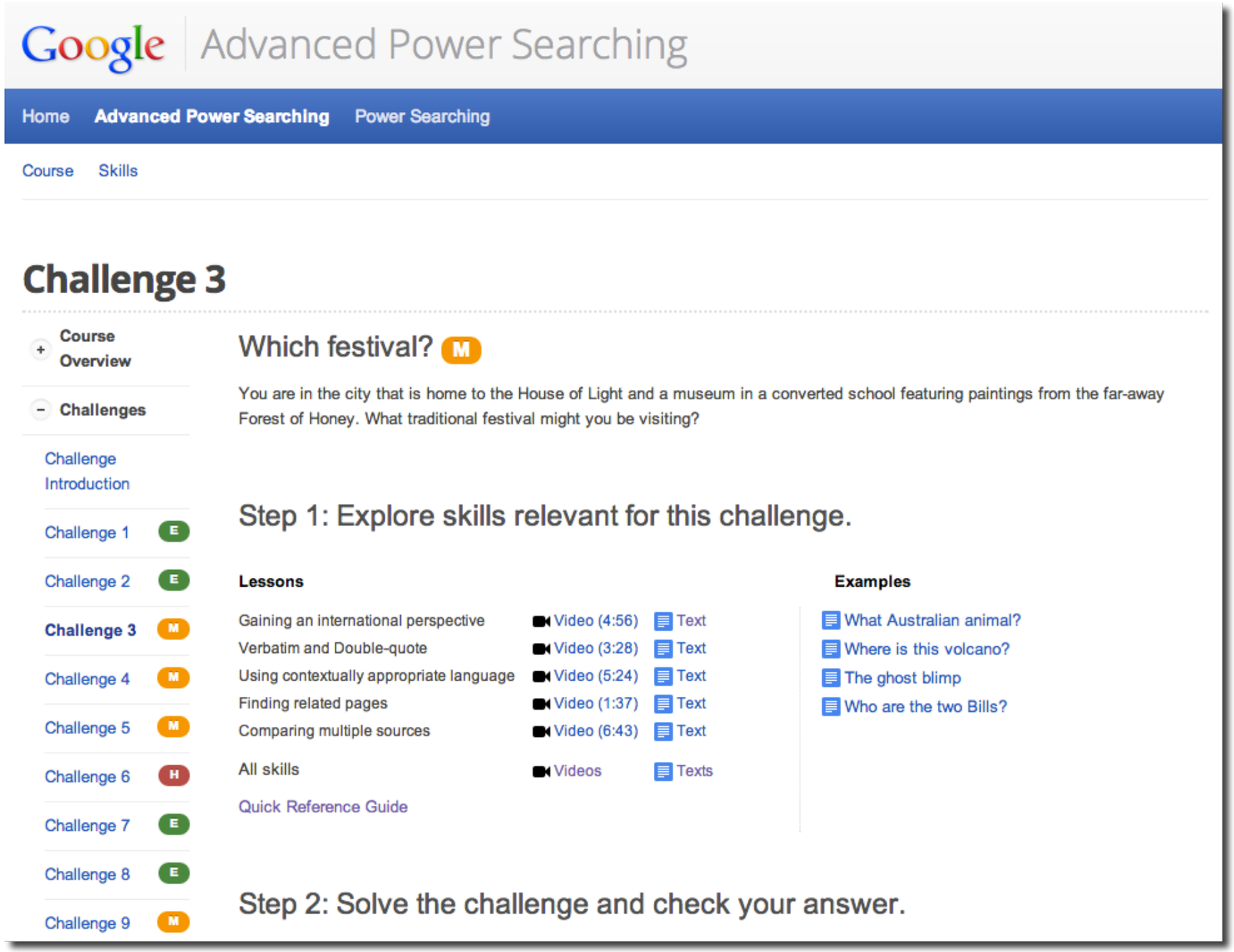
1. **Measuring actual behaviors pre- post-class is tricky (but can be done in some cases)**
2. **Setting expectations correctly affects completion**
3. **Fixing bugs in content (issue tracking) affects attrition**

#3: Our third MOOC

Advanced PSWG * Feb 2013

We created an ADVANCED PowerSearching MOOC! (#3)

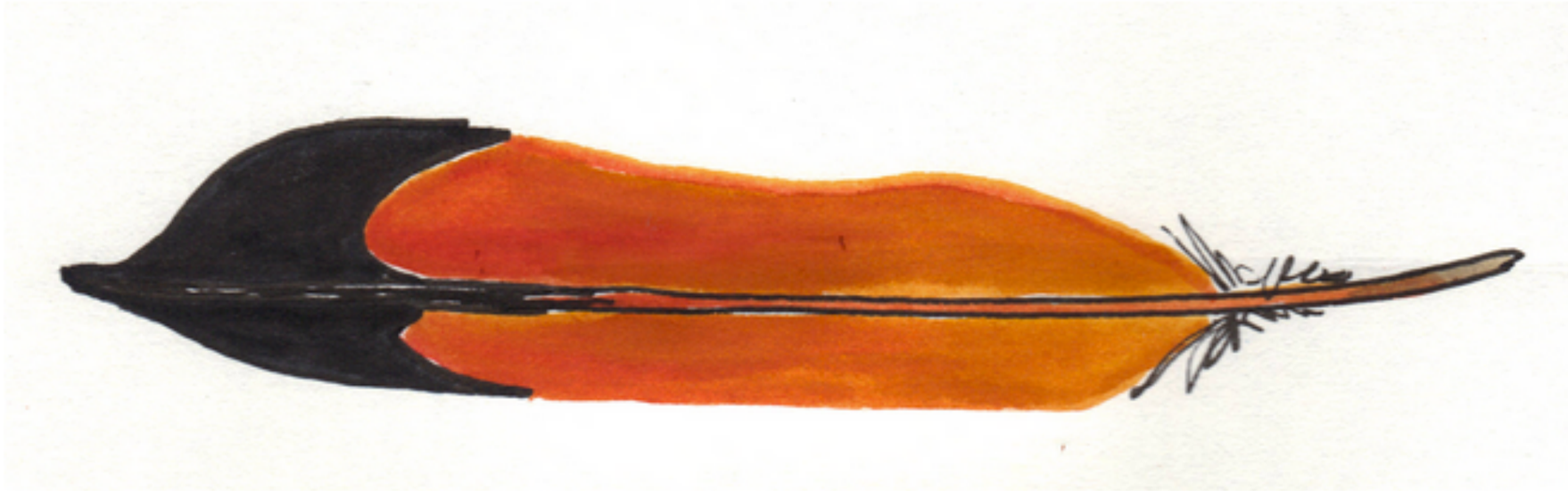
- **Challenge-based**
- **Non-linear org**
- **Video + text + examples**
  (self-directed)



Challenge 12

What's that bird? H

You were hiking in the Rio Platano Biosphere Reserve and saw this feather on the ground. You sketched it out so you could identify it later. To what kind of bird did it belong?



Step 1: Explore skills relevant for this challenge.

Lessons

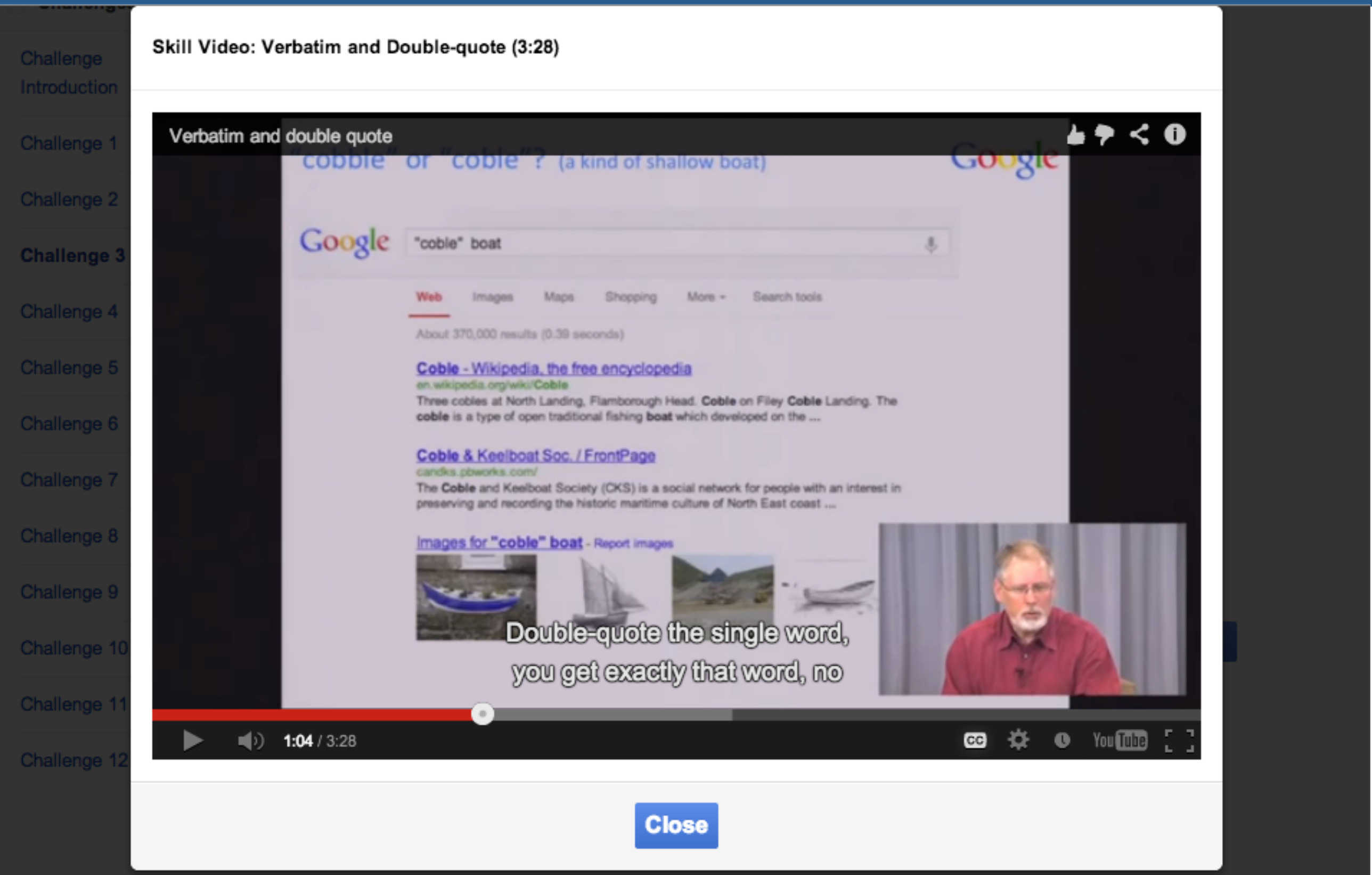
Gaining an international perspective	Video (4:56)	Text
Context terms	Video (5:17)	Text
Using contextually appropriate language	Video (5:24)	Text
Specialization and generalization	Video (4:22)	Text
Comparing multiple sources	Video (6:43)	Text
All skills	Videos	Texts

Quick Reference Guide

Examples

- What Australian animal?
- Out my window
- Name that runway

Videos on-demand (not placed into the sequence)



Power Searching With Google Course - http://www.powersea...
Power Searching With Google Course [DEFAULT]

Reporting | Customization | Admin | Help

MY STUFF
- Dashboards
- Shortcuts BETA
- Intelligence Events

STANDARD REPORTS
- Real-Time
  - Overview
  - Locations
  - Traffic Sources
  - Content
- Audience
- Traffic Sources
- Content
- Conversions

Overview

Real-time Analytics now obeys your profile filters!

Create Shortcut BETA

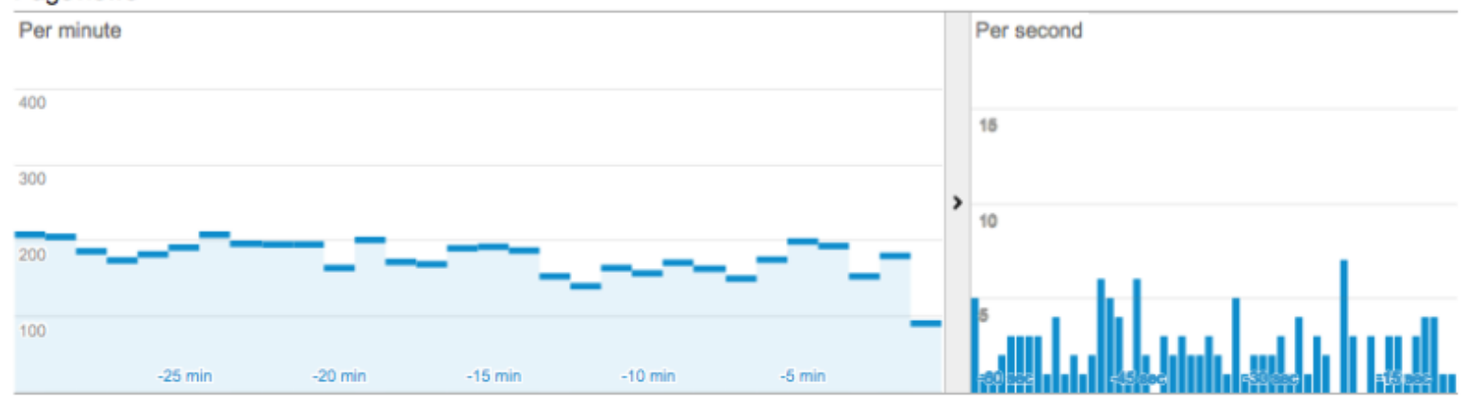
Right now

380

active visitors on site

RETURNING 63% | NEW 37%

Pageviews



Top Referrals:

	Source	Active Visitors
1.	lifehacker.com	19
2.	google.com	13
3.	habrahabr.ru	11
4.	t3n.de	4
5.	support.google.com	3

Top Social Traffic:

	Source	Active Visitors
1.	Facebook	18
2.	Google+	17
3.	Blogger	11
4.	Twitter	8
5.	Diigo	1

Top Active Pages:

	Active Page	Active Visitors	
1.	/	37	9.74%
2.	/course/aps/challenge?c=1	35	9.21%
3.	/course/aps/class?class=1&lesson=1	27	7.11%
4.	/course/aps/class?class=1&lesson=4	26	6.84%
5.	/course/aps	25	6.58%
6.	/course/aps/class?class=1&lesson=3	25	6.58%
7.	/course/ps/course.html	20	5.26%
8.	/course/aps/introchallenge	18	4.74%
9.	/course/ps/lesson11.html	17	4.47%
10.	/course/aps/class?class=1&lesson=2	13	3.42%

Top Locations:

All of the skills modules

Google | Advanced Power Searching

Home | **Advanced Power Searching** | Power Searching

Announcements | Course | Skills | Forum | My Profile

Skills and Strategies

Operators	Wildcards	Number range	AROUND
	Find related	Operator combos	Use site structure
Additional Google Properties	Scholar	Legal Scholar	
	Patents	Book Search	
Advanced Search Tools	International	Creative Commons	Search settings
	Verbatim search	Web history	Adv Image Filters
	Custom Search	Alerts	
Refinement Strategies	Context terms	Common language	
	Contextual terms	Google Trends	
Search Strategies	Matching resources	Use social networks	
	Specialization & Generalization	Comparing multiple sources	

Text versions of the lessons offered as well…

Quotation marks around a single word

For example, imagine that you want to look for information on *coble boats*. In a typical search, [coble boat], Google may try to spell correct that for you, thinking that you meant C-O-B-B-L-E. If what you really want was *coble* with just a single B, simply put the word in quotation marks: ["coble" boat].

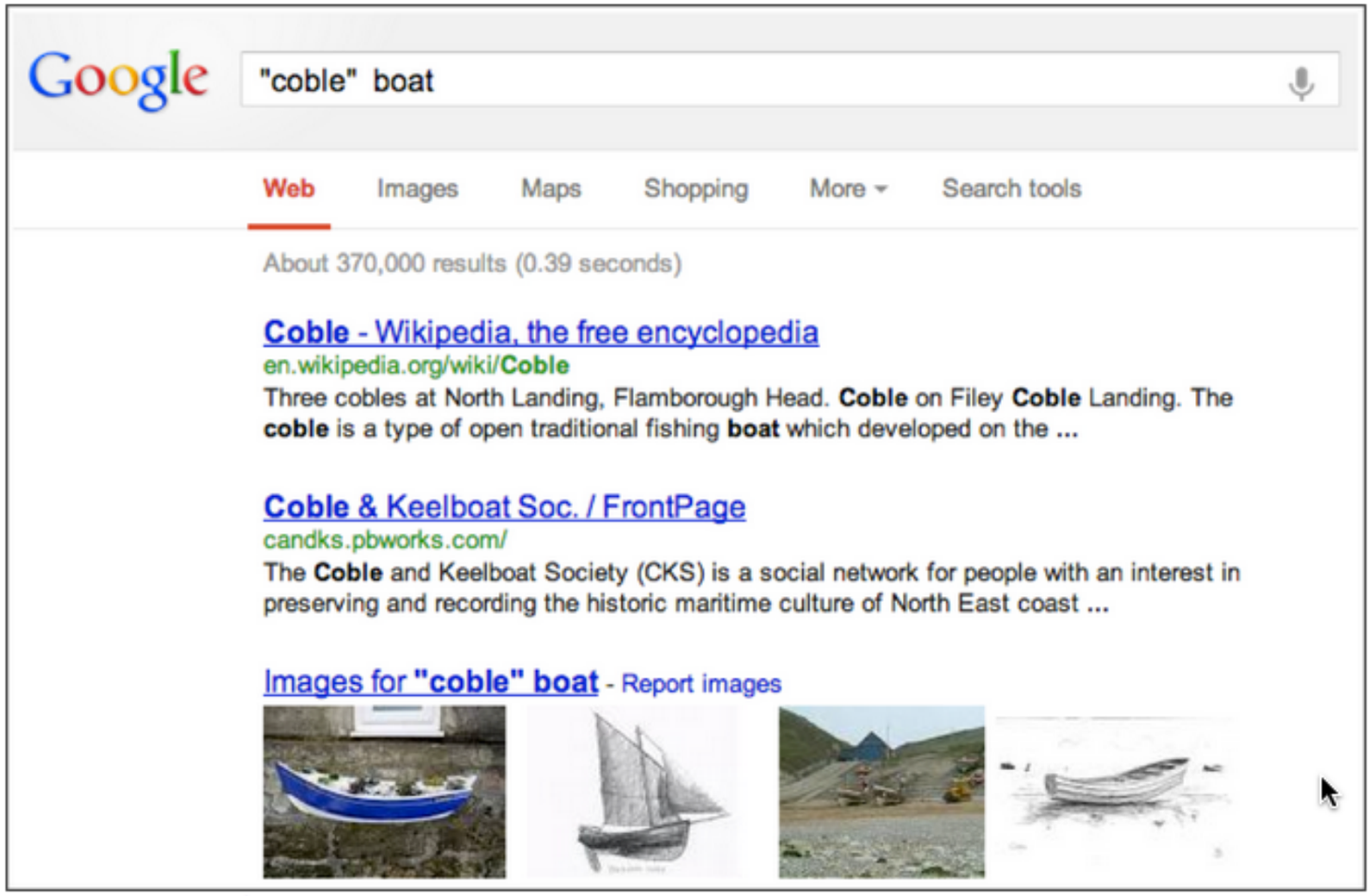


Figure 1: Results for the query ["coble" boat].

Verbatim mode

The other way you can do this is to go to verbatim mode, which has the same effect as putting quotation marks around each word of your query.

Notice that when you turn verbatim mode on, it not only turns off synonymization and spell correction, but also all localized results.

Google | Advanced Power Searching

Home **Advanced Power Searching** Power Searching

Announcements Course Skills Forum My Profile

NEW TOPIC | Mark all as read | Filters | Tags | About

Search

Advanced Power Searching with Google Course Forum | My membership | Showing 31 of 31 topics (30 unread)

Advanced Power Searching Course Forum
Post Questions. Find Answers. Share Experiences. Get Help.
How to use this Forum.

README: How to use this Google Group (1) FAQ
By Advanced Power Searching with Google Course Forum - 1 post - 46 views - updated 12/11/12

Activity: Use the wildcard * operator (2) Activity
By Advanced Power Searching with Google Course Forum - 2 posts - 29 views - updated Jan 22 (6 hours a...

The Water Cooler - Where folks gather during breaks (1) Water-Cooler
By course_staff - 1 post - 19 views - updated Jan 22 (7 hours ago)

Activity: Explore Google Trends (1) Activity
By Advanced Power Searching with Google Course Forum - 1 post - 9 views - updated Jan 2

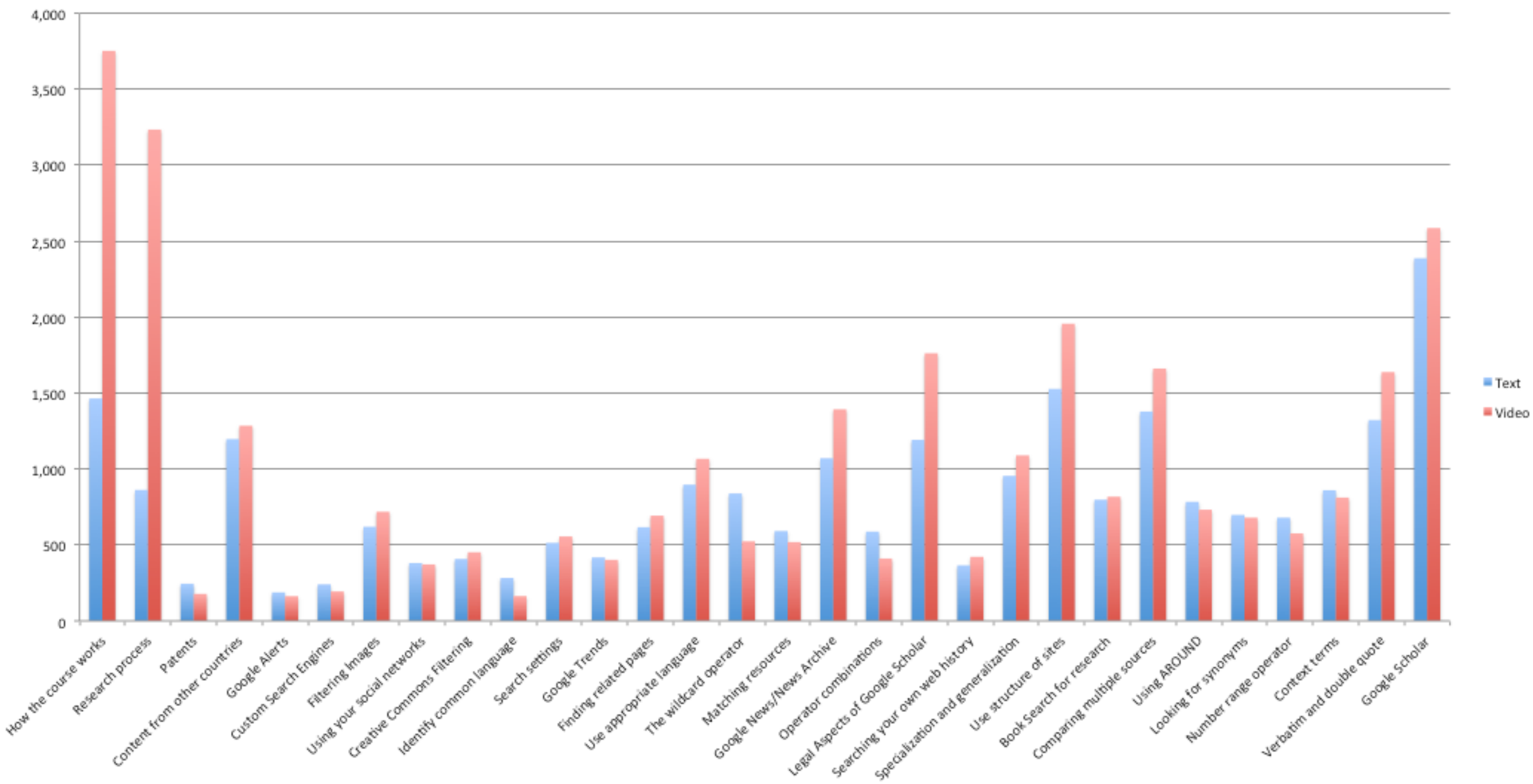
Activity: Set up Google alerts (1) Activity
By Advanced Power Searching with Google Course Forum - 1 post - 8 views - updated Jan 2

Activity: Create a custom search engine (1) Activity
By Advanced Power Searching with Google Course Forum - 1 post - 7 views - updated Jan 2

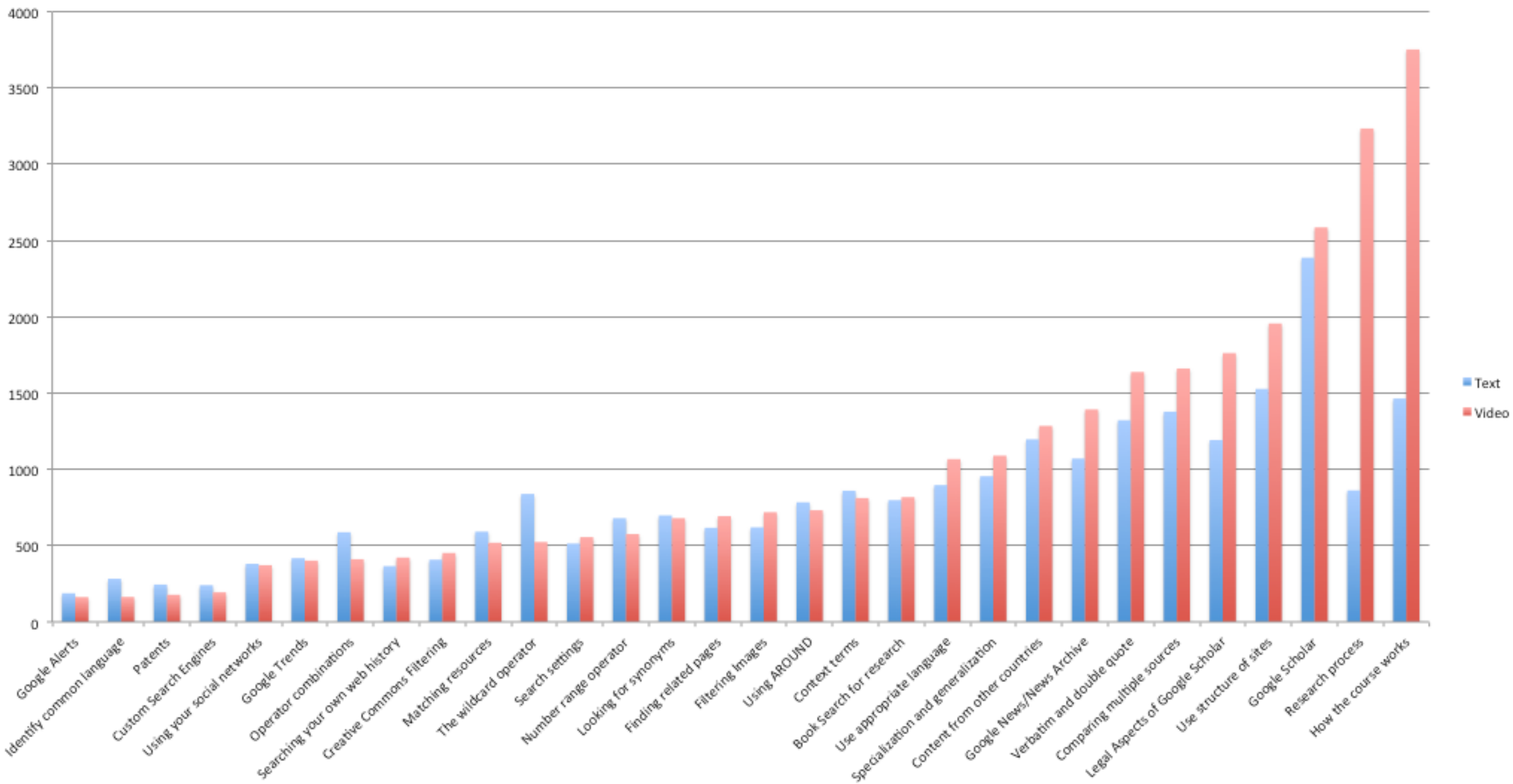
Activity: Compare multipe sources (1) Activity
By Advanced Power Searching with Google Course Forum - 1 post - 4 views - updated Jan 2

Activity: Apply specialization and generalization to queries (1) Activity

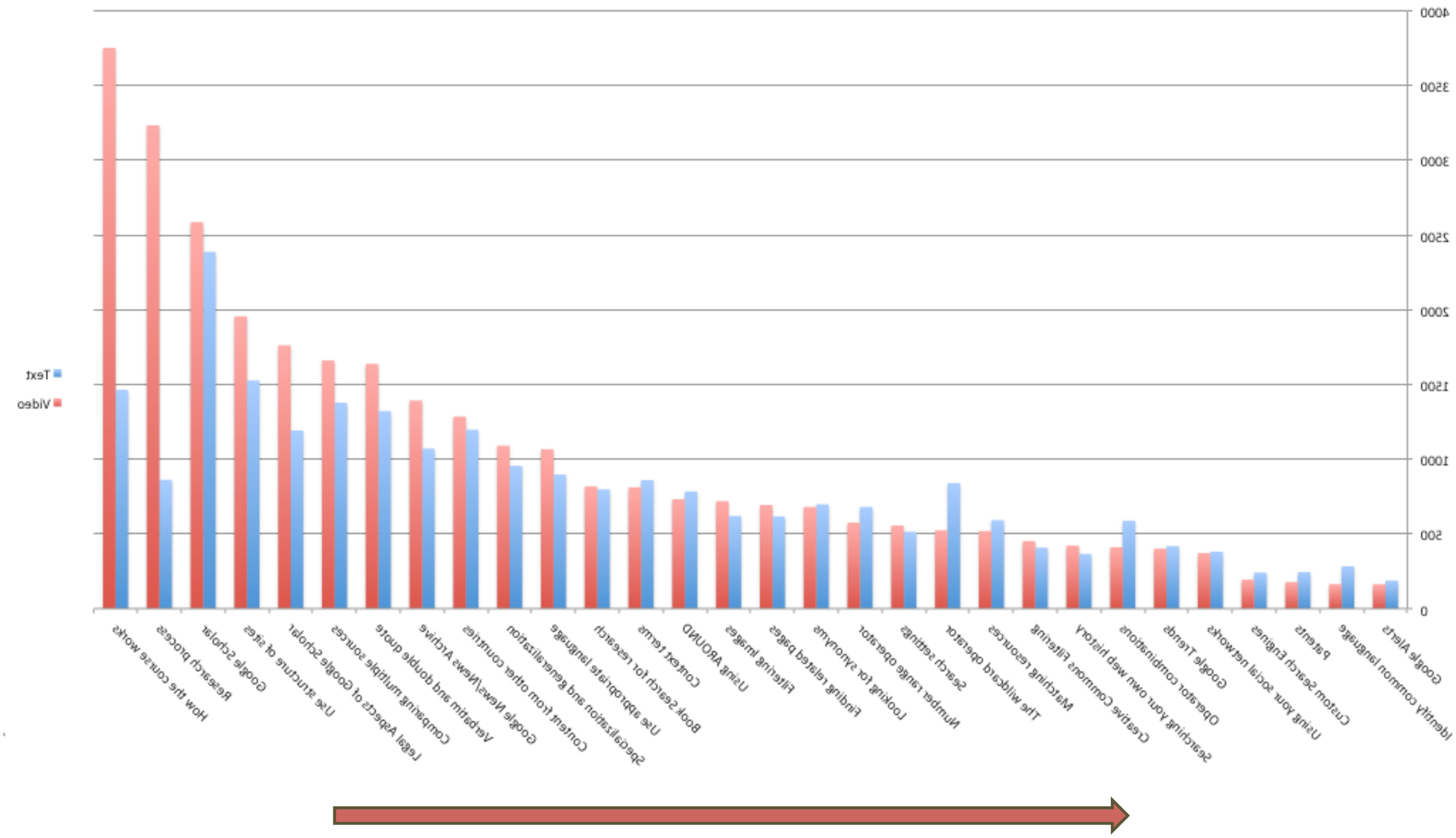
Video vs. Text: Access of the course content



When sorted by total number of hits…

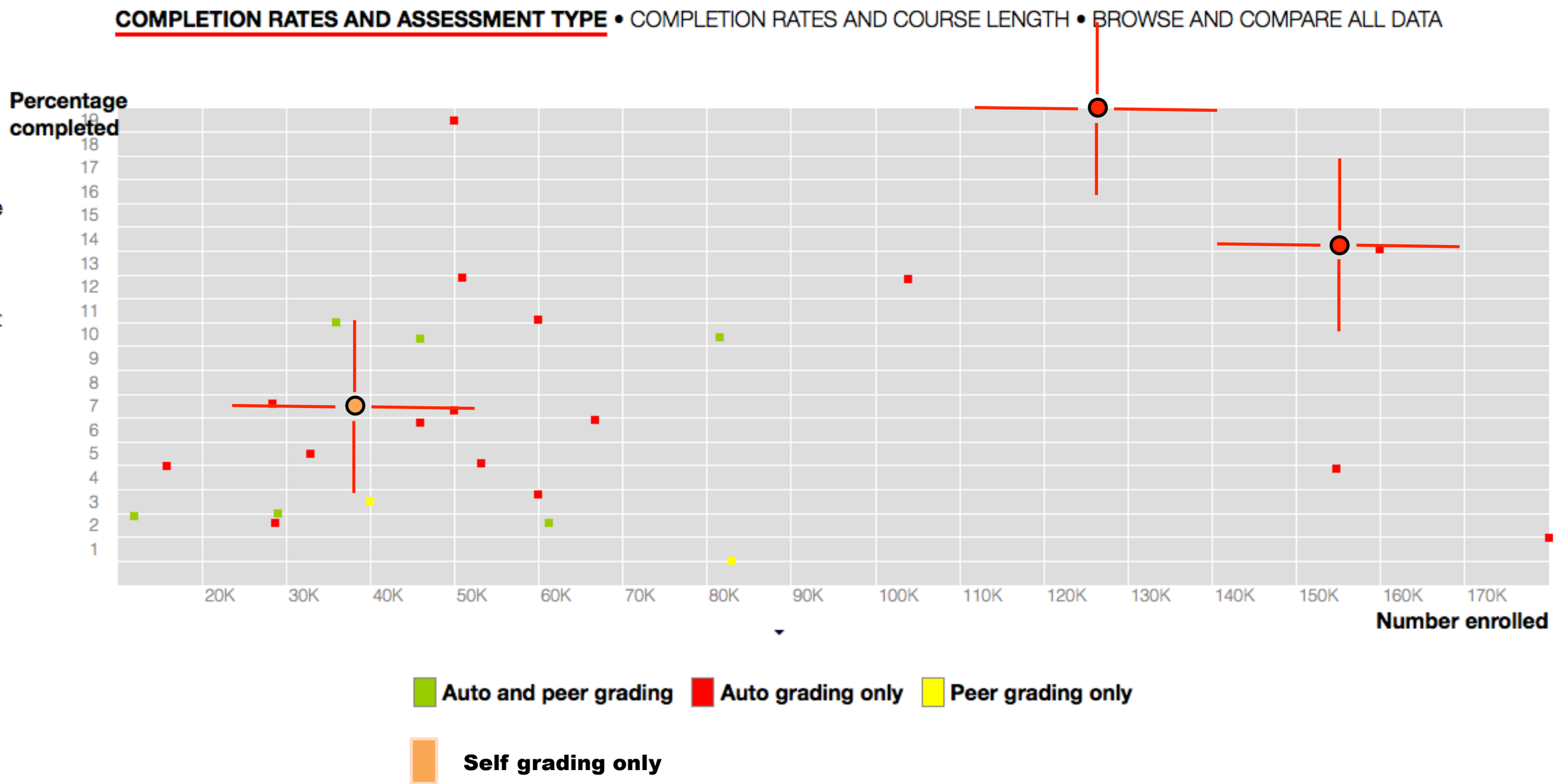


When sorted by total number of hits…



Distance from top of content

Completion rate

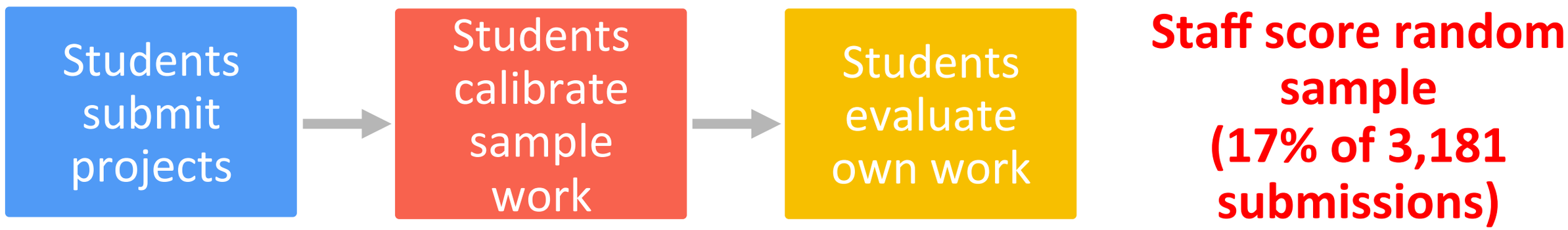


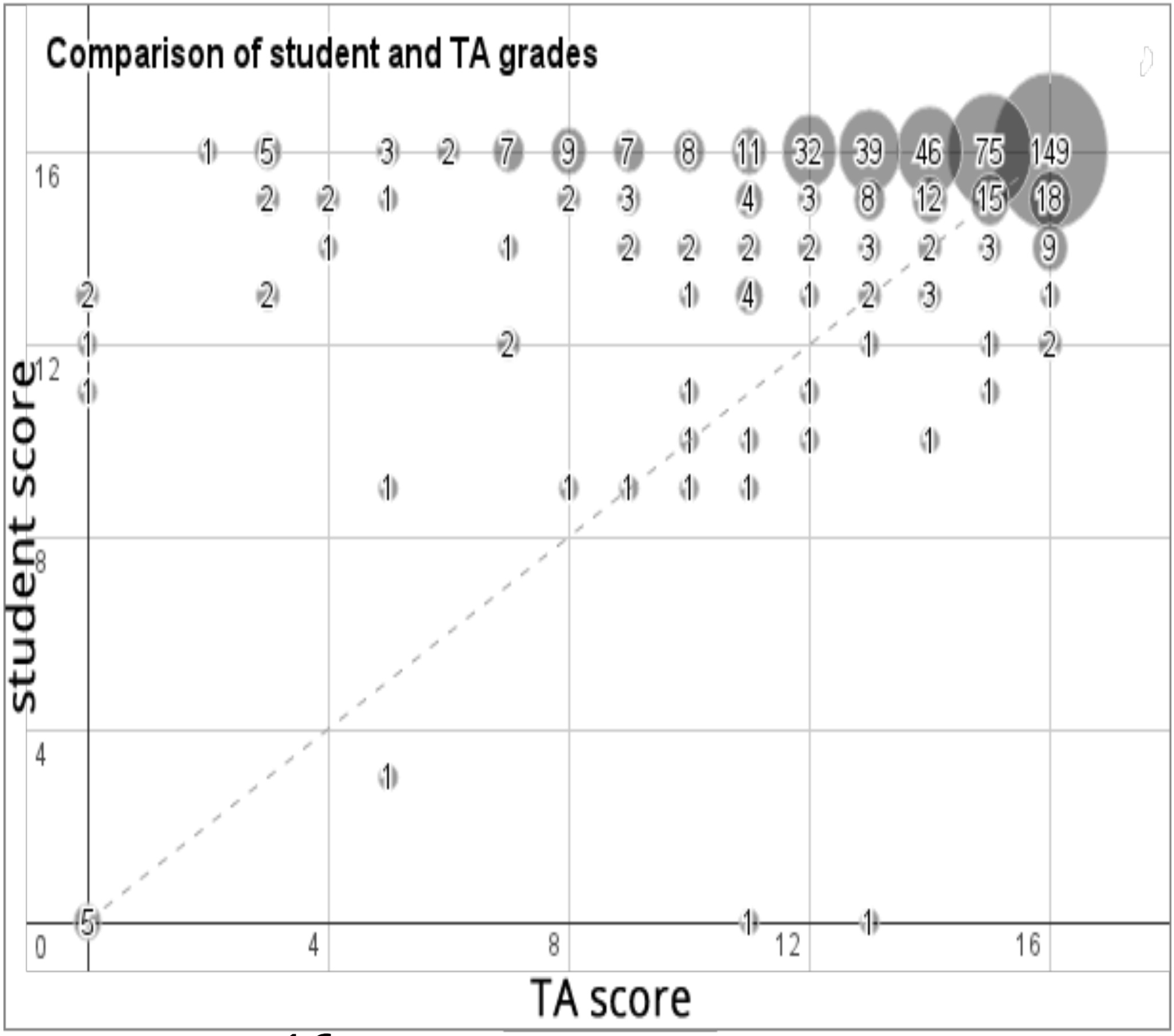
http://www.katyjordan.com/MOOCproject.html

First 3 MOOCs side-by-side

#1	#2	Adv.
154K	127K	38K registrations
114K (74%)	90K (70%)	16K (42%) attended first lesson
19%	36%	11% FCCR (First-course-to-completion ratio)
22K	24K	1.6K students completed course
4.5	4.6	4.7 Net Promoter Score (out of 5)
98%	99%	99% of survey respondents said they would recommend this course to friends (n=651)
40%	40%	NA mean improvement in performance

Adv. PSWG MOOC: Self-evaluation



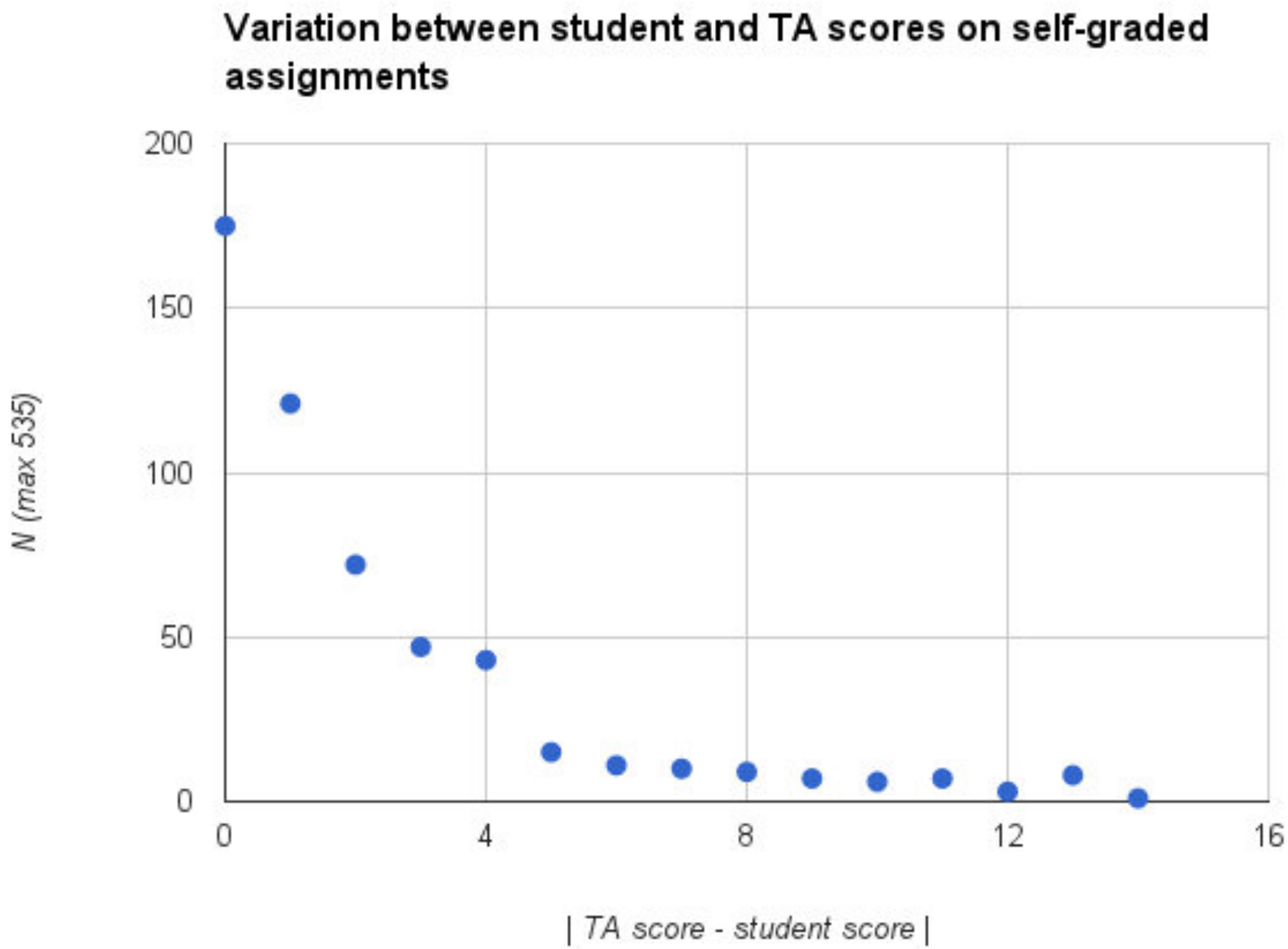


max score: 16

APSWG

55% within 1 point

73% graded at least a B by TAs


Variation between student and TA scores on self-graded assignments
200
150
100
50
0
N (max 535)
0
4
8
12
16
| TA score - student score |

What we learned…

1. **Comparing different kinds of content offerings can be revealing**
2. **Looking at the forums for content-you-don't-expect can be revealing**
3. **Self-grading scores could be better. But how?**

#4: Our fourth MOOC

Mapping * June, 2013

Mapping with Google (June 2013)

41,455 registrants

21,837 active students

Mapping with Google

Discover new ways to navigate the world around you with Google Maps and Google Earth.

Improve your use of new and existing features of Google's mapping tools.

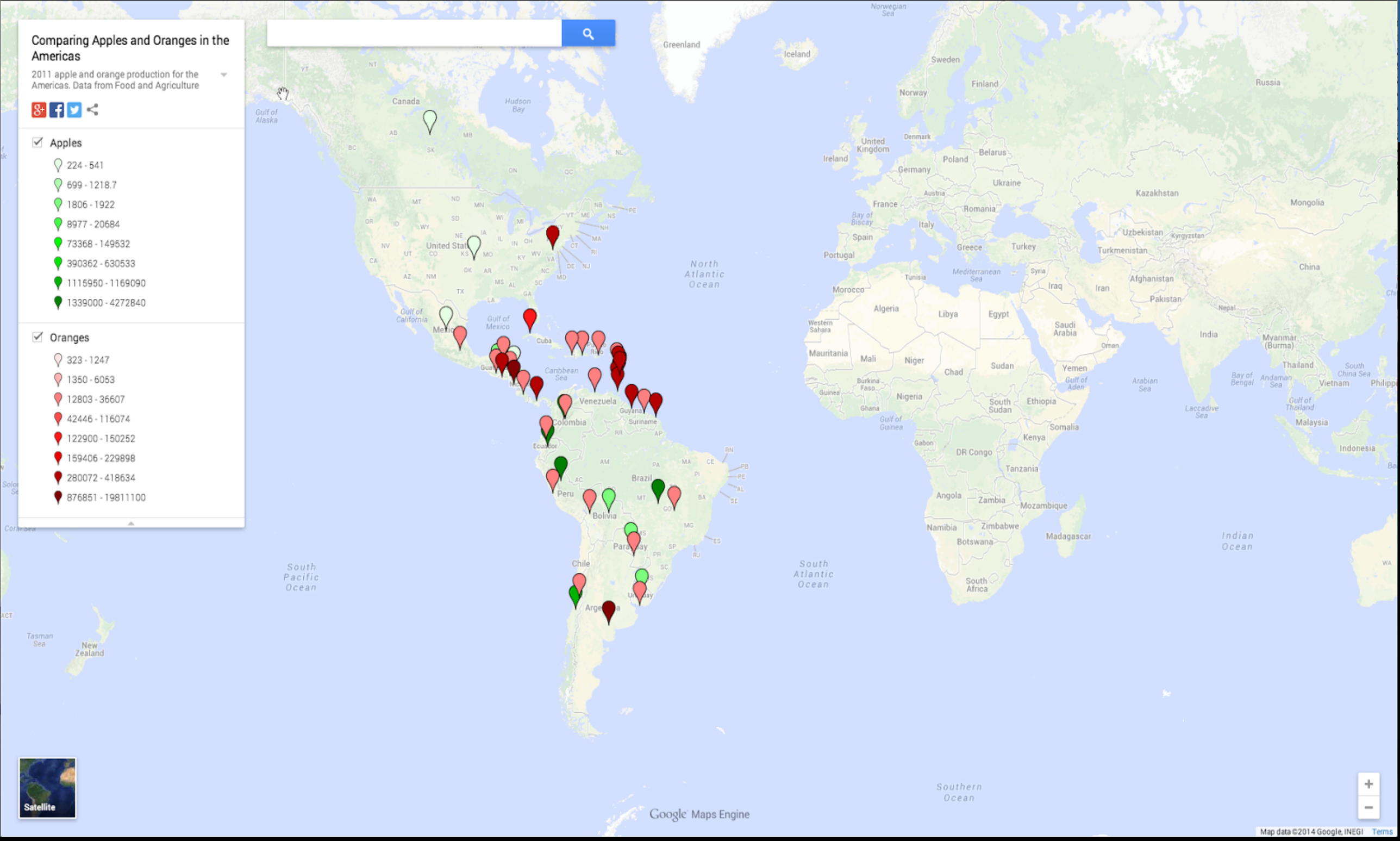
Choose your own path. Complete a project using Google Maps, Google Earth, or both, and earn a certificate of completion.

Schedule

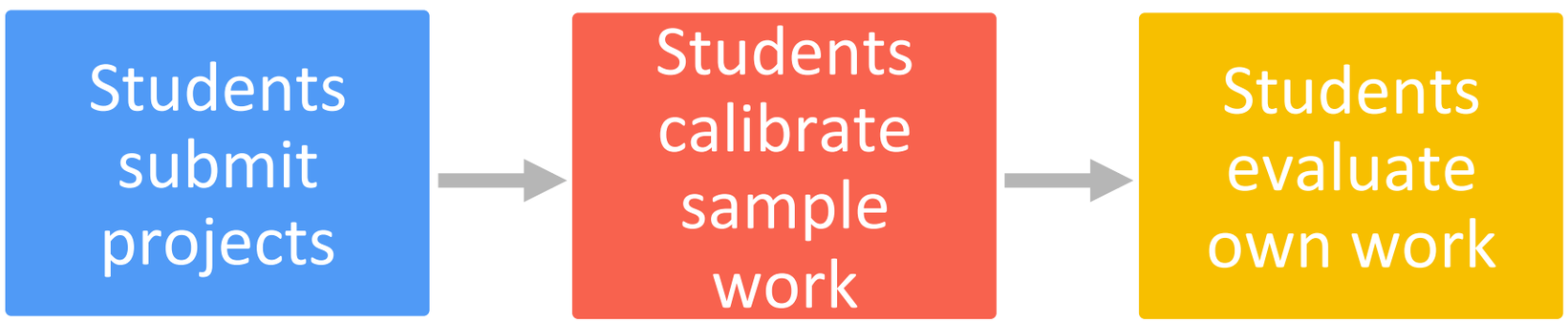
Unit 1 - Course Overview	June 10
Unit 2 - Google Maps	June 10
Unit 3 - Google Maps Engine Lite	June 10

My Profile

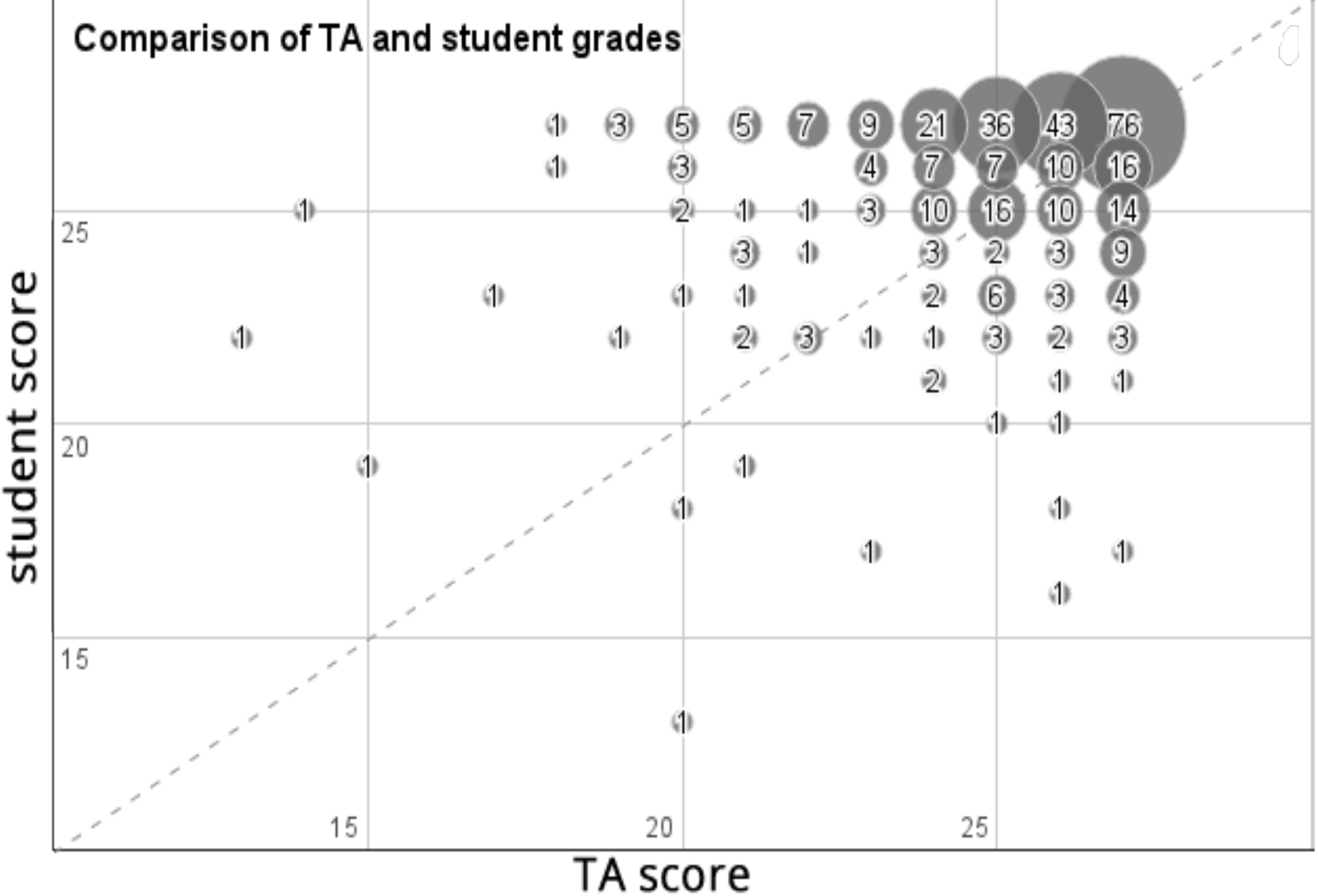
My Goal for the course :	I'm interested in seeing how this online course is taught and not aiming to learn about Google's mapping tools


Comparing Apples and Oranges in the Americas
2011 apple and orange production for the Americas. Data from Food and Agriculture
Apples
224 - 541
699 - 1218.7
1806 - 1922
8977 - 20684
73368 - 149532
390362 - 630533
1115950 - 1169090
1339000 - 4272840
Oranges
323 - 1247
1350 - 6053
12803 - 36607
42446 - 116074
122900 - 150252
159406 - 229898
280072 - 418634
876851 - 19811100
Satellite
Google Maps Engine
Map data ©2014 Google, INEGI
Terms

Mapping MOOC: Self-evaluation



Staff score random sample (11.6% of 3,303 submissions)



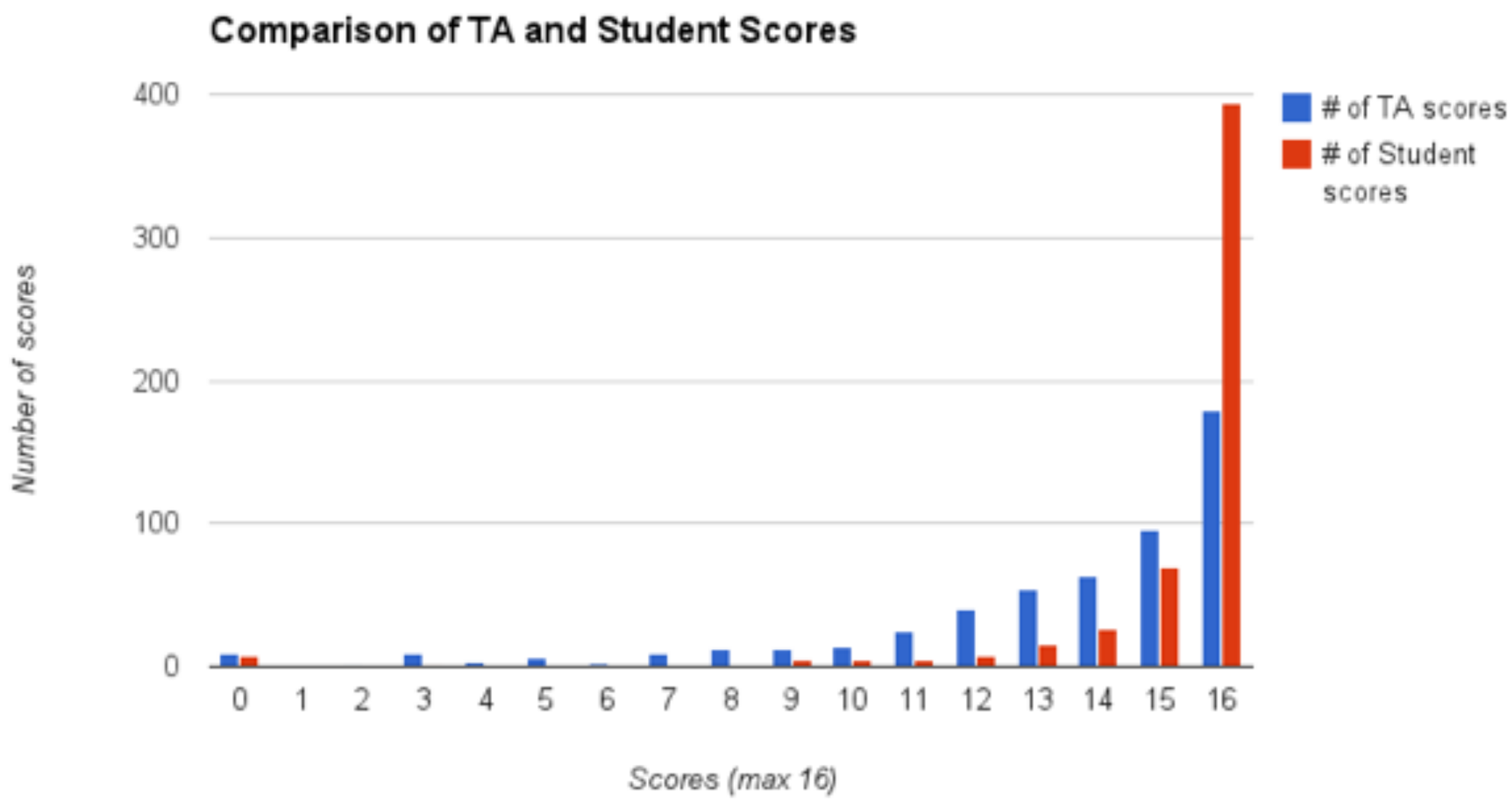
Mapping

72% within 2 points

94% scored at least a B by TAs

max score: 27

Self-graded assignments (example + rubric)



- 72% of grades ± 2 point of TA grade
- r = 0.44

TAs graded 535 assignments (random 20% sample)

APSWG	Mapping
55% within 1 point	**72%** within 2 points
73% graded at least a B by TAs	**94%** scored at least a B by TAs

3. What advanced feature(s) did you apply to your tour?

a. The tour is narrated (with text or audio)
b. At least one placemark includes a look around (360 d
c. A path is included
d. The tour has a nice flow: not choppy, flies through
e. A polygon is added
f. The kmz file is embedded in a website
g. The default touring settings have been changed
h. The tour goes under water
i. Other media (music, images, audio, clips) have bee
j. Overlays and 3D models have been included
k. The tour shows changes over time using historical i
l. The tour includes an imported KMZ/KML file
m. The tour uses street view

1. What problem are you trying to solve?
   a. Is the goal written as a complete sentence or phrased as
   b. Does the description include why this research was impor

2. What questions do you need to answer in order to achieve your re
   a. Are there at least three smaller or related questions?
   b. Are the steps sequenced appropriately?
   c. Are the questions directly related to the goal of the resear

Sample Google Maps pr

Instructions

Sample answers

1. What story are you telling with your ma

Sample Answer :

This map shows the locations of and amou North and South America.

2. What is the URL of your map?

Sample Answer:

https://mapsengine.google.com/map/edi

3. Did you change the base map for your m

Sample Answer :

Yes, I selected the Light Political to show

4. What advanced feature(s) did you apply

a. Add another column to the data
b. Add a second (or more) layer to the m
c. Create a polygon to show the bounda
d. Import data from a spreadsheet
e. Apply advanced styling to a layer
f. Add lines to connect points and gene
g. Collaborate with a peer on your map
h. Embed your map on a website

Sample Answer :

b,d,e,m

Evaluate sample project 1

Answer the questions below based on the sample project.

1. Does your map have a title?

   ◯ Yes ◯ No

2. Does your map have a description?

   ◯ Yes ◯ No

3. How many points are in your map?

   ◯ 0 ◯ 1 ◯ 2 ◯ 3 ◯ 4 ◯ 5 or more

4. How many points have titles?

   ◯ 0 ◯ 1 ◯ 2 ◯ 3 ◯ 4 ◯ 5 or more

5. How many points include a relevant description?

   ◯ 0 ◯ 1 ◯ 2 ◯ 3 ◯ 4 ◯ 5 or more

6. How well does the styling enhance the distinction between map points?

   ◯ 0 ◯ 1 ◯ 2 ◯ 3 ◯ 4 ◯ 5

7. 7. How well do the advanced features included enhance the clarity of the map?

   0: no advanced features, 5: advanced features make it easy for viewers to understand the purpose of the tour

   ◯ 0 ◯ 1 ◯ 2 ◯ 3 ◯ 4 ◯ 5

Calculate Score

How do we know what students want to get from the course?

A: Just ask.

Pre MOOC survey

Please answer the following questions to enroll in Mapping with Google. This information will help us improve the course and maximize your learning experience.

1. **Full Name [REQUIRED]**

   Note: The name entered here will be used on certificates at the end of the course.

2. **What goal do you hope to achieve by signing up for this course? [REQUIRED]**
   - ○ Learn new things about Google's mapping tools in general, without necessarily completing the course
   - ○ Learn about a specific Google Maps feature that I need, without necessarily completing the course
   - ○ Learn about a specific Google Earth feature that I need, without necessarily completing the course
   - ○ Complete the requirements to earn a Google Maps certificate
   - ○ Complete the requirements to earn a Google Earth certificate
   - ○ Complete the requirements to earn a Google Maps and Google Earth certificate
   - ○ I am interested in seeing how this online course is taught and not aiming to learn about Google's mapping tools

Pre MOOC survey

	Students intending to complete course	Students **not** intending to complete the course
Mapping with Google	53%	47%
Intro Web Accessibility	56%	44%

Post MOOC analysis of behavior (N=20,977)

Goal	Students who met or exceeded
learn...	
new things	62%
a specific Maps feature	65%
a specific Earth feature	19%
earn a certificate	
Google Maps	25%
Google Earth	13%
Google Maps + Earth	25%

Post MOOC survey vs. analysis

	Course completers
Survey: Met their goal	91%
Behavioral Analysis	91%

Big takeaways…

- **Completion rate:**

  -many exogenous factors at work

- **MOOCs as a public service – low stakes vs. high stakes**

- **Role of community**

- **Content as software**

  - Iterate / test / debug / deploy / not locked into slow cycle

- **What makes MOOCs work?**

  - social factors (sense of a class)

SUMMARY: How do we know?

- **Big data is great… but…**
- **Validate, validate, validate.**
- **For low-risk, free courses, non-completers might be the majority… and might well be completely satisfied**
- **Worth it to dig into marginal errors**
- **Remember there are real students with real lives behind those data streams**

end

"All models are wrong,
But some are useful"

George Box
Empirical Model Building and Response Surfaces, (1987)

SearchResearch1.blogspot.com

Wednesday, February 1, 2012

Wednesday search challenge (Feb 1, 2011): Where are you?

Imagine the following situation: You've had a sudden episode of amnesia while on a trip and have suddenly just woken up in a strange place. You have no idea where you are. All you know is that **this** is the view out the window.

You need to get your anti-amnesia medicine to prevent blacking out again and you need it fast.

Insurance will cover the cost of sending your medicine via courier, but you need to know where to tell them to go.

Question: Where are you? Can you find the street address, in what building, in what city?

Wednesday, April 24, 2013

Wednesday search challenge (4/24/13): What kind of trees are these?

On a beautiful spring day I went for a bike ride up into the foothills of the Santa Cruz mountains, the hills that make up the western part of Silicon V
Up in those rolling hills lie fragmentary groves of trees, remnants of the time when Silicon Valley was called "Valley of Heart's Delight."

I paused and took the following picture. When looking at it later, I realized that I didn't know what kind of trees these were. The Valley of Heart's D
was once home to a thriving agricultural industry, but in this particular case, I couldn't identify them through the photo.

But after about 1 minute of SearchResearch, I was able to determine a whole bunch of information about this site. Can you?

Wednesday, May 22, 2013

Wednesday search challenge (5/22/13): Finding political cartoons FROM the day...

Wednesday, July 11, 2012

Wednesday search challenge (7/11/12): Where can I get that book?

True Story: I've been traveling a bit, and I find myself constantly taking pictures of stained glass everywhere I go. (Disclaimer: I used to m
glass pieces, mostly when I was an undergraduate and had time for this kind of hobby work, so I've always had a real interest in this area.)