



Evaluating Faculty and Student Use of Digital Resources for Teaching and Learning

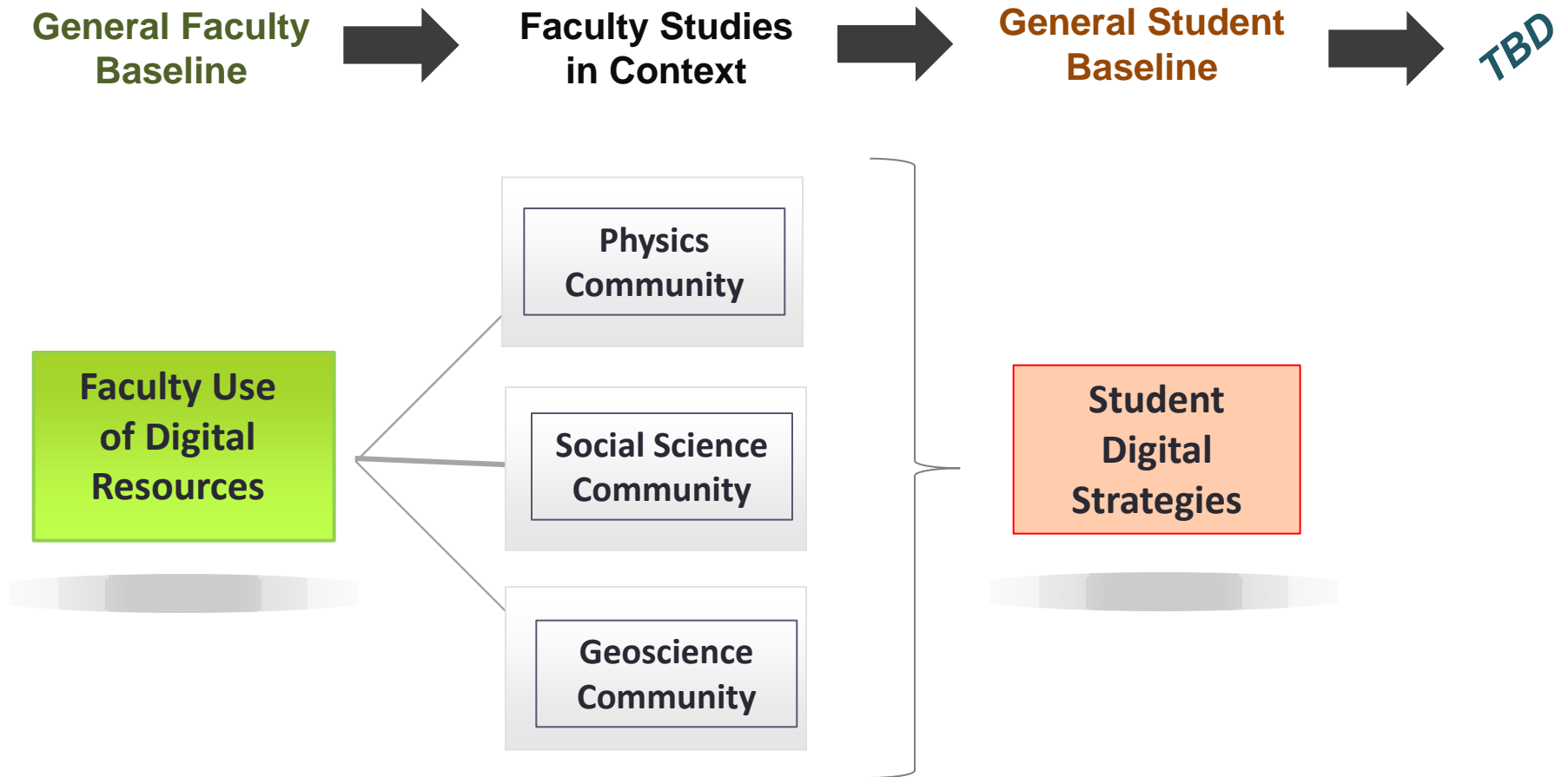
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WHY STUDY DIGITAL RESOURCES?

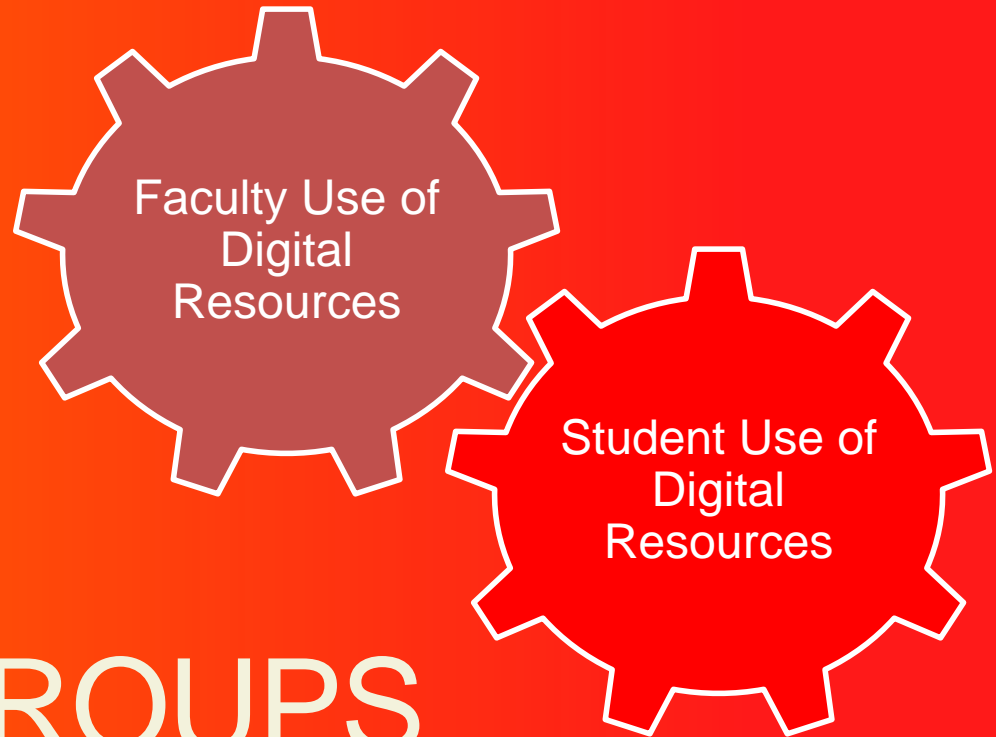
- ◆ How people interact with scholarly content is changing
- ◆ Roots in NSDL and other digital library initiatives
- ◆ People had only studied how faculty used specific collections or how students did research papers
- ◆ No one knew how faculty or students found & used materials



A STUDY BEGINS...A STUDY EVOLVES



Each evolution of our original study opened us up to new techniques and new potential for the data and data collection



FOCUS GROUPS

Starting With Focus Groups

Faculty (2006)

What did we know? ---Not much.

RQ1 - How do faculty use online materials in teaching?

RQ2 - How do materials align w/ faculty work patterns?

RQ3 - What makes online materials useful for teaching?

Students (2011)

What did we know? ---A little.

RQ1 - How do students use digital learning resources?

RQ2 - Why do students use these resources?

RQ3 - What is the impact of this use on students' learning?

RQ4 - What are the barriers to their use?



Focus Group Findings

Faculty (2006)

- Digital Resources over '~~Learning Objects~~'
- Personal definitions of digital libraries (DLs) varied widely
 - Personal web-pages, curated collections, browsers
- Very few people knew about NSDL (or other DLs)
- Barriers to use
 - Google
 - Information overload
 - Concern about copyright and use
 - Not invented here



Focus Group Findings

Students (2011)

- Very information literate (savvy)
- Used Web as supplement to class materials (text books still very important)
- Social networking important, but most worked alone
- Iterative use of Wikipedia - Google - friends - textbooks
- Advice
- Students are over surveyed



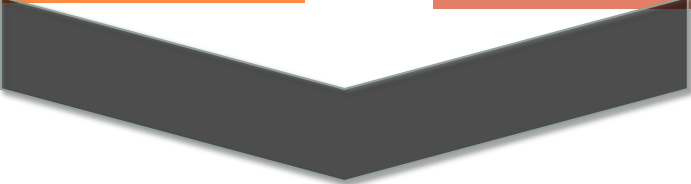
How Focus Groups Informed Our Surveys

Faculty(2006)

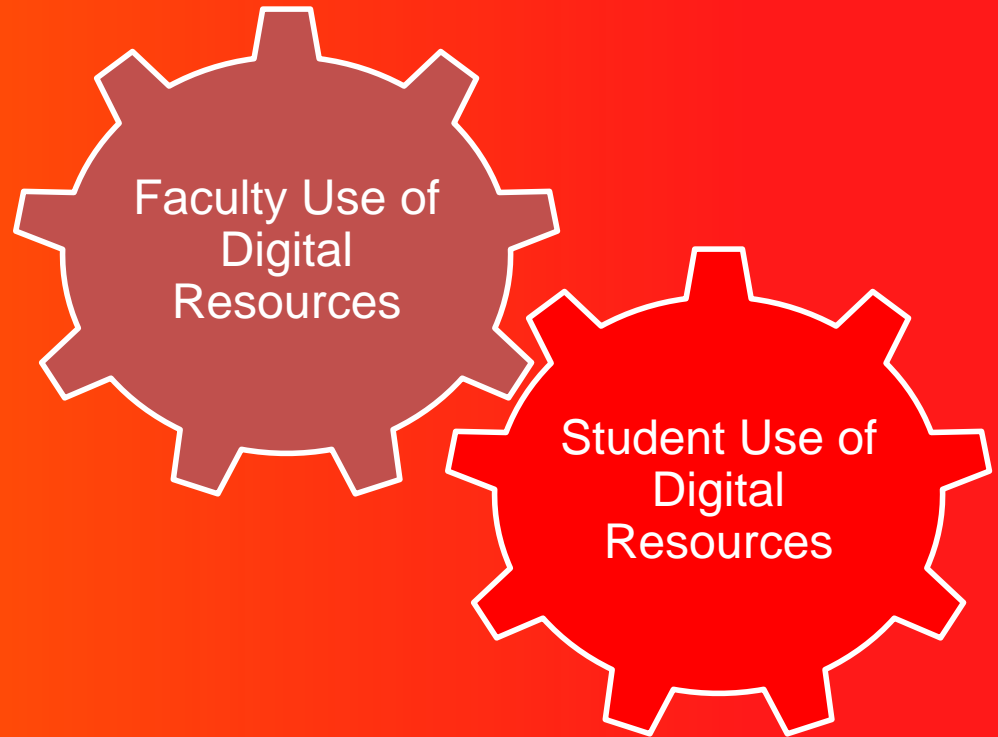
- Language –
 Digital Resource
- Barriers

Students (2011)

- Demographics
- Study/learning habits affect choice/use
- Reach to ALL students



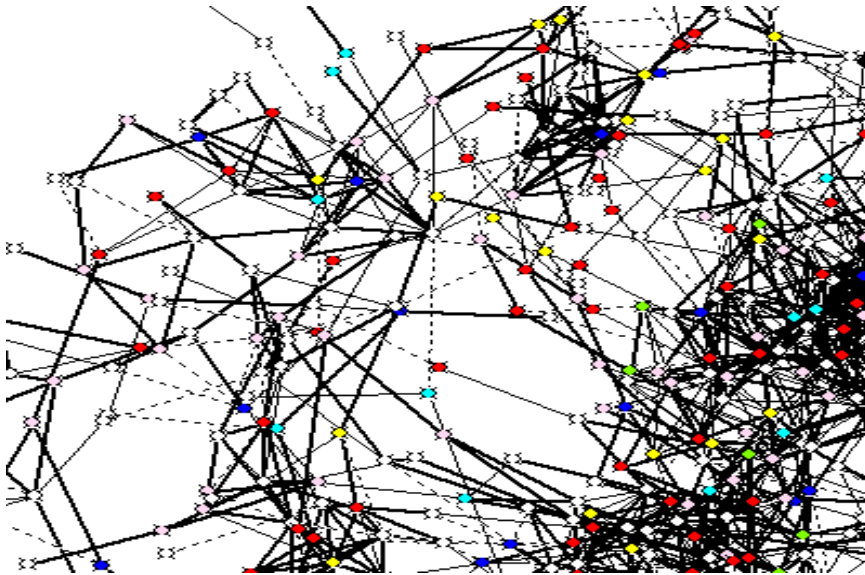
Both directly informed the survey process that emerged from the focus groups.



SURVEYS

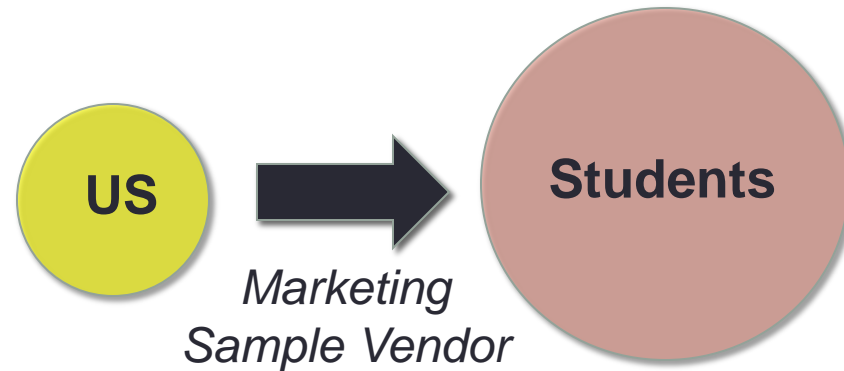
Survey Administration

Faculty (2006)



Large Sample Attained N=4,479
BUT administration relied on complex, high-touch, messy administration. Campuses were the (sometimes reluctant) go-betweens.

Students (2011)



Large Sample Attained N=1,749
Went more directly to students. Nice variation in sample. Used Marketing vendor for sample.
MUCH EASIER!

Student Sample Lemonade



We do not have a variable to select students. From our panel

Sample Vendor
(Survey Monkey
Audience)

Student Sample Lemonade



We do not have a variable to select students. From our panel

Sample Vendor
(Survey Monkey Audience)

OK- select on a limited age range (18-30) and we will ask in the survey if they are past/ current/ never been students.

US



We now have 3 useful groups to compare:

- Current students (full time part time, etc.)
- Past students / Alumni
- Never students/ Never went to college

Survey Findings (“6-Word Mottos”)

Faculty (2006)

**“Many chefs make
lots of soup!”**

Lots of data, lots of comparisons.
Experienced a bit of “paralysis by analysis” Some of the most interesting relationships were the most complex to explain.

Students (2011)

**“Develop frameworks
to understand the
results”**

Limited, shorter survey.
Borrowed market research techniques/ analysis to help make findings more useable/ approachable.

Early Student Findings...



Ambivalent Learners

48% of Sample

This segment addresses learning problems using a plan (at least they *believe* that they have a plan). But, mostly, they do not feel strongly about their learning. They are confident in their ability to find information, but do not enjoy studying nor do they have a need to learn. This is the largest learner segment from the sample.



Adaptive Learners

26% of Sample

This segment exhibits a lot of characteristics of "ideal" learners (They solve problems with a plan, they are systematic, they set goals, they ask for help if they experience a problem, they enjoy studying and have a need to learn). A differentiator in this group is that there is more variance around setting specific times to study. For example, this could be a learner who studies in a hallway whenever they had some free time.



Free Form Learners

13% of Sample

This group is not systematic in their learning, and do not solve problems with plans. But they are willing to change what they do when presented with new information (may speak to an experiential type of learner). This group also feels like they have a need to learn, but are among the least likely to set aside specific time to study.

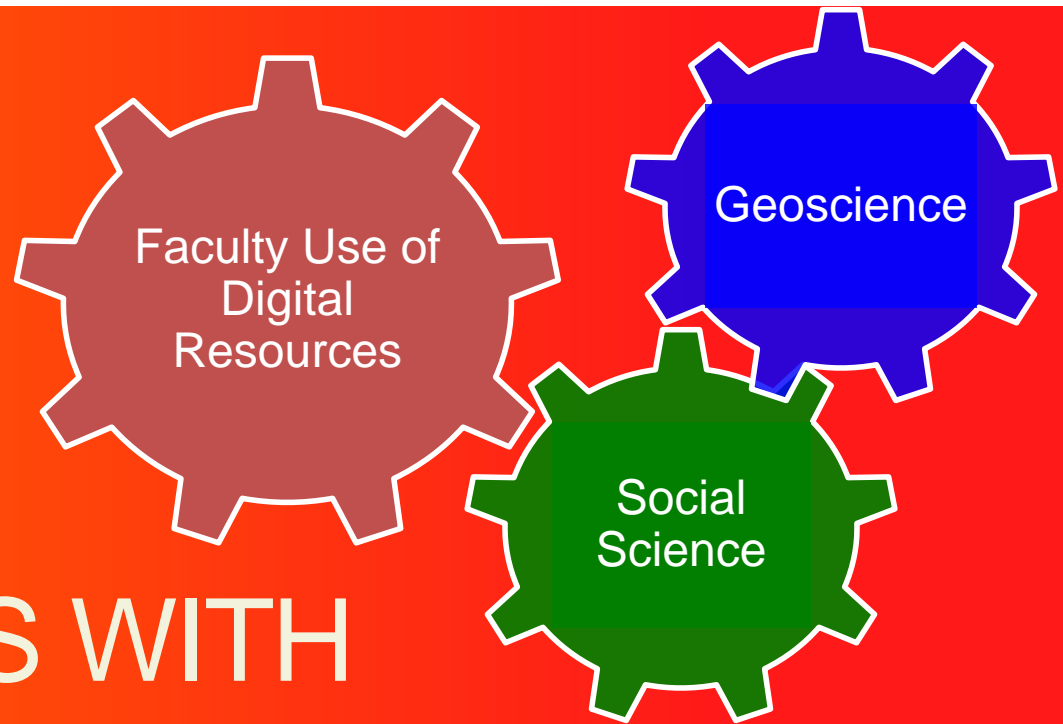


Time Sensitive Learners

11% of Sample

This segment is similar to the adaptive learners in many ways (use a plan, are systematic, etc), but they are just not quite as strong in these skills. Directionally they are identical to adaptive learners. The other key difference is that this group is the most likely to set specific times to study, and least likely to ask for assistance with a problem. This is also the smallest learner segment.

LINKING INTERVIEWS WITH SURVEY METHODS



Using Interviews with Surveys

All STEM
faculty

Focus
groups



Survey

Social Science
faculty

Survey



Interviews

Geoscience
faculty

Survey

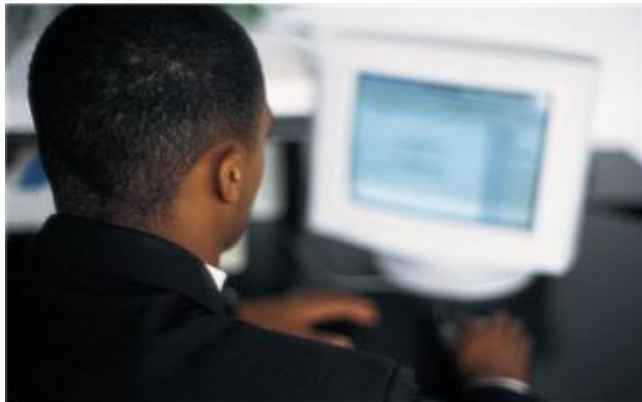


Web analytics
and interviews

Social Science Faculty Study Design

Survey

- Use digital resources
- Assess quantitative literacy



Qualitative Study

- Approach teaching
- Identify potential website users



Social Science Faculty Study Design

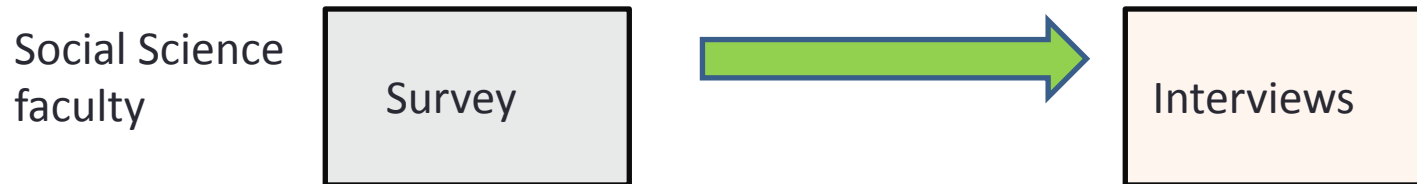
Survey

- Administered in 2010
- Sent to 3280 faculty (stratified sample*)
- 1037 responses (32% response rate)

Qualitative Study

- Interviewed 27 survey respondents in Fall 2011
- Interviewed additional two-year and economics faculty (5 participants in Spring 2012)

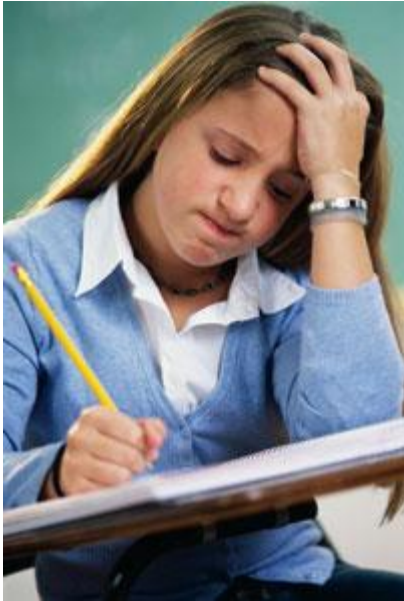
Social Science Interview Study



- Detect differences between faculty at different institutional types
- Learn more about the teaching practices of instructors at different institutions
- Understand more specifically how faculty used digital resources to support their teaching



Making sense of survey data



Survey:

- Reducing student anxiety with using quantitative data **not important** for setting goals for course

Interviews:

- Student anxiety with quantitative data was **major challenge**

ID target audience

	#11 et. al., Use	#35, Motivation	#37 & #38, heard of &/or used ICPSR, SSDAN	Part of the target audience?	#3, Years teaching
Sociology, Methods	high user	high motivation	heard of ICPSR, used ICPSR	target audience	5
Political Sci., Methods	high user	high motivation	heard of ICPSR, used ICPSR	target audience	25
Economics	high user	moderate motivation	heard of both, not used either	target audience	18
2YC Sociology	high user	moderate motivation	not heard of either, not used either	target audience	9
2YC Human Serv.	high user	moderate motivation	not heard of either, not used either	target audience	15
Sociology, Methods	moderate user	high motivation	heard of both, used both	not a target	37

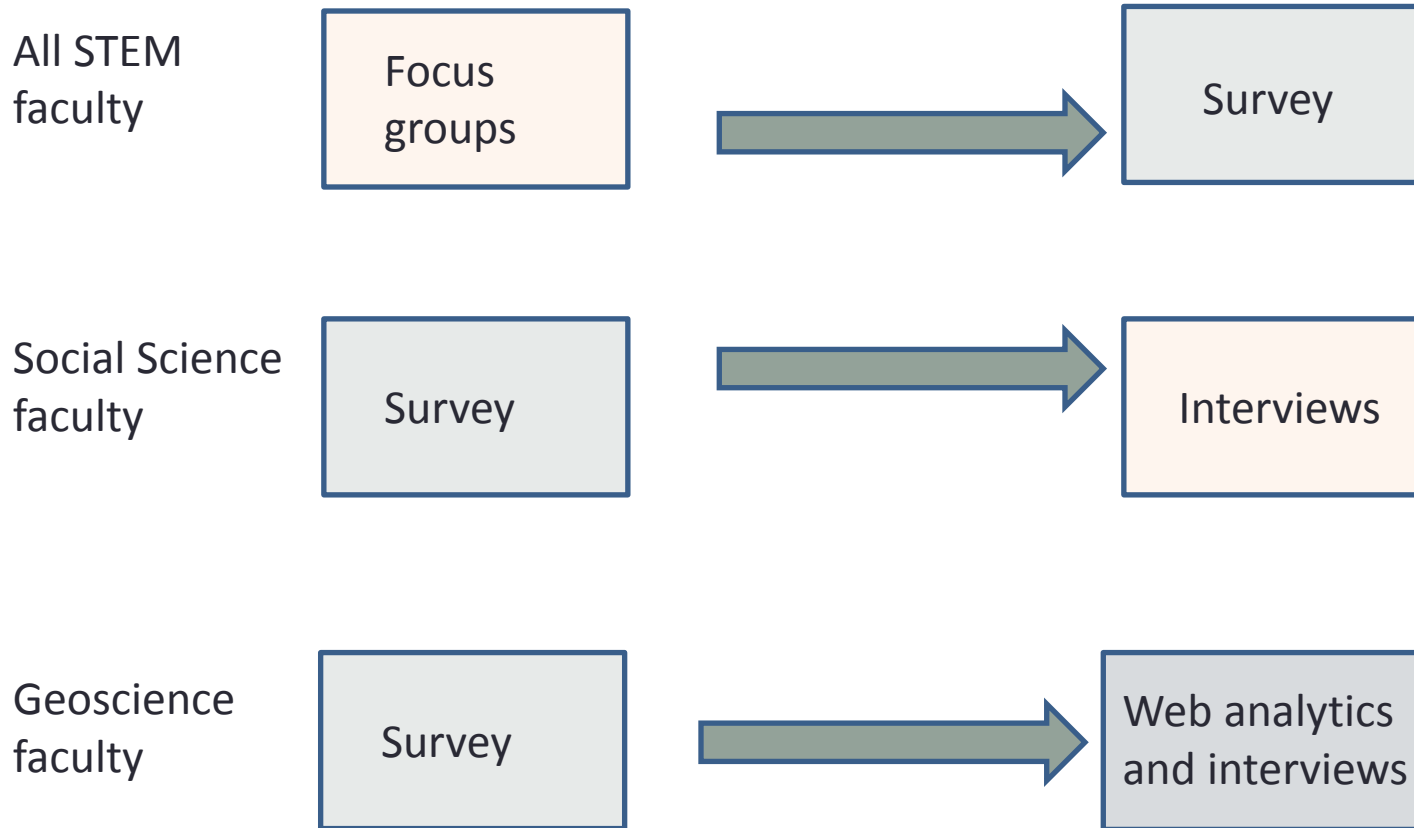
Persona 1: 2YC Instructor (non-methods/econ)

- Teach quantitative skills at a basic level
 - Know about percentages
 - Be able to interpret a graph
- For graduation: basic quantitative skills
- Pedagogy: Small group activities that engage
- Looking for short activities on an ideal website

Persona 2: Instructor at a four-year institution (non-methods/econ)

- Teach quantitative skills at an advanced level
 - Statistical tests
 - Data analysis
- For graduation: advanced quantitative skills
- Pedagogy: Lecture and deliver content easily
- Looking for relevant short video clips, blog posts, to add in to their lectures on an ideal website

3rd mixed method approaches



Case Studies

1. Six months of website use analyzed

Web Log Excerpt for a Single Deep Session

- 11:53:13 GET/resources/2304.html 11:53:13 GET/resources/23072.html
- 11:53:22 GET/redirect.php?r=http://geomechanics.geol.pdx.....
- 11:54:00 GET/resources/2304.html
- 11:54:01 GET/resources/23072.html
- 11:54:03 GET/NAGTWorkshops/
- 11:54:03 GET/NAGTWorkshops/index.html
- 11:54:13 GET/NAGTWorkshops/careerprep/index.html

Corresponding narrative

- “This is a visit to the career collection that begins with a search to a structural geology handout . . .”

Case Studies

2. National survey responses to teaching approaches and publishing history
3. Analysis of previous interview responses
4. New telephone protocol linking website use to six months of teaching

Next steps

- Classroom observation using Reformed Teaching Observation Protocol
- Collection and analysis of syllabi and assignment prompts
- Student assessment using Geoscience Literacy Exam (GLE)

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