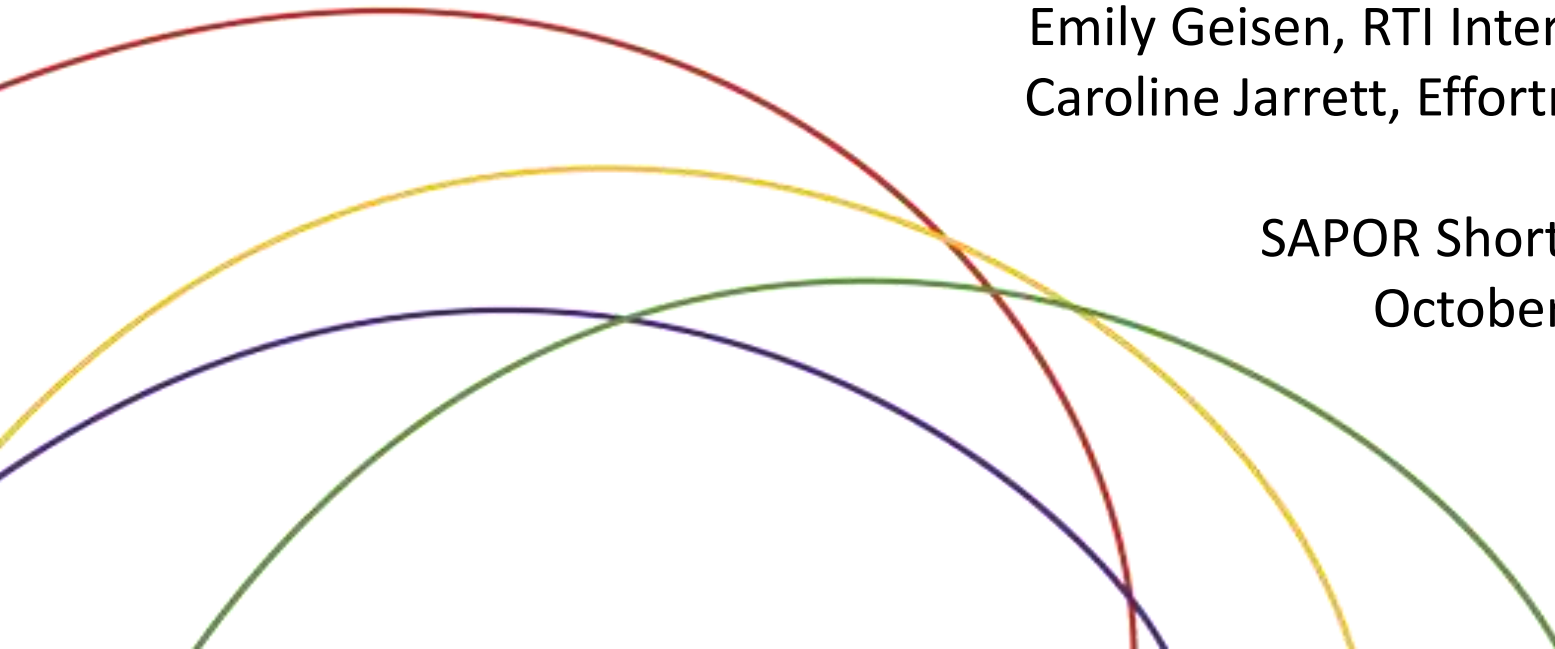


Introduction to Usability Testing for Survey Research

Emily Geisen, RTI International
Caroline Jarrett, Effortmark Ltd

SAPOR Short Course,
October 5, 2011



We would like to thank

- Sarah Cook and Liz Dean
 - Todd Hughes and Kathleen Ashenfelter
- for their contributions to this short course

Emily Geisen
egeisen@rti.org



Caroline Jarrett
carolinej@effortmark.co.uk



Session Ground Rules

- Cell phones turned to vibrate or off
- Refreshments and restrooms any time
- 10-15 break midway through
- Questions are encouraged

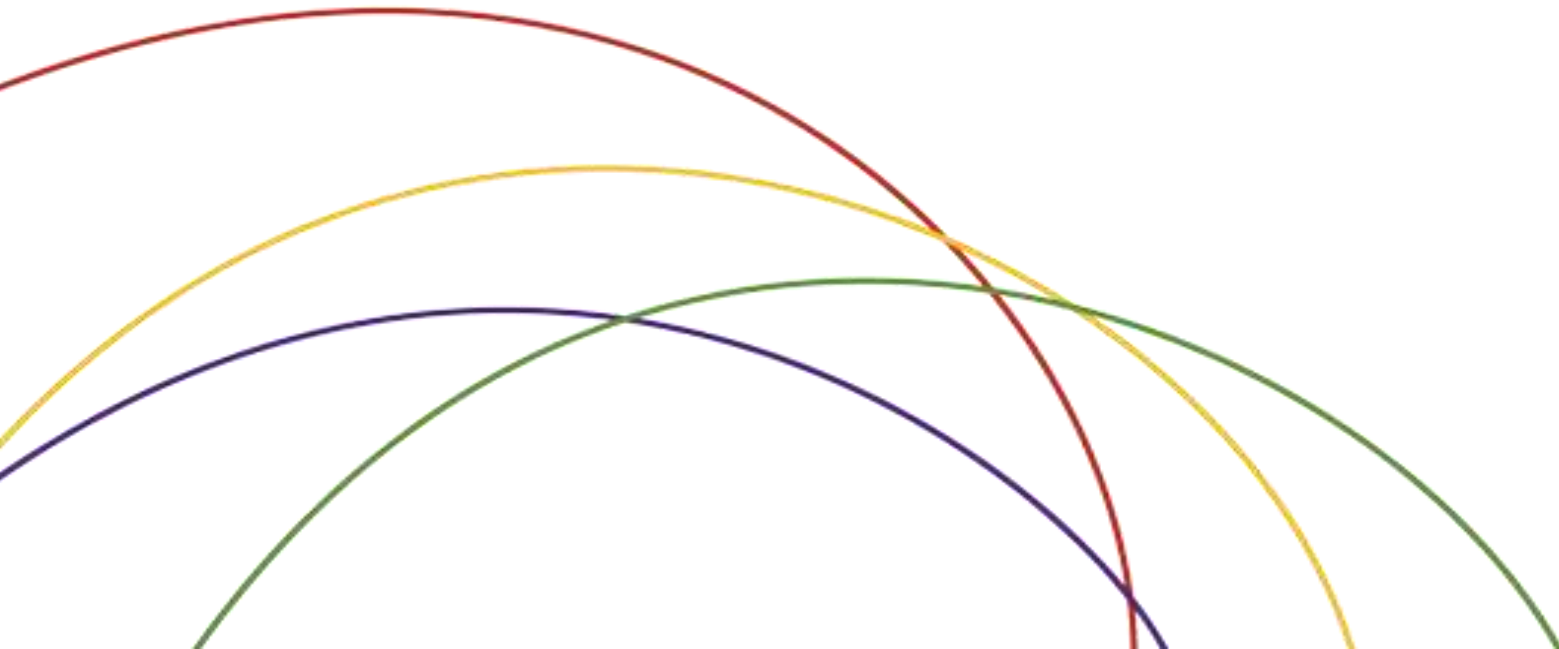
Agenda

1. Introduction
2. Demonstration
3. Survey Research and Usability
4. How to Conduct Usability Tests
5. Do-it-Yourself Practice
6. Analyzing results

1a. Definitions

What is Usability?

What is Usability Testing?



Usability: use something to do something

“The extent to which a product can be used by specified users to achieve specified goals with effectiveness, efficiency, and satisfaction in a specified context of use.”

ISO 9241:11

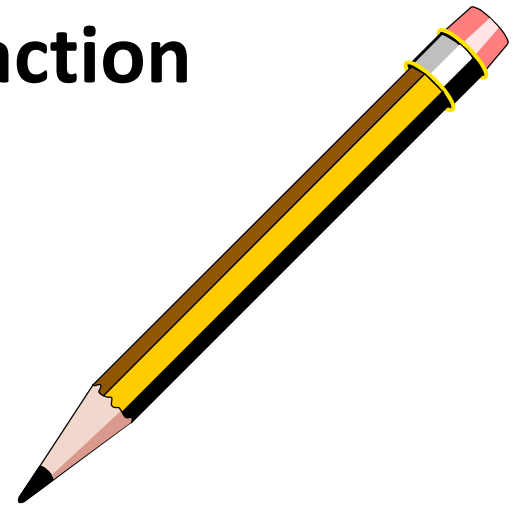
Usability: use something to do something

“The extent to which **a product** can be used by **specified users** to achieve **specified goals** with **effectiveness, efficiency,** and **satisfaction** in a specified **context of use.**”

-ISO 9241:11

What does usability mean for your survey?

- **Product**
- **Users**
- **Goals**
- **Context**
- **Effectiveness, Efficiency, Satisfaction**



Our view of usability for surveys

Product	Web sites, web surveys, paper surveys
Users	Our respondents (mostly), could also be our interviewers
Goals	They want to provide their correct and accurate opinions, stories, facts, predictions
Context of use	In their homes, offices, out and about?
Effectiveness, Efficiency, Satisfaction	Get to the end of the survey having provided accurate answers without breaking-off.

Effectiveness: achieve a goal

Efficiency: appropriate time /effort

Efficient + effective = useful

On a scale from 0 to 10, how likely do you think it is that you will enroll in a graduate school program or enroll for an undergraduate certificate or degree at any time in the future?

(Use your mouse to move the slider to your desired value.)

The value you have chosen:

7.6

0

(Not at all likely)

10

(Very likely)

Previous

Help

Next

Satisfaction is more complex

- Did it allow them to provide their accurate answers?
- Did they enjoy the experience?
- Did it require too much time to complete?
- Did they find the instrument easy to use?
- Did they find it easy to learn how to use?



Other factors may be important

- Easy to learn
- Easy to remember how to use (memorability)
- Error frequency and severity
- Accessibility
- And most crucially for surveys:
 - Data quality
 - Respondent burden

Usability testing:

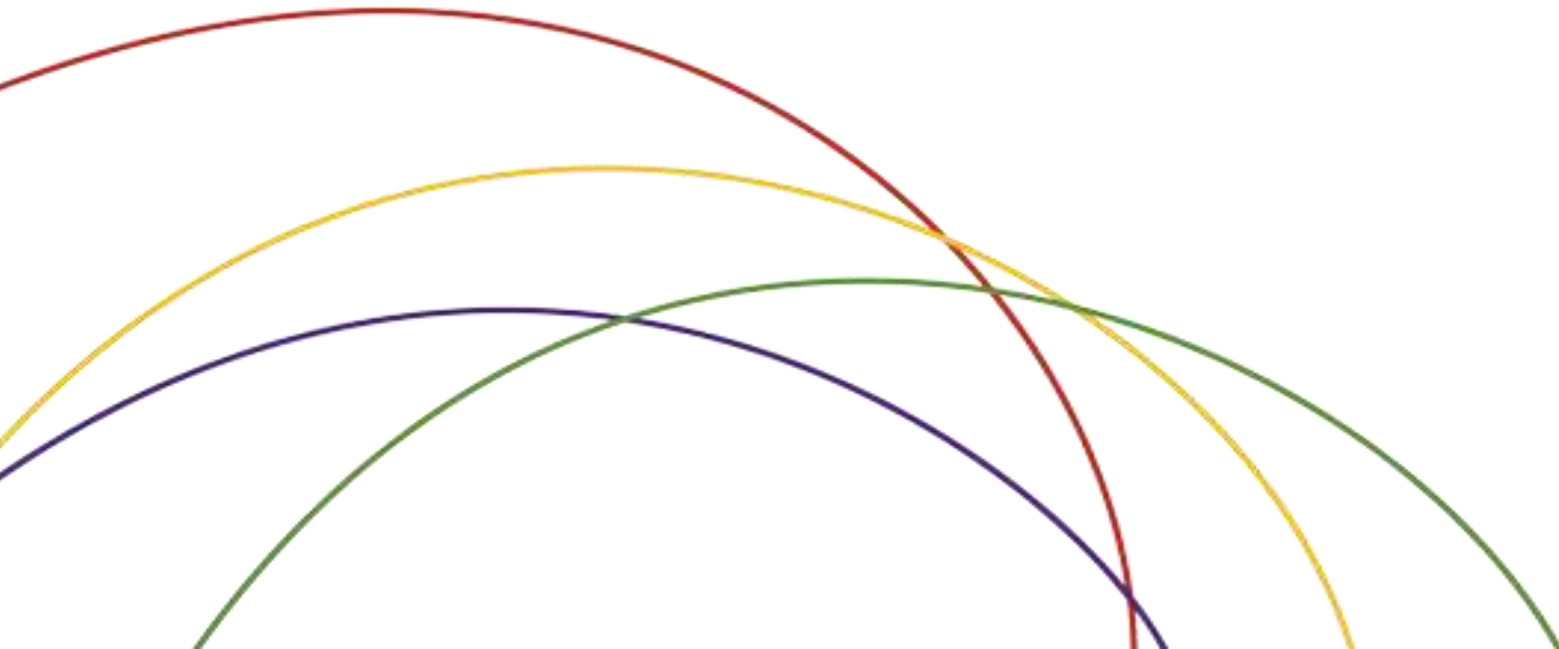
watching a user try to achieve the goal

- Participants represent real users
- Participants do real tasks
- You observe and record what participants do
- You think about what you saw:
 - Analyze data,
 - Diagnose problems,
 - Recommend changes.
- Make changes and test again



1b.

Why is usability testing needed
for survey research?



Web surveys are not websites...



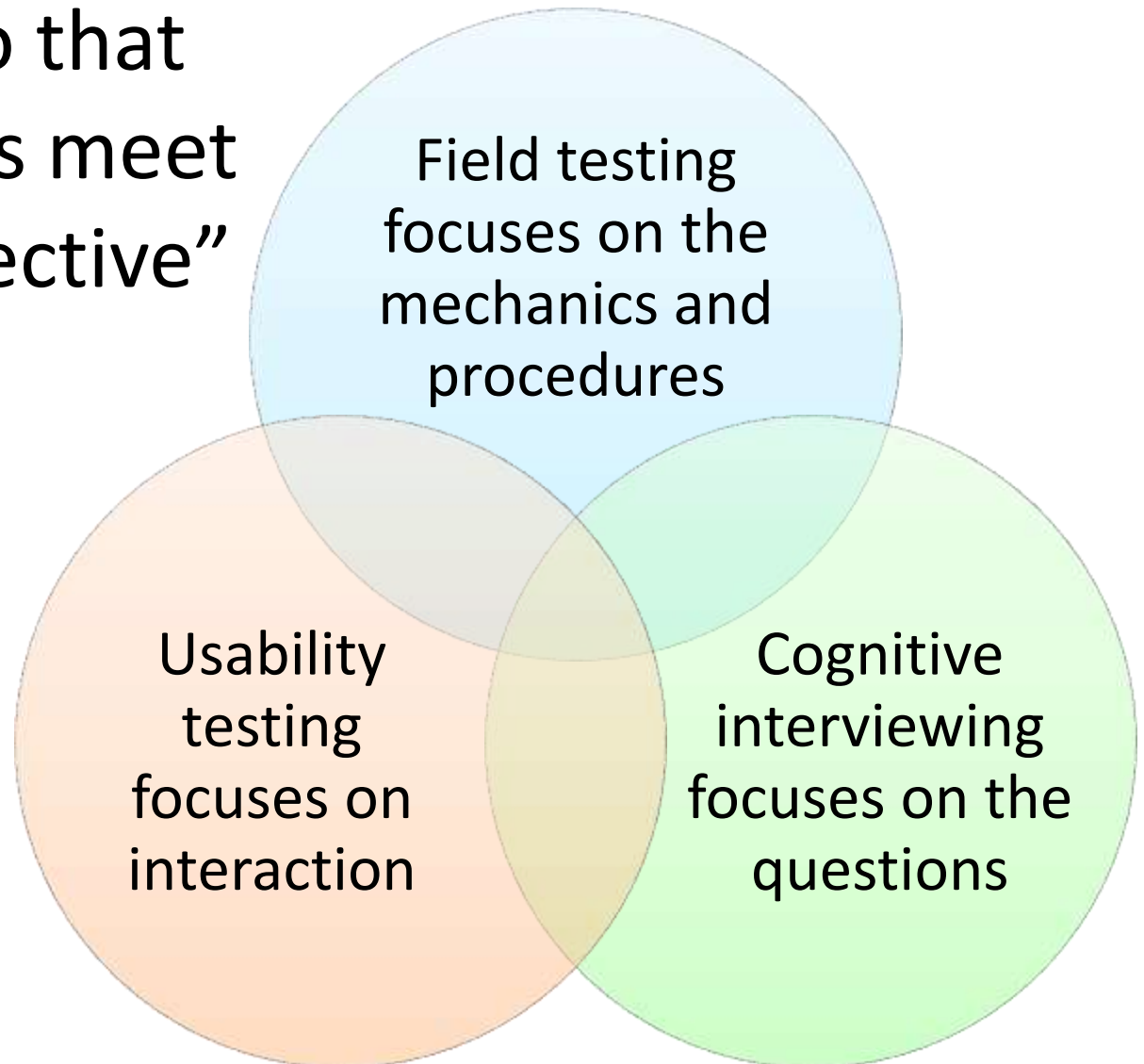
...so why is usability testing needed for survey research?

The image shows a survey page for the B&B Baccalaureate and Beyond Longitudinal Study. At the top, there is a logo for B&B and a "Logout" link. Below the logo, the user's name "Emily Geisen (EGTest1)" is displayed, along with the text "Post-BA Education/Training/B12CPSTGRD". There are two progress bars: "Overall Progress" and "Section Progress". The main text of the survey asks: "Have you enrolled in any school for an additional degree or certificate — including enrollment for a graduate degree, an additional undergraduate degree, or a certificate program — since completing your bachelor's degree requirements in the 2006-2007 school year (July 1, 2006 - June 30, 2007)?". Below this, it says: "If you have been accepted to a school for a degree or certificate program and will be enrolled in the 2011-2012 school year, also indicate 'yes.' Please only include schools in which you were enrolled after the completion of your bachelor's degree requirements." There are two radio buttons for "Yes" and "No". At the bottom, there are buttons for "Previous", "Help", and "Next".

Users are not trained interviewers

- Web surveys go to the general (or specific) public
 - Varying levels of computer expertise
 - Varying levels of literacy
 - Likely to be in a hurry, interrupted, distracted
- There is no interviewer
 - No one to interpret the questions
 - No one to navigate around the instrument

Presser et al 2004: pretesting focuses on a “broader concern for improving data quality so that measurements meet a survey’s objective”



Example: login for a web survey

- Ashenfelter, K., & Hughes, T. (July, 2011). *Results from Iterative Usability Testing of the American Community Survey (ACS)*. Presented at European Survey Research Association, Lausanne, Switzerland.
- Security guidance recommended providing a Household ID and PIN in the mail materials
- For logistical reasons, login information included on the mailing label was printed on the questionnaire

Mailing Label



ACS 946 839 215 01 111 1103 08

SEQ004-49315



TO THE RESIDENT OF:

198 Young Rd

Anytown, MD 03612

ACS Login Screen

USCENSUSBUREAU
Helping You Make Informed Decisions

**AMERICAN
COMMUNITY
SURVEY**



Welcome to the American Community Survey. You will need the materials we mailed to you to start the survey.

All the information that you provide will remain completely confidential.

[Para completar en español, oprima aquí.](#)

Please Log In

➔ Please enter the 9-digit household ID and 6-digit PIN found in the address section of your mailing materials.

Household ID:

PIN:

Login



ACS 999 999 999 01 111 1234 56
SEQ004-49315

Household ID

PIN

TO THE RESIDENT OF:
101 Main St
Anytown, MD 00043

**** WARNING ****

You have accessed a UNITED STATES GOVERNMENT computer. Use of this computer without authorization or for the purposes for which authorization has not been extended is a violation of federal law and can be punished with fines or imprisonment (PUBLIC LAW 99-474). System usage may be monitored, recorded, and subject to audit. Use of this system indicates consent to monitoring and recording.

ACS Login Screen

USCENSUSBUREAU
Helping You Make Informed Decisions

**AMERICAN
COMMUNITY
SURVEY**





ACS 999 999 01 111 1234 56
SEQ004-49315

Household ID

PIN



TO THE RESIDENT OF:
101 Main St
Anytown, MD 00043

**** WARNING ****

You have accessed a UNITED STATES GOVERNMENT computer. Use of this computer without authorization or for the purposes for which authorization has not been extended is a violation of federal law and can be punished with fines or imprisonment (PUBLIC LAW 99-474). System usage may be monitored, recorded, and subject to audit. Use of this system indicates consent to monitoring and recording.

Participants entered the example numbers instead of unique mailing label numbers

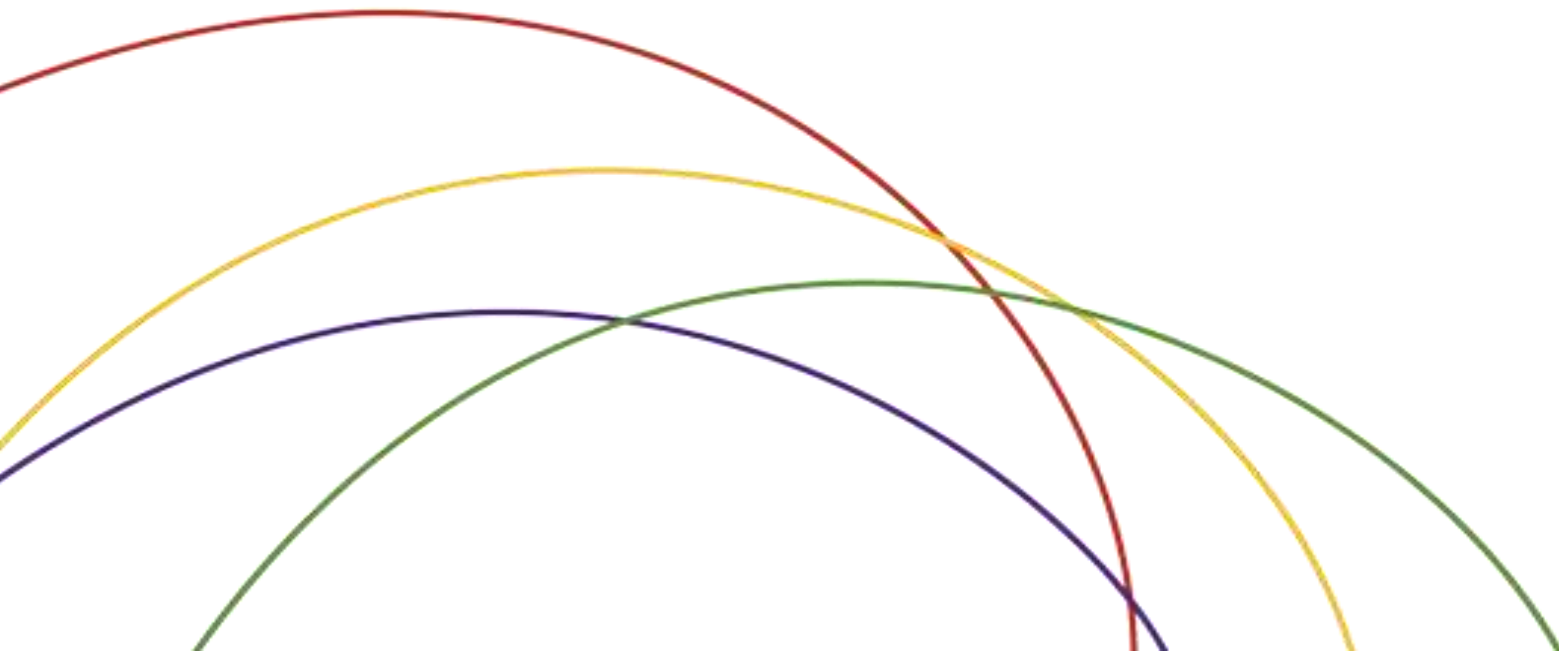
Do not include any spaces.

Household ID:

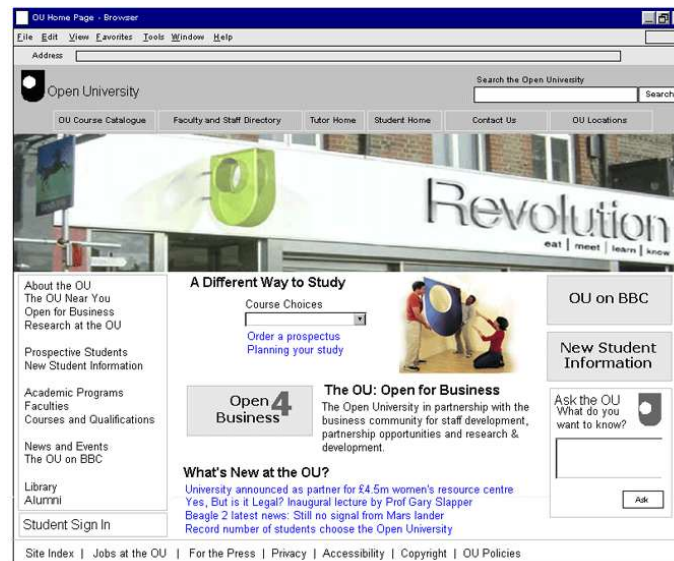
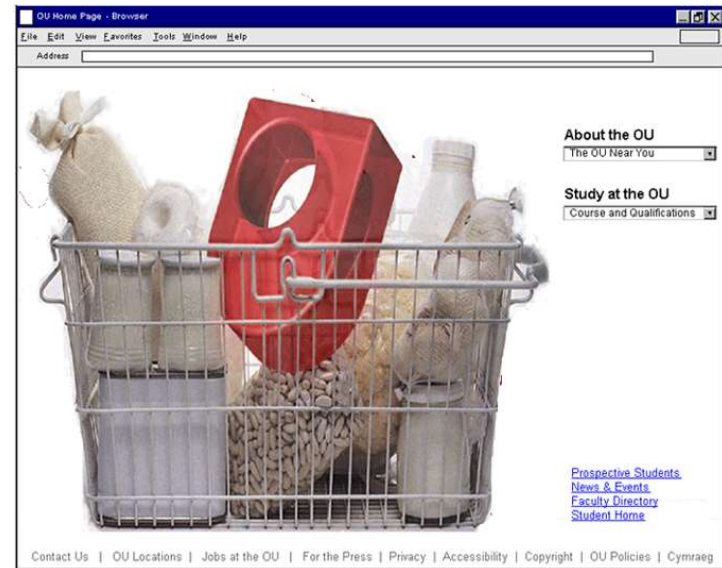
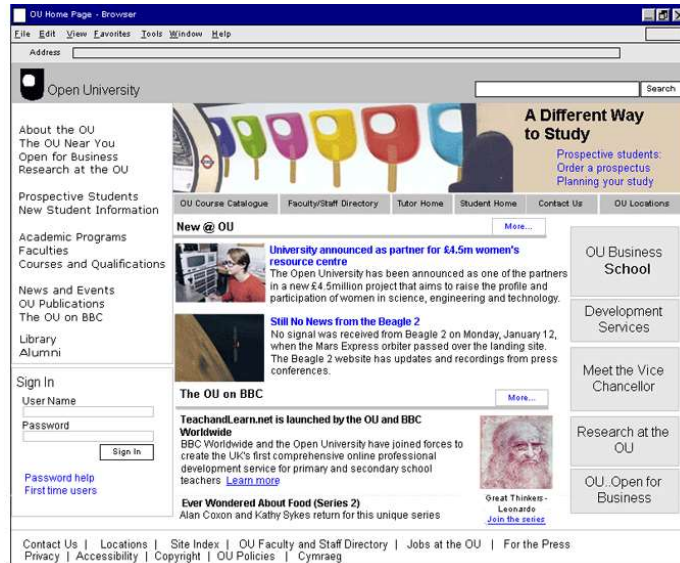
PIN:

[Login](#)

1c. Focus of survey usability testing



Example of website usability test focus: which home page works best?

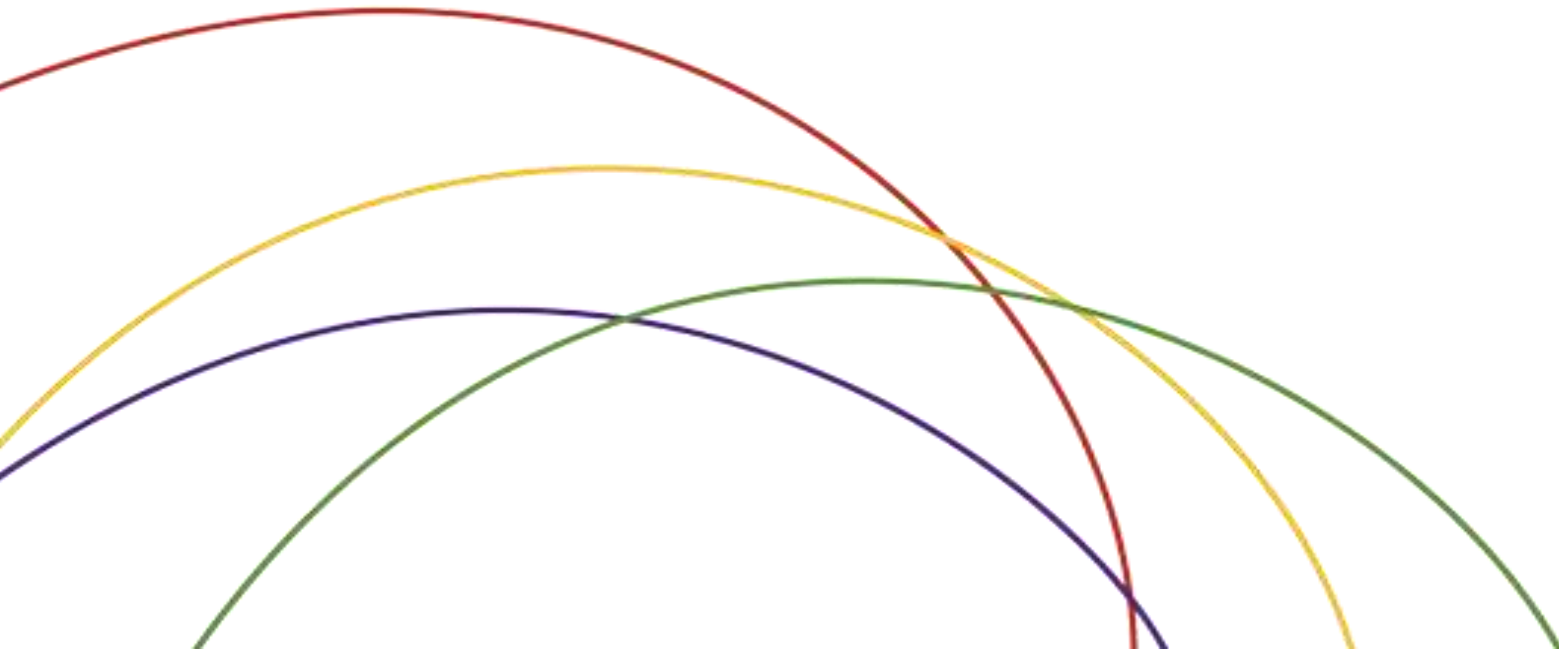


Our focus: improve data quality, reduce respondent burden

- Improve data quality
 - Prevent users from making mistakes
 - Make it easier to provide accurate data
- Reduce respondent burden
 - Allow respondents to answer without worrying about how to interact with the instrument
 - Reduce break-offs, item nonresponse, and unit nonresponse

2. Demonstration of Usability Test

Survey of Graduate Students and
Postdoctorates in Science and
Engineering (GSS)



Background on GSS

- Establishment survey, completed by admin
- Respondents provide a list of departments at their university that...
 - Are science, engineering and health related
 - Have graduate students or postdocs
- For each department, respondent provide
 - Counts, race/ethnicity, citizenship, financial support data

Why did we conduct testing on the GSS?

- Evidence that respondents were not updating their list of departments each year
- Revised survey to emphasize the need to review list of departments and update
- Wanted to see if participants could actually update their listing

The demo video will include...

- Usability testing introduction
- Description of scenario/tasks
 - Scenario: new PhD departments at school
 - Task 1: complete survey as usual
 - Task 2: update list of departments
- Background questions to build rapport
- Completing the survey

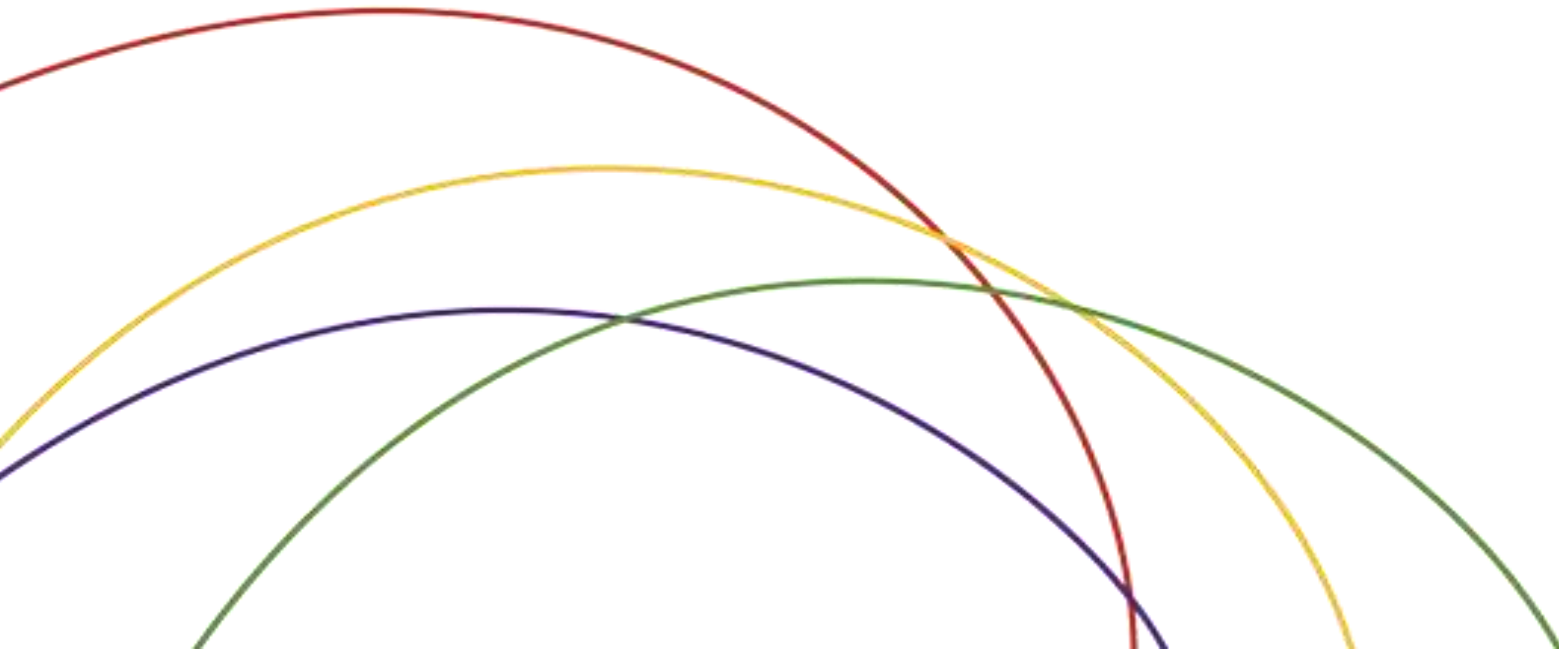
Take notes as you watch!

- What do you observe?
- What should we do about it?

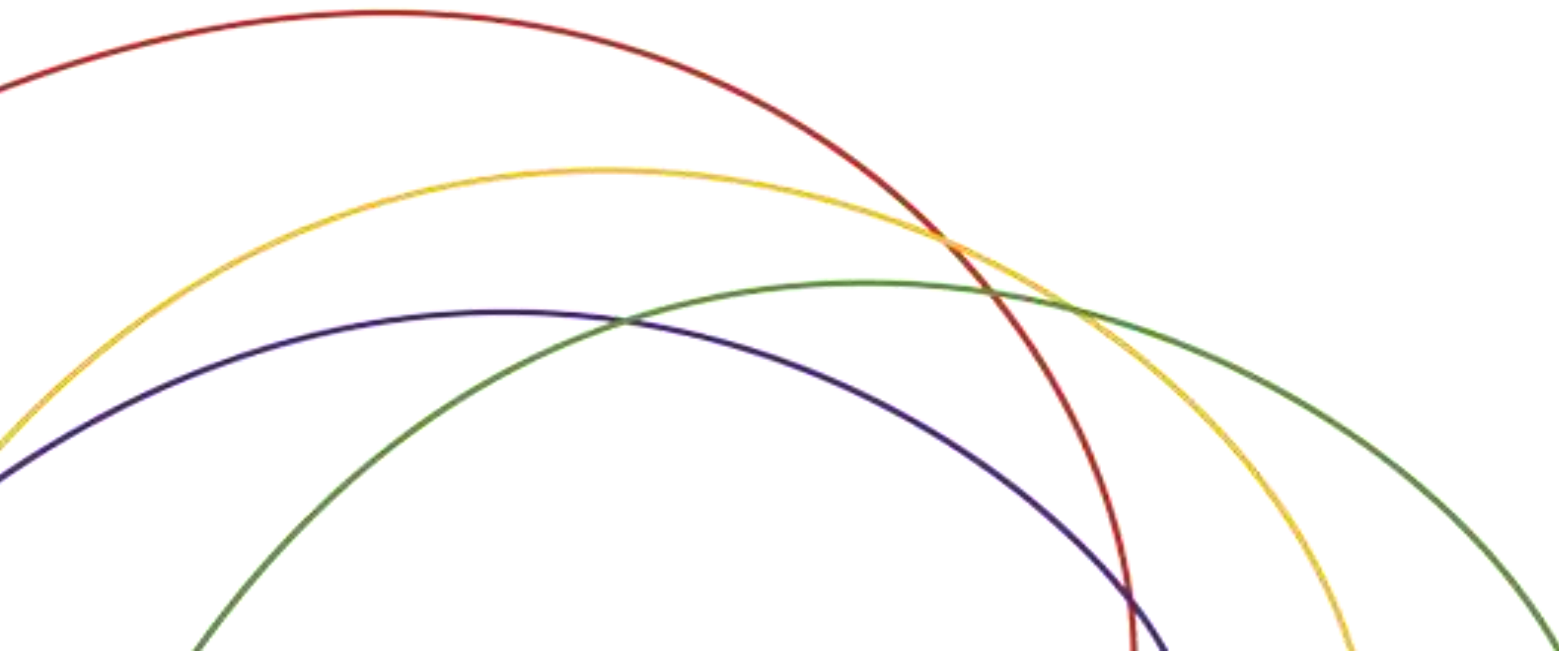


3. Survey Research and Usability

How to build usability testing into
your survey development process



3a. Theory and Best Practices



Principles for user-centered design

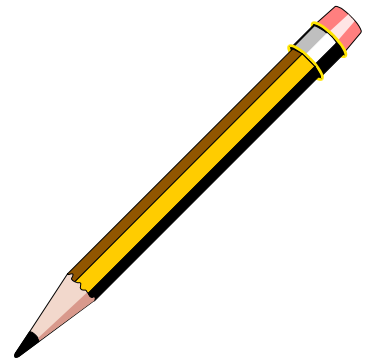
- a) The design is based upon an explicit understanding of users, tasks and environments
- b) Users are involved throughout design and development
- c) The design is driven and refined by user-centred evaluation
- d) The process is iterative
- e) The design addresses the whole user experience
- f) The design team includes multidisciplinary skills and perspectives

-ISO 9241-210



What does this mean for survey testing?

- I will show a couple examples of usability testing with surveys
- Think about which principle, the example is addressing



Example: Graduate Student Survey (GSS)

- Background
 - GSS collects data about graduate students and postdocs in different fields of study
 - NSF wanted to modify GSS to capture data at a more consistent and detailed level (e.g., programs instead of departments)
- The design approach
 - Redesigned parts of survey using this model
 - Conducted usability testing

Created a Hierarchy to Collect Data

- School/College: The Graduate school
 - Department: Biological Sciences
 - Program: Cell Biology
 - » Provide counts of graduate students in cell biology by race/ethnicity, sex, etc
 - Program: Botany
 - » Provide counts of graduate students in botany by race/ethnicity, sex, etc
 - Department: Physics
 - Program: Atmospheric physics
 - » Provide counts of graduate students in cell biology by race/ethnicity, sex, etc

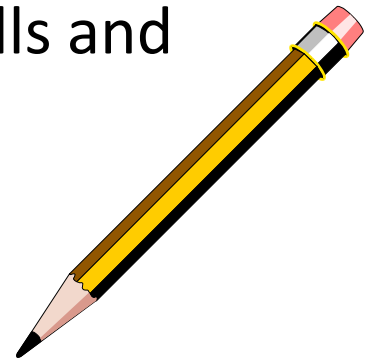
Survey Framework Did Not Fit Users

- No common terminology
 - What is a department vs program?
 - Used other terminology altogether: division, concentration, track, field, subject
- No common hierarchy or structure
 - Departments within programs and vice versa
 - No departments, just programs
 - Some departments had programs, some didn't
- Information not available at level desired



Which principle was that an example of?

- a) The design is based upon an explicit understanding of users, tasks and environments
- b) Users are involved throughout design and development
- c) The design is driven and refined by user-centred evaluation
- d) The process is iterative
- e) The design addresses the whole user experience
- f) The design team includes multidisciplinary skills and perspectives



Example 2

- **Concern:** Want to know best method for providing definitions in web surveys
- **Ask:** Has this been done before?
- **Start with** the literature:
 - Conrad, Couper, Tourangeau, Peytchev (2006)
 - Peytchev, Conrad, Couper, Tourangeau (2007)
 - Peytchev, Conrad, Couper, Tourangeau (2010)

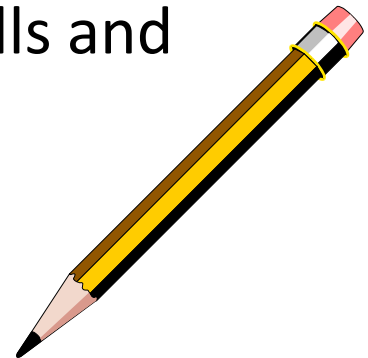
Example 2:

- Methods
 - Experiment 1: One-click, two-clicks, click and scroll
 - Experiment 2: roll-over, one-click, two-clicks
 - Experiment 3: hover-over vs always included
- **Conclusions:**
 - Reading definitions probably improves accuracy
 - Less effort required, more likely to read definitions

Citizenship, Ethnicity, and Race of full-time students (report students in whole numbers)		Full-time graduate students					
		Total full-time			Of Col. 3 total, how many are first-time?		
		Male 1	F				
Calculate Totals		<i>First-time graduate students</i> are those enrolled for graduate-degree credit in your organizational unit for the first time in fall 2010. This may include graduate students previously enrolled in another graduate degree program at your institution or at another institution. It may also include students that already hold another graduate or professional degree. Only count full-time, first-time students in these columns.					
Foreign nationals with temporary visas, regardless of ethnicity or race		A	0				
U.S. citizens and permanent residents (non-U.S. citizens holding green cards)							
• Hispanic/Latino ethnicity (one or more races)		B	0				
• Non-Hispanic/Latino (one or more races)							
One race, American Indian/Alaska Native		C	0	0	0	0	0
One race, Asian		D	0	0	0	0	0
One race, Black/African American		E	0	0	0	0	0
One race, Native Hawaiian/ Other Pacific Islander		F	0	0	0	0	0
One race, White		G	0	0	0	0	0
More than one race (non-Hispanic/Latino)		H	0	0	0	0	0
• Ethnicity/race unknown or not stated		I	0	0	0	0	0
Total full-time students (sum Rows A - I)		J	0	0	0	0	0

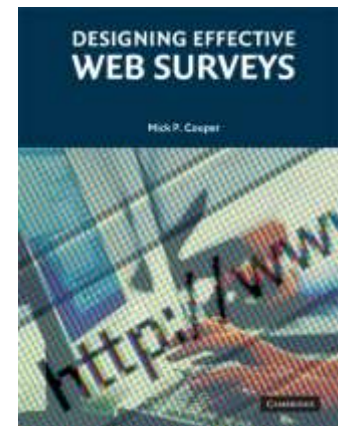
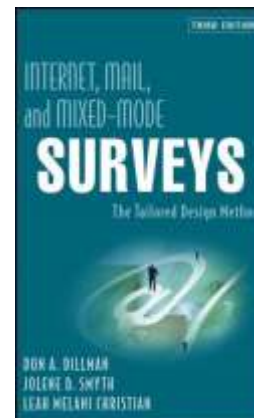
Which principle was that an example of?

- a) The design is based upon an explicit understanding of users, tasks and environments
- b) Users are involved throughout design and development
- c) The design is driven and refined by user-centred evaluation
- d) The process is iterative
- e) The design addresses the whole user experience
- f) The design team includes multidisciplinary skills and perspectives



User-centered evaluation includes best practices/findings from literature

- Start with web & survey best practices
- Abundance of literature:
 - *Designing Effective Web Surveys* (Couper)
 - *Internet, Mail, and Mixed-Mode Surveys* (Dillman)
- Both these focus on
 - Good survey design
 - Good web design



Build off the literature before doing usability testing

- Usability testing will show you how well or how easily people can do method A
- Will not necessarily show you that method A is definitively better than method B
- Not a replacement for large, probability-based methodological experiments
- Works best for exploratory testing

Start with the literature, but decide what's relevant for your study

- The literature may not focus on the study population needed for your survey
- May not be any literature on the particular topic or issue your survey has
- And sometimes the experts just don't agree, then what?

WEB DESIGN FUNNIES

Today's episode: "Religious Debates"

featuring...

Caroline makes a suggestion...

Kim the
Project
Manager.

Rick from
Marketing

Bob the
Developer

Caroline the
Designer

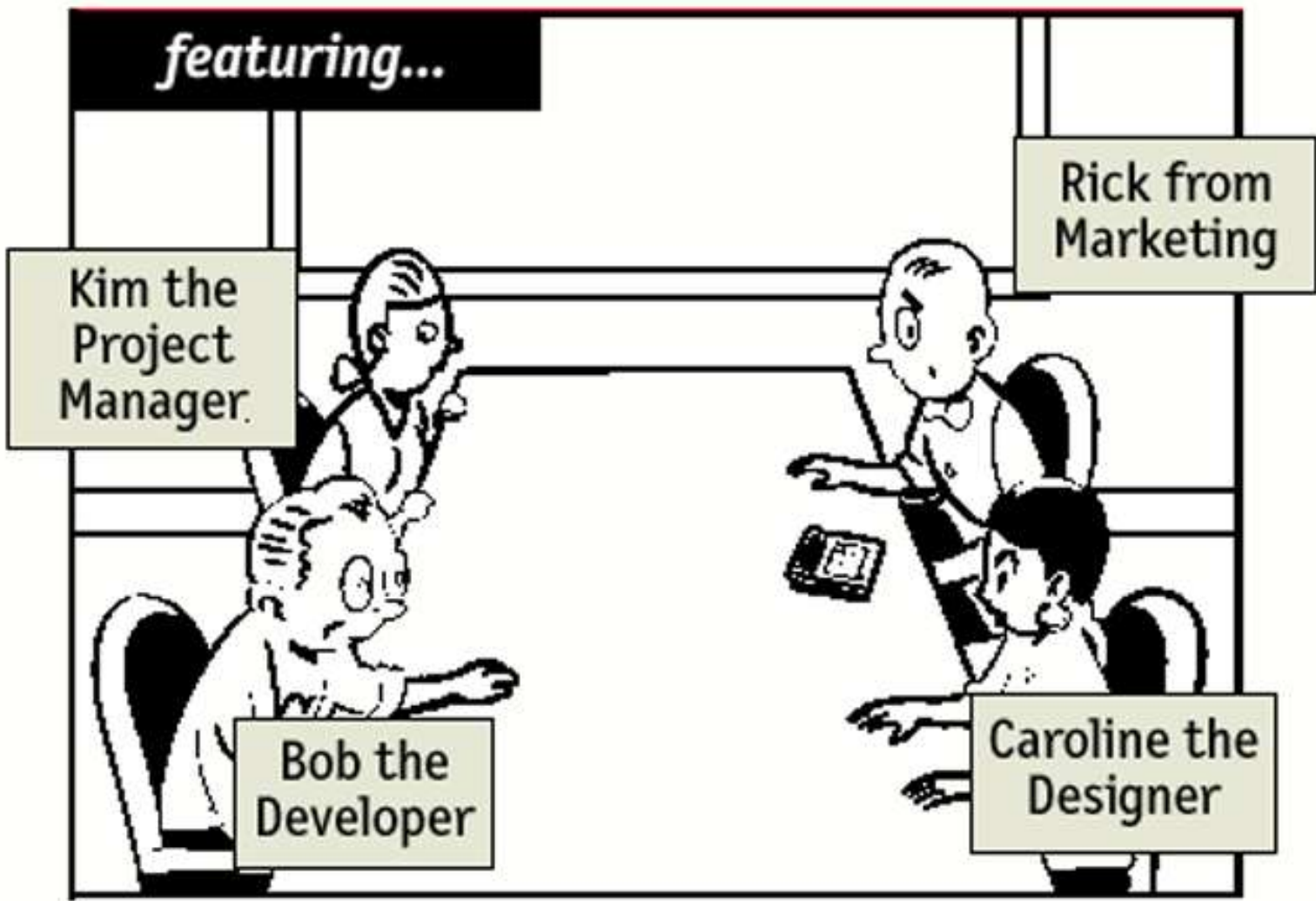
We could use a
pull-down menu for
the product list.

I hate
pull-downs.

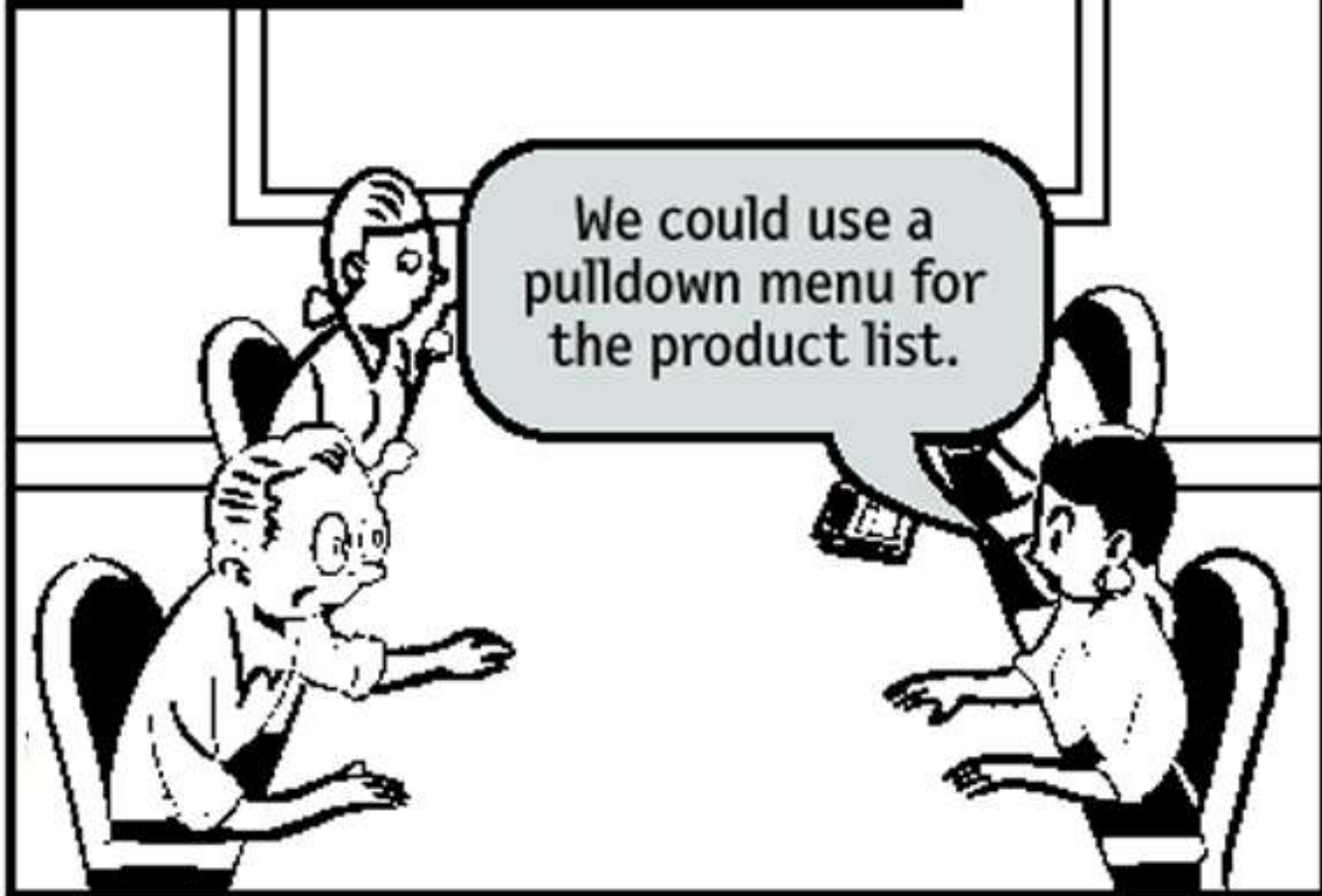
People don't like
pull-downs. My father
won't even go near
a site if it uses
pull-downs.

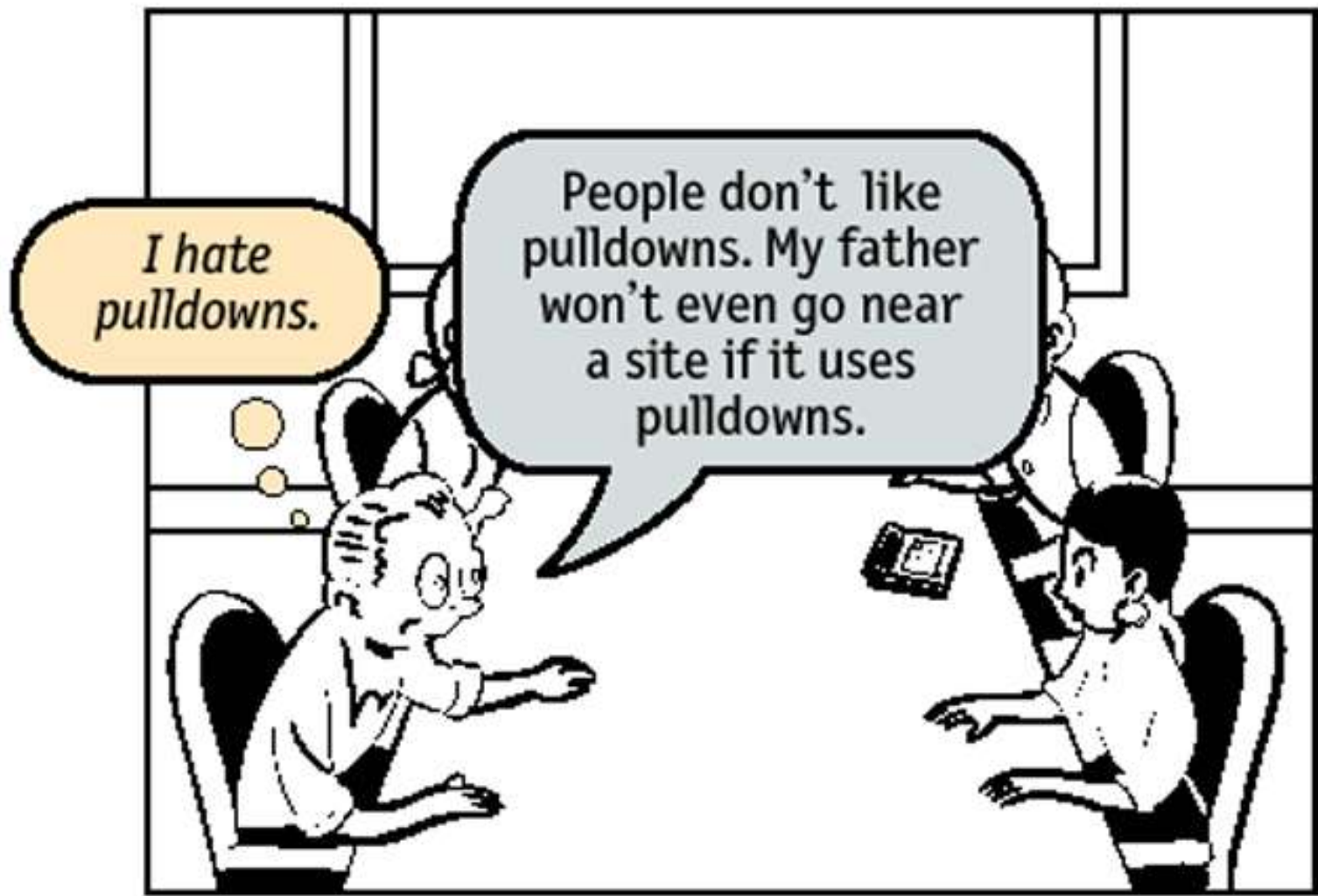
Well, I don't think *most*
people mind them.
And they'd save us a
lot of space.

Besides, have
you got a
better idea?



Caroline makes a suggestion...

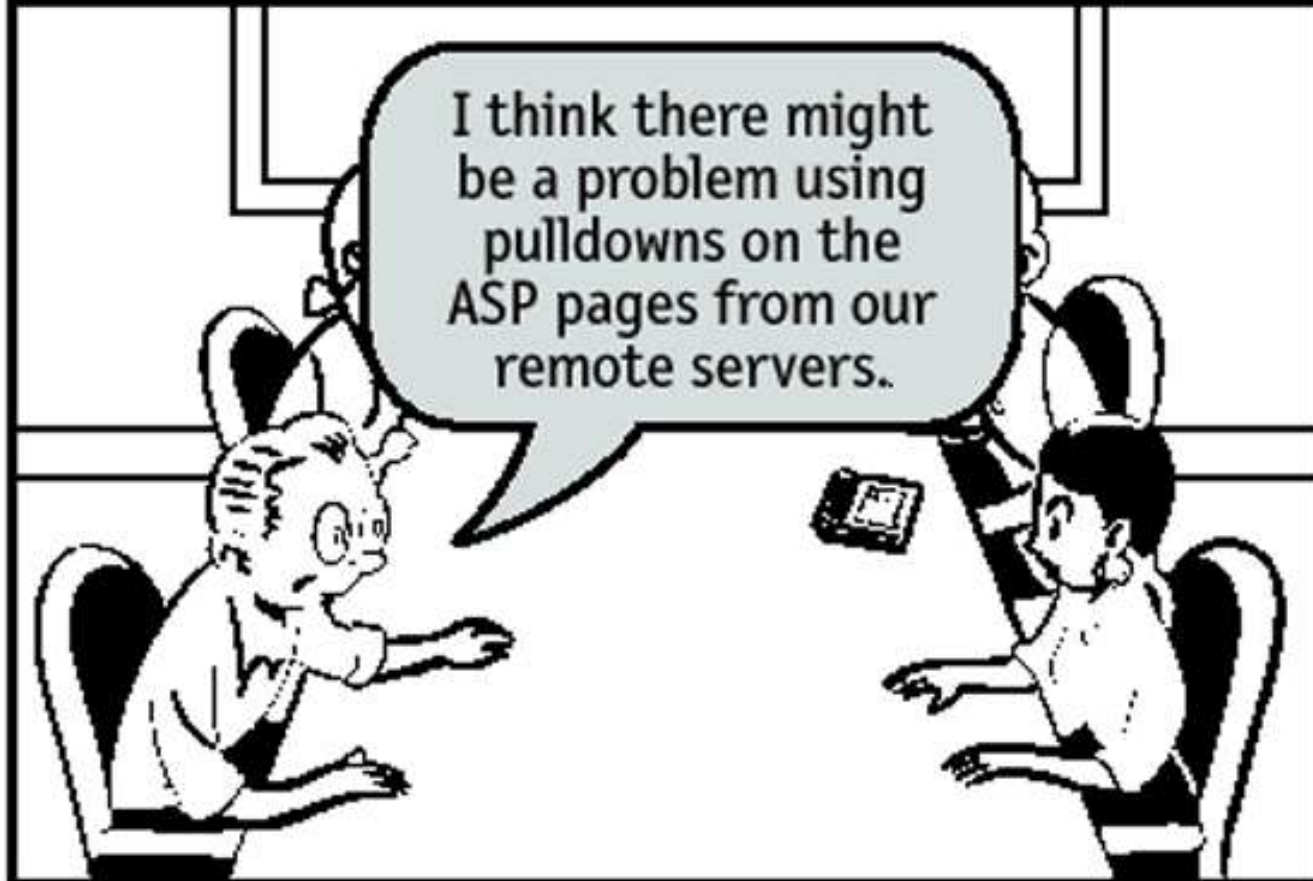


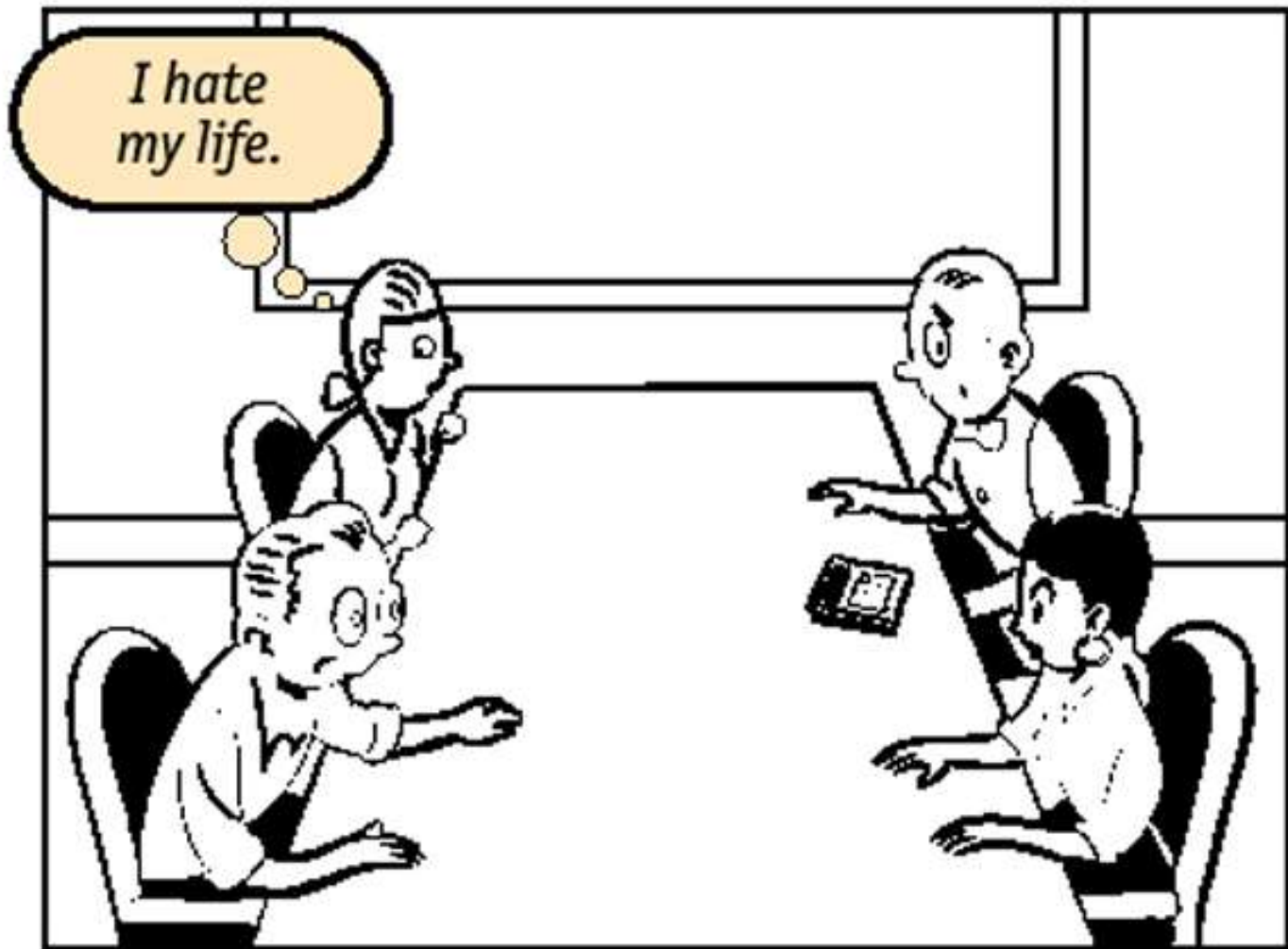




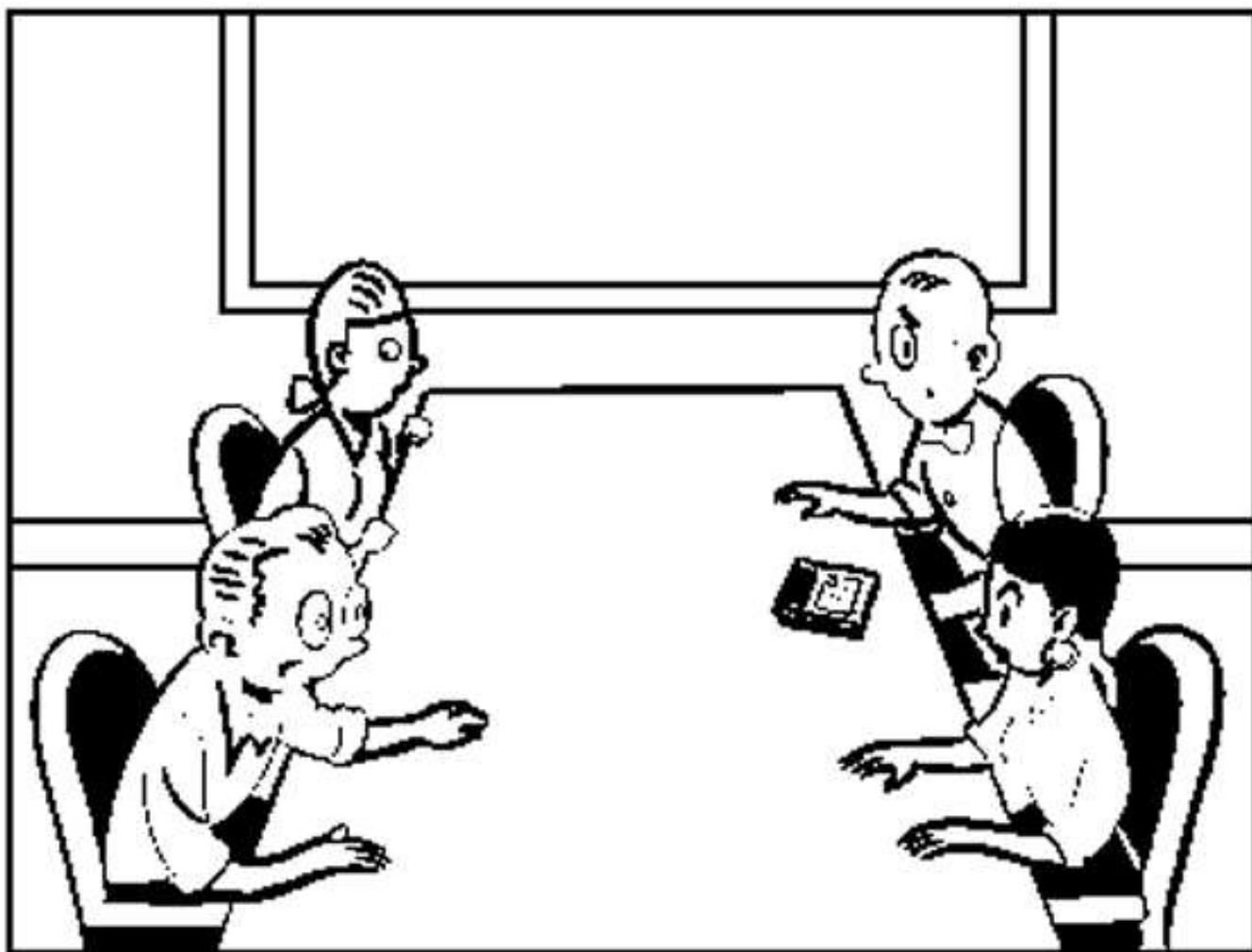


...but Bob plays his developer's trump card







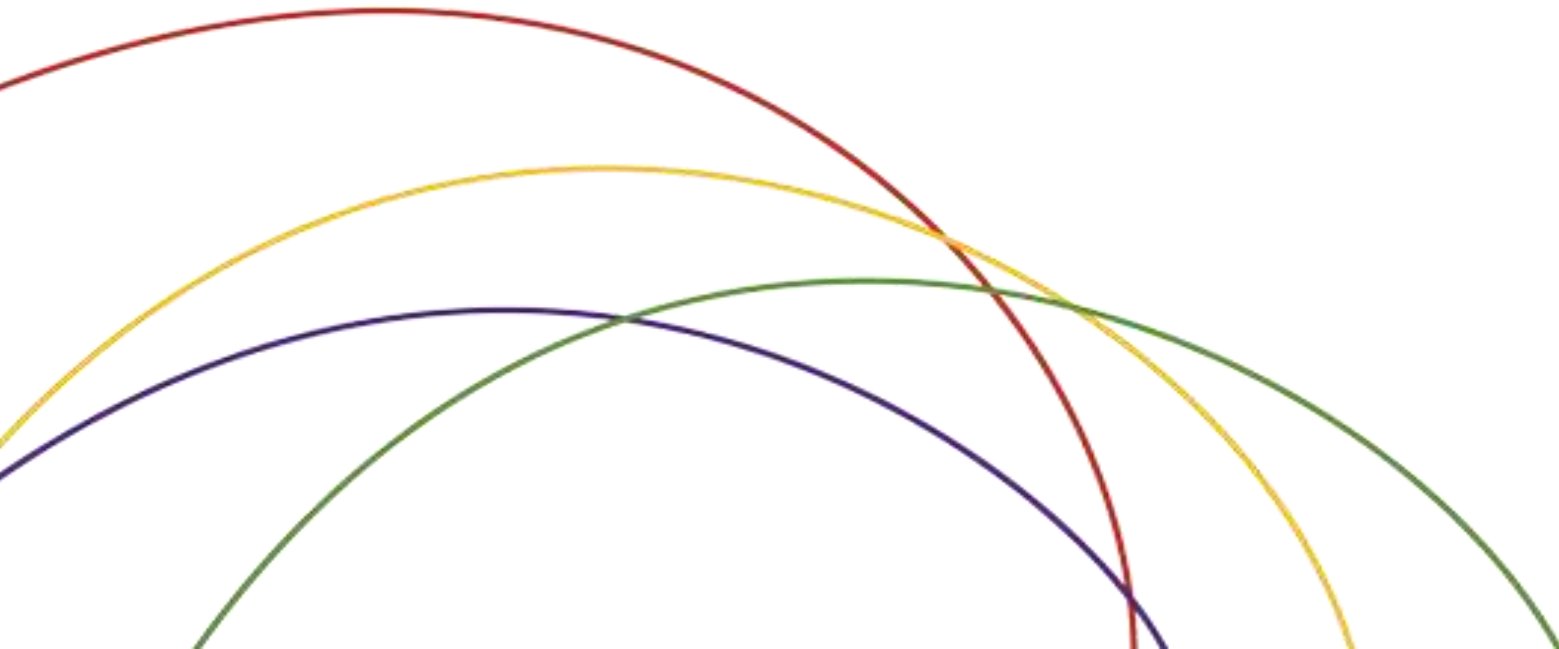




© 2001 Steve Krug

3b. What is iterative design?

Iterative testing is more than just tweaking
an “almost final” product



Is this being iterative?

- Stepwise process:
 - Starting set of survey questions → expert review
→ cognitive testing → program website →
usability testing.
- Few rounds with large numbers of participants, conducted over 1-3 week period
- Findings presented in a detailed report prepared 2-4 weeks after testing

Why is that approach frequently used?

- **An afterthought:** was not originally included in the budget or study design.
- **Cheaper:** Probably perceived that way, but not necessarily
- **Large numbers:** belief that you have to test with enough people to find problems
- **No one ever suggested differently**

Do less testing but do it earlier

- Start as early as possible
- Testing should be integrated into the programming schedule, not conducted after
- Test in stages as web survey is being developed
- More rounds, fewer people

Reasons for More Rounds, Fewer Users

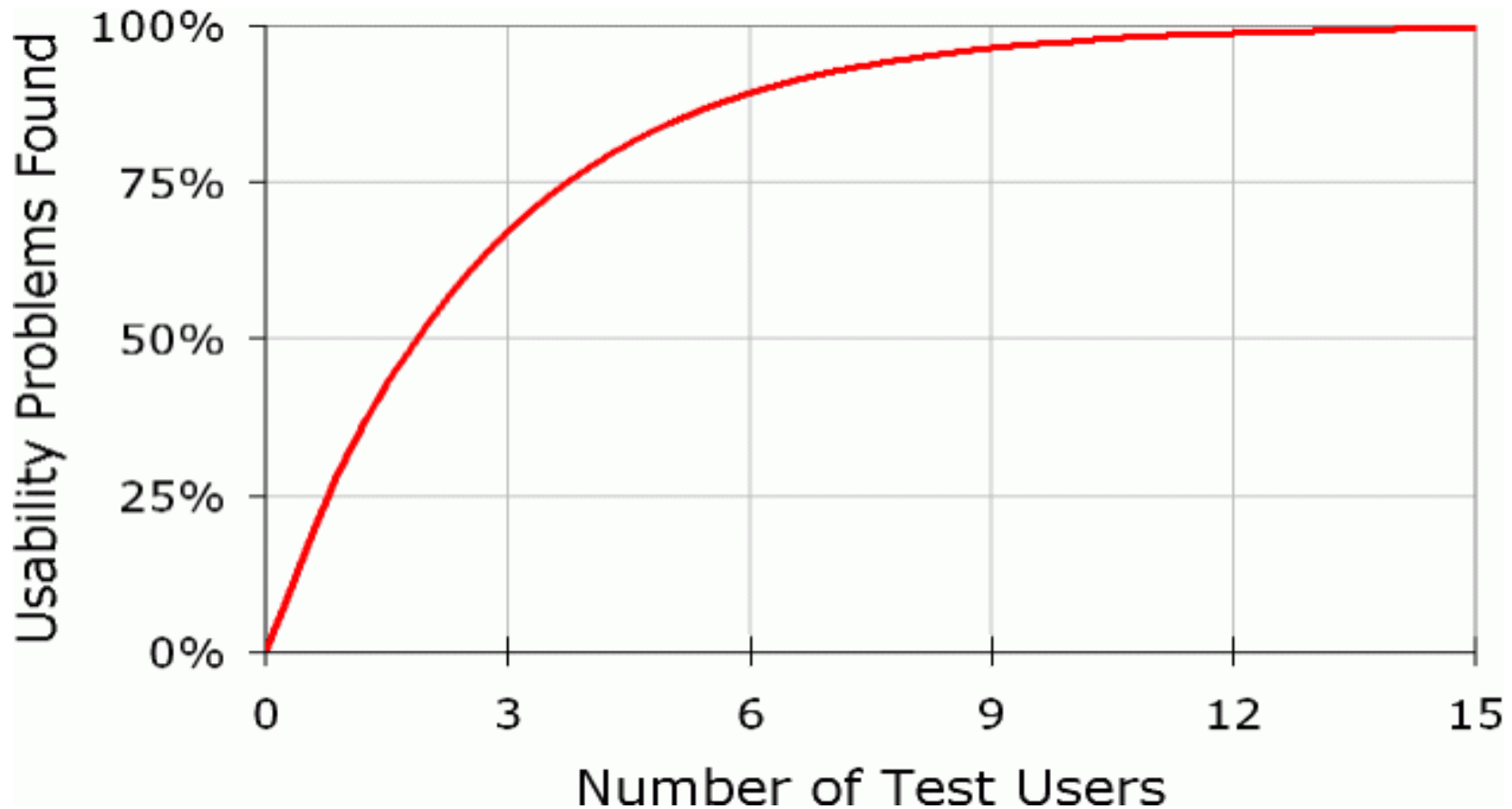
- Identify more issues: 2 rounds of 5 users will likely identify more issues than 1 round of 10 users
 - Diminishing returns from more users in each round
 - Can be hard for users to see past the big glaring problems to other more subtle problems
 - Allows you to test solution
- Good balance between testing resources and revision resources
- Quicker to summarize results and revise testing

Smaller Rounds Support Collaboration

- Include stakeholders in testing
 - Have programmers, clients, decision-makers observe testing live or remotely
 - Direct observation is more exciting than reading a report
- Collaborative process
 - Conduct tests in the morning, meet to discuss over a long lunch, recommendations for changes ready in the afternoon
 - Report can then summarize findings and changes instead of findings and recommendations



Nielsen suggests that after 5 users you learn 85% of the problems



Determining the number of users



- **Problem seriousness:** if encounter serious problems right away, no point to continue testing until resolved
- **More users per round**
 - **User types:** if your users are very different, you may need 5 from each group
 - **Off-site:** tests are being done in the field and it would be inefficient to travel multiple times
 - **Metrics:** need to calculate statistics or metrics such as task timing, eye-tracking data, etc.
 - **Goals v. Budget:** want to identify >85% of the problems
 - **Timing:** Can only fit so many rounds into the schedule

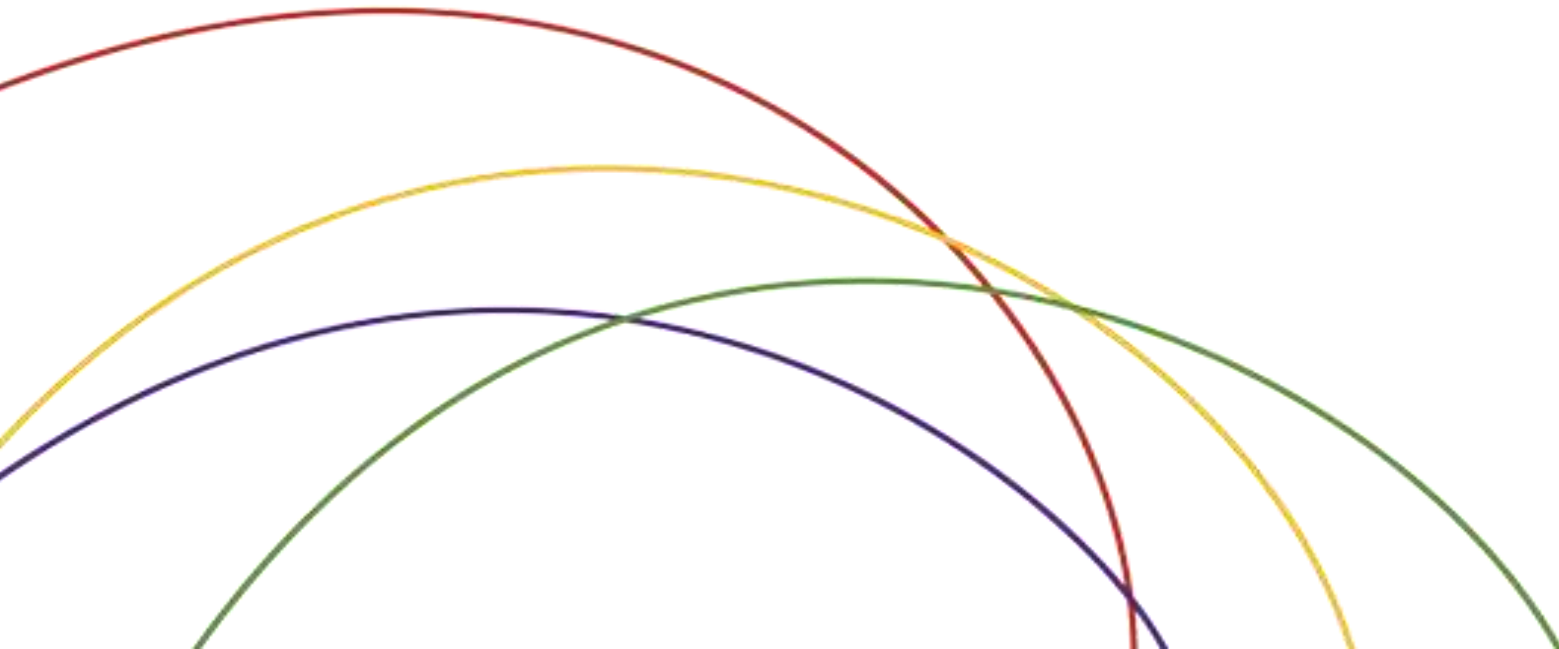
Test until all serious problems
resolved/stop learning anything new

- Test at each stage of development
- Allow for 2-3 rounds at each stage
- If there is no chance of changes,
don't test

3c. What to test and when?

What methods are available?

When should each method be used?



Products that you can test

- Survey Concept
- Previous version of survey
- “Paper” (non-interactive) prototype of this survey
- Wireframe
- Selected interactive questions
- Early interactive prototype
- Survey prior to pilot test or field test
- Survey prior to main data collection

Which one is the prototype?


2008 Survey of Graduate Students and Postdoctorates
in Science and Engineering (GSSWeb)


[Change Password](#)
[Save Data](#)
[Save & Logout](#)
[Contact Us](#)

[Survey Help](#)
[Print GSS Codes](#)
[Print Worksheet](#)
[Email Respondents](#)
[Print Survey Data](#)
[Download Data](#)
[Upload Data](#)

Update Unit Respondents

RTI International University
Graduate School

This screen lets you make changes to the respondents who will provide the GSS survey responses. These respondents will provide counts of:

- Graduate students by sex, race/ethnicity, citizenship, enrollment status, funding type, and funding source;
- Postdoctoral researchers by sex, citizenship, funding type, and degree status; and
- Other doctoral-degree-holding nonfaculty researchers by sex and degree status.

On the next screens, you have the option of contacting unit respondents and having NSF send them IDs and Passwords if you want the unit respondents to complete the survey online. If you do not send IDs and Passwords, you will be responsible for entering data for all units.

Click on the link above the table to export your contact list to Excel.

[Assign myself to all units](#) [Export contact list to Excel](#)

Unit name	Click name below to change respondent's email/phone info	Click links below to Change Respondent
Astronomy	Name: Emily Geisen Title: Payroll/Personnel Coordinator Email: emily.geisen@email.edu Phone: 949-555-5675 ext:	Change Respondent Assign Myself
Chemistry	Name: Jane Smith Title: Department Administrator Email: No email address Phone: 991-555-5865 ext:	Change Respondent Assign Myself
Physics	Name: Emily GRiase Title: Payroll/Personnel Coordinator Email: emily.geisen@email.edu Phone: 949-555-5675 ext.:	Change Respondent Assign Myself
Sociology	Name: John Doe Title: Department Administrator Email: john.doe@email.edu Phone: 919-557-5565 ext:	Change Respondent Assign Myself
Urban Affairs and Studies	No respondent assigned	Assign Respondent Assign Myself

[<< Previous](#)
[Next >>](#)


2008 Survey of Graduate Students and Postdoctorates
in Science and Engineering (GSS Web)


[Change Password](#)
[Save Data](#)
[Save & Logout](#)
[Glossary](#)
[Contact Us](#)
[Help](#)

[Survey Menu](#)
[Survey Information](#)
[Print GSS Codes](#)
[Print Worksheet](#)
[Email Units](#)
[Print Data](#)
[Download Data](#)
[Upload Data](#)

Update Unit Respondents

RTI University
Graduate School (1466)

Please identify a respondent for each unit who will provide counts of the following:

- Graduate students by sex, ethnicity/race, citizenship, enrollment status, and funding
- Postdocs by sex, ethnicity/race, citizenship, type and country of degree, and funding
- Other doctoral-degree-holding nonfaculty researchers by sex

For each unit, you may assign:

- Yourselves as the unit respondent and you report the data. If you will be reporting data for all units, you may also assign yourself to all units by using the button immediately above the table or
- Someone else as a unit respondent to report the data. If you choose this option, respondents may report the data in one of two ways:
 - Offline: Respondents will provide the data to you offline, and you will enter the data into the GSS web survey
 - Online: Respondents will enter the data into the web system directly using an ID and password that you will send them using either the NSF prepared script or a script that you will write and send

After you have assigned all unit respondents, click on the link above the table "Export contact list to Excel" to keep a personal list of all of your unit respondents.

[Assign myself to all units](#) [Export Contact List to Excel](#)

List of Unit Respondents for GSS Survey Data		
Unit name	Click name below to change respondent's E-mail/phone info	Click links below to Change Respondent
Biology	Name: Art Vandelay Title: Dean of Architectural Design E-mail: rvandey@rti.org Phone: 919-454-3409	Change respondent Assign myself
Chemistry	Name: John Calvert Title: Graduate Staff Advisor E-mail: rcalve@rti.org Phone: 919-303-9532	Change respondent Assign myself
Mathematics	Name: Jackie Doe Title: Administrative Assistant E-mail: rcalve@rti.org Phone: 919-333-2731	Change respondent Assign myself
Psychology	No respondent assigned	Assign respondent Assign myself

[<< Previous](#)
[Next >>](#)

Paper prototyping/Wireframes

- **Methods:** Simple drawings or illustrations, Word/Excel/Visio, simple screen shots, website shell
- **Uses:** new questions or surveys, redesigns, evaluating information architecture, visual aspect of survey, web-centric features
- **Benefits:** allows for quick-feedback without spending too much time or money on programming, can apply results to other aspects of survey

Prototyping Example – old table

Fall 2008 Graduate Students Enrolled

Enrollment status and sex (Use your institution's definition of part-time/full-time status.)	Race/Ethnicity and Citizenship										
	U.S. Citizens and Permanent Residents									Foreign nationals	Total ¹
	One race only Non-Hispanic/Latino					One race only	More than one race		Unknown		Sum of A thru J ¹ K
	Black/ African American A	American Indian/ Alaska Native B	Asian C	Native Hawaiian/ Other Pacific Islander D	White E	Hispanic/ Latino F	Hispanic/ Latino G	Non- Hispanic/ Latino H	Unknown/ not stated I	Holding Temporary visas J	
1. Part-time men											
2. Part-time women											
3. Total part-time graduate students ¹											
4. Full-time men											
5. Full-time women											
6. Total full-time graduate students ¹											
Rows 7-9: <i>First-time graduate students</i> are students who were enrolled for a graduate degree in this program at this institution for the first time in fall 2008.											
7. Of full-time men (Row 4), how many are first-time?											
8. Of full-time women (Row 5), how many are first-time?											
9. Of full-time total (Row 6), how many are first-time? ¹											
¹ The gray shaded rows and column for the totals will be automatically calculated on the Web survey. However, if you are submitting your responses using this worksheet, please sum the details and enter the totals in this table.											
Please explain significant differences from last year's survey responses or provide other comments.											

Prototyping Example – revised table 1

Citizenship, Ethnicity, and Race of part-time students (count each student only once in the appropriate category; report students in whole numbers)		Part-time graduate students		
		Male 1	Female 2	Total ¹ 3
Foreign nationals holding temporary visas	A			
U.S. citizens and permanent residents (non-U.S. citizens holding green cards)				
Hispanic/Latino ethnicity	B			
Non-Hispanic/Latino ethnicity				
One race, American Indian/Alaska Native	C			
One race, Asian	D			
One race, Native Hawaiian/ Other Pacific Islander	E			
One race, Black/African American	F			
One race, White	G			
More than one race	H			
Race/ethnicity unknown or not stated	I			
Sum rows A–I ¹	J			
Please explain significant differences from last year's survey or provide other comments here.				
¹ Shaded row and column totals will be automatically calculated if you are reporting via the Web survey.				

Prototyping Example – revised table 2

Citizenship, Ethnicity, and Race

- See glossary (page 8) for definitions of ethnicity and race categories

Consistency checks: Row K, Column 1 = Question 4, Row M, Column 7 (total full-time male graduate students)

Row K, Column 2 = Question 4, Row M, Column 8 (total full-time female graduate students)

Row K, Column 3 = Question 4, Row M, Column 6 (total full-time graduate students)

Citizenship, Ethnicity, and Race of full-time students (count each student only once in the appropriate category; report students in whole numbers)		Full-time graduate students					
		All full-time enrollment			First-time enrollment		
		Male 1	Female 2	Total ¹ 3	Male 4	Female 5	Total ¹ 6
Foreign nationals holding temporary visas	A						
U.S. citizens and permanent residents (non-U.S. citizens holding green cards)							
Hispanic/Latino ethnicity	B						
Non-Hispanic/Latino ethnicity							
One race, American Indian/Alaska Native	C						
One race, Asian	D						
One race, Native Hawaiian/ Other Pacific Islander	E						
One race, Black/African American	F						
One race, White	G						
More than one race	H						
Race/ethnicity unknown or not stated	I						
Sum rows A–I ¹	J						
Please explain significant differences from last year's survey or provide other comments here.							

¹ Shaded row and column totals will be automatically calculated if you are reporting via the Web survey.

Early Interactive Prototype

- **Methods:** Test what you have so far
- **Uses:** long surveys, surveys with different components, surveys with web-centric features
- **Benefits:** can test basic components, layout and features in advance; test one component of survey, while programming another



U.S. News

Best Children's Hospitals



[View/Print Report!](#)

To obtain a PDF of your hospital's survey responses, click the 'Request PDF' button below.

[REQUEST PDF](#)

To download a Word copy of the survey questions, click the link for 'PediatricHospitalSurvey_2011' from the navigation window.

Quick Links

Questions? Please email BestHospitals@rti.org or call 1-866-309-4561.

[Go to:](#)

[INSTRUCTIONS](#)

[FAQs](#)

[SURVEY COORDINATOR CONTACT INFO](#)

[MEDIA RELATIONS CONTACT INFORMATION](#)

- A. GENERAL PEDIATRICS
- B. CANCER
- C. ENDOCRINOLOGY
- D. GASTROENTEROLOGY
- E. HEART/HEART SURGERY
- F. NEONATAL CARE
- G. NEPHROLOGY
- H. NEUROLOGY/NEUROSURGERY
- I. ORTHOPEDICS
- J. PULMONOLOGY
- K. UROLOGY

SECTION A: GENERAL PEDIATRICS

PLEASE NOTE: Answers to the questions in this section will be used to assess hospital capabilities and performance in one or more specialty areas. The section is called general pediatrics to avoid repeating the questions in individual specialty areas.

A1. What was the average daily pediatric inpatient census for the last 2 calendar years?

2009 average daily inpatient census

2010 average daily inpatient census

A2. Indicate the number of full-time equivalent (FTE) on-staff RNs in your pediatric program (including the NICU) who are involved in direct inpatient care? (Exclude LVN, LPN, UAP, NPs, PAs, contract nurses, ED staff, urgent care staff, and outpatient-only nursing staff. Include all clinical RNs who would normally be replaced if they called in ill.)

Number of FTEs

A3. As of January 1, 2011, was your hospital designated a Nurse Magnet Facility by the American Nurses Credentialing Center?

☐ Yes

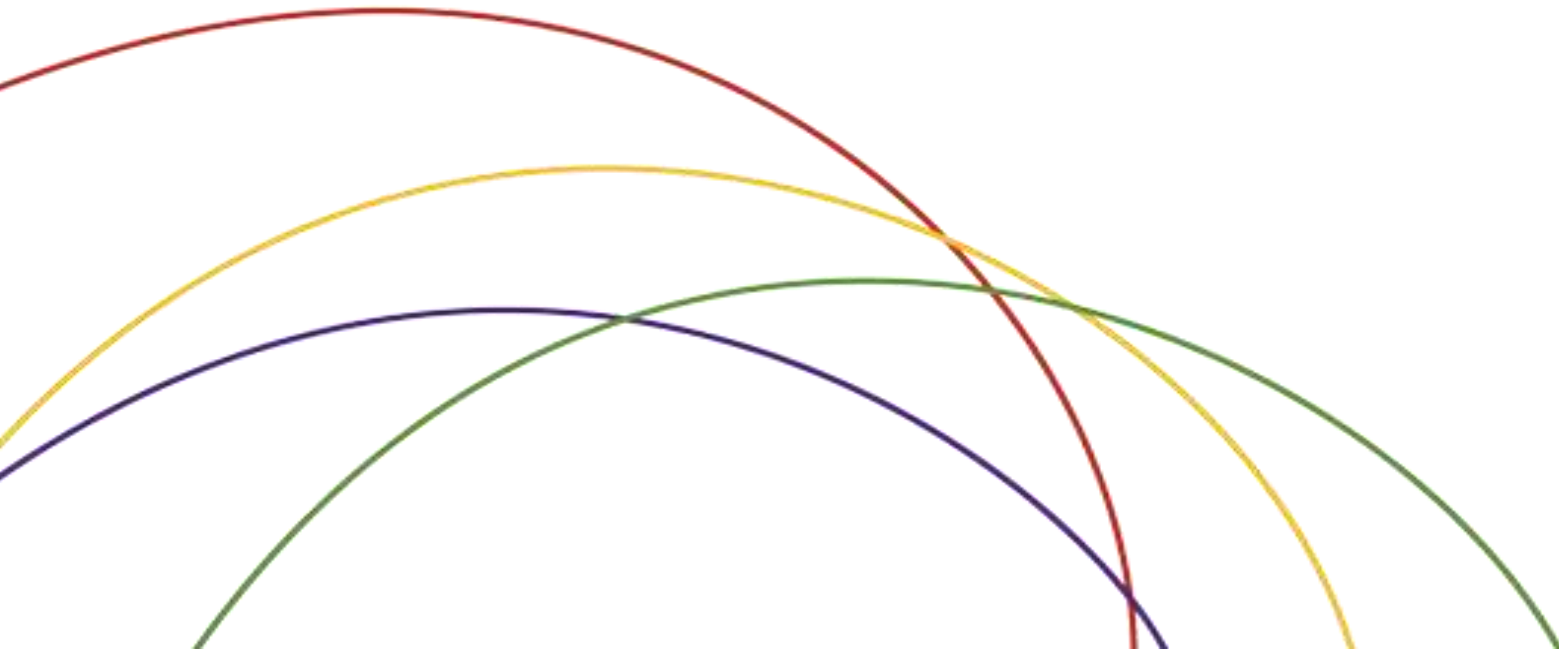
☐ No

A4. Does your hospital have at least one of the following specialists available on-site or on-call for consultation in your pediatric program 7 days a week?

	Yes	No
a. Pediatric anesthesiologists (board certified by the American Board of Anesthesiologists, with a fellowship or other training in pediatrics)	☐	☐
b. Pediatric critical care specialists (board certified by the American Board of Pediatrics with subspecialty certification in pediatric critical care medicine)	☐	☐
c. Pediatric radiologists specializing in diagnostic radiology (board certified by the		

3d. What's realistic?

Not all surveys are created equal



Extent of testing you do will vary by survey

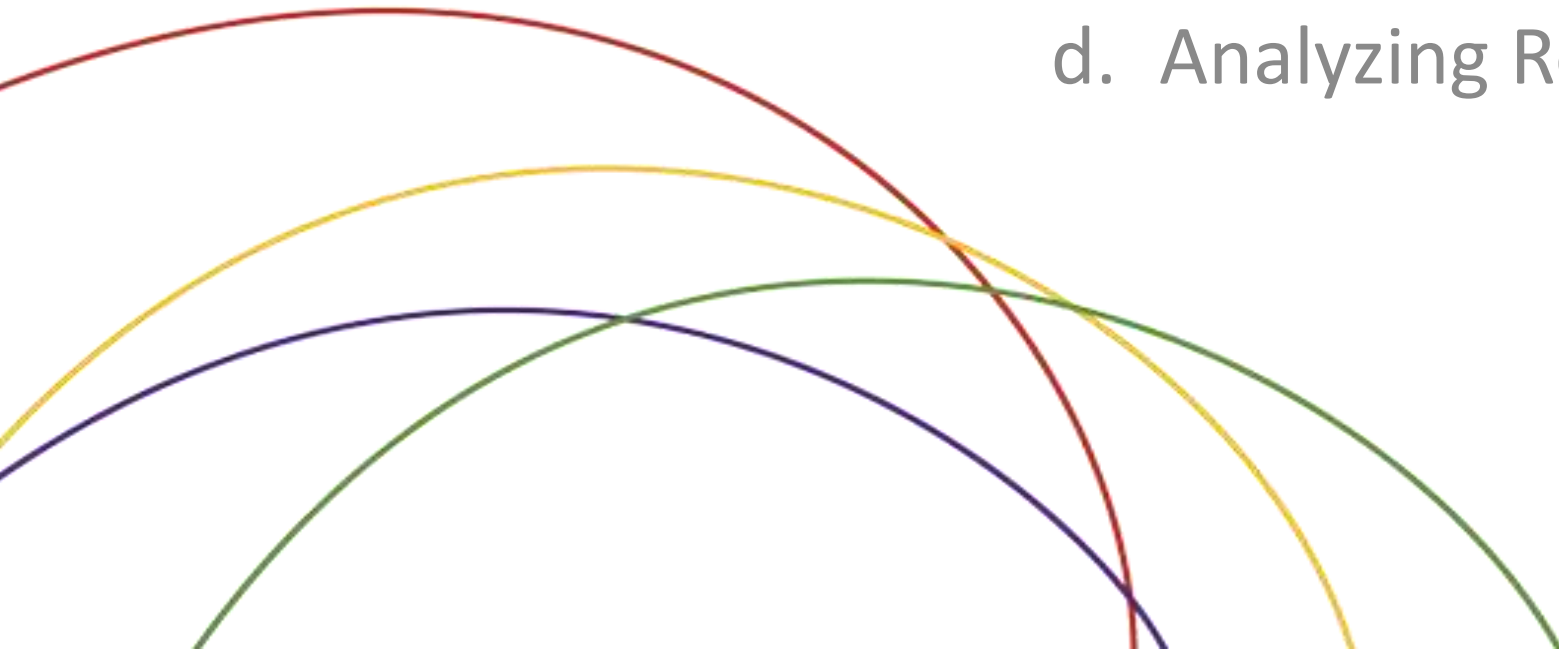
Do Less Testing	Do More Testing
Short surveys	Long surveys
Existing surveys	New surveys
Simple surveys	Complex surveys
Surveys that act like surveys	Surveys that act like websites
One-time surveys	Surveys repeated yearly
Limited time/budget	Moderate time/budget

What's realistic?

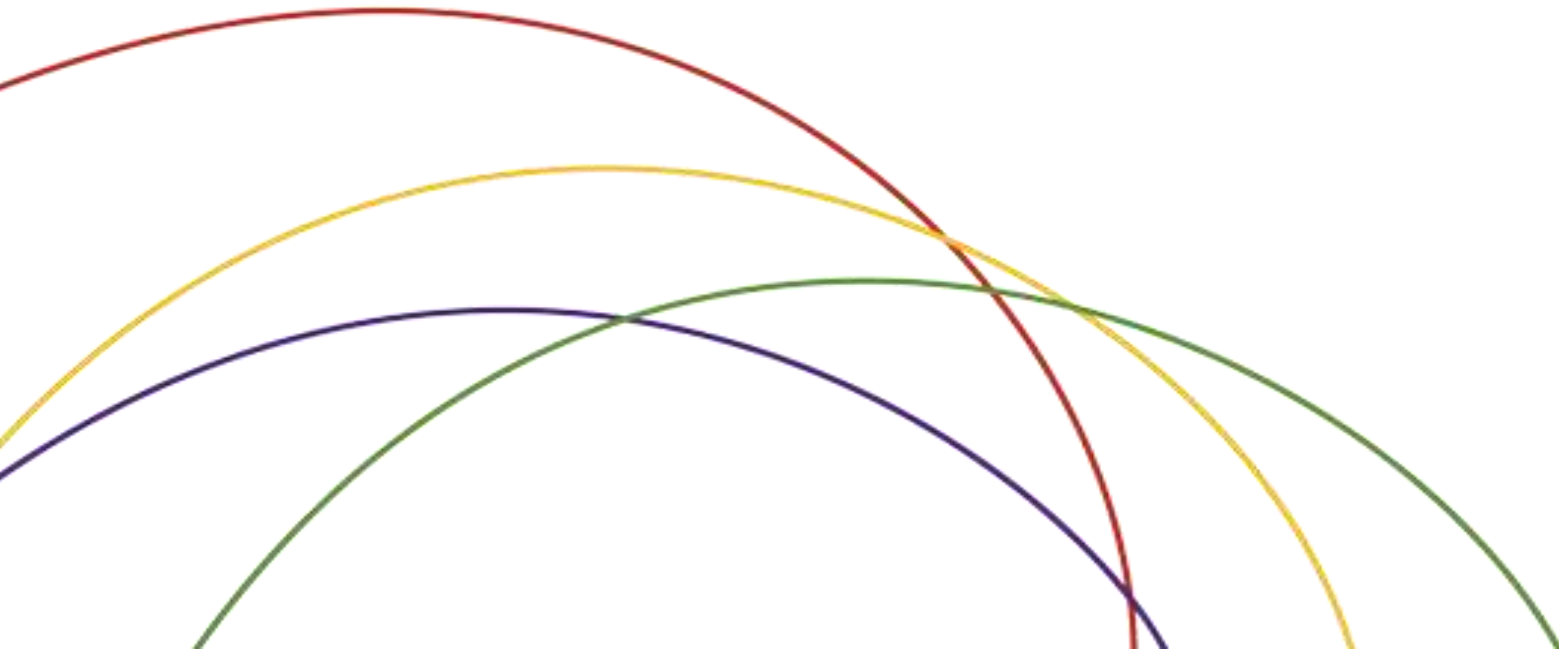
- Something is **EXTREMELY** better than nothing.
- Do what you can this time and then plan ahead next time.

4. How to conduct Usability Tests

- a. Planning and Preparing
- b. Writing Tasks and Scenarios
- c. Moderating Sessions
- d. Analyzing Results



4a. Planning and Preparing



The What, Why, Who, How, Where

What	Determine what to test
Who	Determine number and type of participants Recruit and schedule participants
Where	Determine test location and equipment
Why	Identify testing focus and concerns Determine the data/measures to collect
How	Develop scenarios, tasks, and probes

A month before the test date

- Decide on what you're testing
- Decide on the participants:
 - who you want to recruit
 - how many
 - How you will find them.
- Plan the test date
 - Find a date when your stakeholders can observe
 - Decide on your location



What: Test whatever you have got

- Recap
 - You don't need a fully working survey
 - You can test:
 - Paper prototype
 - Wireframe
 - Lists of questions
 - Some sections
 - Full survey with defects in it or bits missing

Who: how to find your participants

- Craigslist, flyers, newspaper ads
 - Pros: quick, easy, cheap
 - Cons: yields younger, higher educated users
- Participant databases/recruiting orgs
 - Pros: quick and easy, pay per user recruited
 - Cons: can lead to “professional respondents”
- Other sources: word of mouth, sample lists, clubs and societies, snowball recruiting

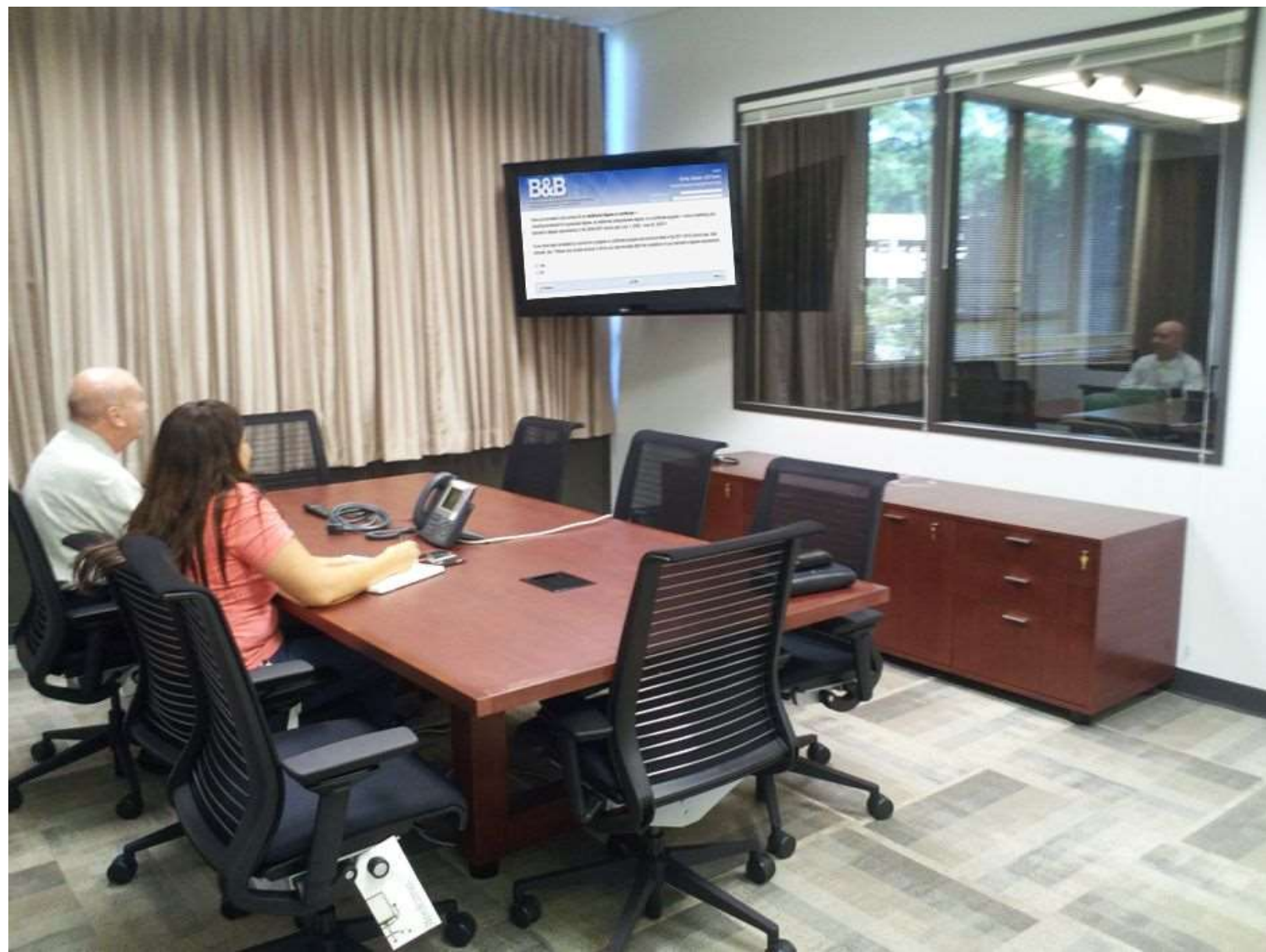
Who: some recruiting tips



- Decide whether to recruit “floaters” (no-shows and cancellations)
- Get talking to your participants early:
 - Ask about specific behaviors relevant to your test e.g. Internet, use of mobile
 - Talk about what they’ll do and build rapport
 - Get an email address and a contact number
- Schedule sessions about 3 weeks ahead
- Remind them the day before

Where: testing in the users' location is harder but gives richer data

	Your location	User's location
Pros	•Use your organization's equipment (one-way mirror, recording software) •Controlled setting with no/few interruptions	•Simulates real user experience •Users have access to info •Easier to schedule/accommodate users
Cons	•Not true to real life •More burden to user – more no shows and cancelations •Using your computer not the user's computer	•Need portable equipment or do without •Interviewer travel - increased cost to researcher •Safety matters •Harder to schedule observers



Consider screen-sharing for observers

- Fosters collaboration
 - Can accommodate observers from any location
 - Facilitate discussions in conference setting
- Improved schedule
 - Stakeholders get information immediately
 - No waiting for recorded videos or report
- Cheaper
 - Inexpensive compared to travel costs

Screen-sharing software

- Oneeko: \$8/month
- WebEx: \$19+/month
- AT&T Connect: 12 cents/min. per person
- GoToMeeting: \$49/month (***Our choice***)

Consider screen-recording for notes

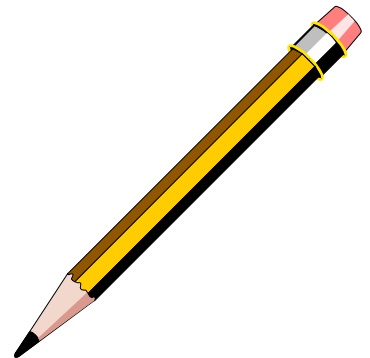
- Helps with note-taking
 - Reduces need to take notes or have a note-taker during interview
 - Can take more nuanced notes afterwards if you can start and stop the video
- Helps after the interview
 - Useful during debriefing to replay parts of video
 - Accommodates observers who could not make it to the actual session

Screen Recording Software Options

Price	Software	Comments
Free: \$0	Camstudio, Hypercam	Ok, but very basic
Midlevel: \$200-\$300	Screencam Camtasia	Work fine if you only want to record and play back
Professional: \$1,100	Morae	Professional usability software for logging and analyzing usability issues Includes screen-sharing software

Your testing plan

- Your date will be....
- Your location will be...
- You'll be testing...
- With these participants....
- Who you'll recruit this way....



Three weeks before the test date

- Get started on recruitment
- Organize your incentives
- Identify your focus/concerns
- Plan your measurements



Why: Identify testing focus/concerns

- General focus: can they complete the survey?
 - More specific concern:
we are worried about the definitions
 - More specific:
are hover-overs an effective way of providing definitions?
 - More specific: Do participants know definitions are available?
 - More specific: How easily do users understand what's hover-overable?
 - More specific: How helpful/unhelpful are the definitions?

More examples of specific concerns

- Can participants use the sliders correctly?
- Do participants enjoy using the sliders or would they prefer to answer differently?
- How well do users understand the survey instructions?
- Do users scroll to see the entire question before answering?
- Do participants know what to do on each screen?
- Can participants navigate through the survey correctly?
- How easily do participants find the information they need to answer the questions?

Measurements to collect

- The actual answers they put in!
- Quantitative metadata
 - Performance data: based actions/behaviors
 - Preference data: pre/post questionnaires, ratings on tasks
- Qualitative metadata
 - Comments made by participant
 - Responses to open-ended probing
 - Non-verbal cues



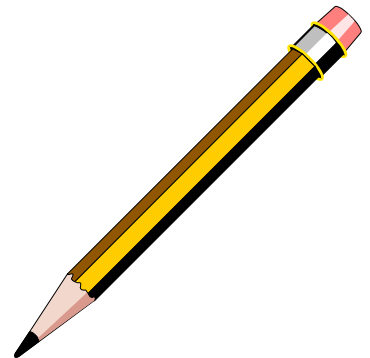
Measurements to collect



- Examples of performance measures
 - Success rate and/or speed for tasks
 - Requests for help/assistance
 - Number and types of errors that occurred (incorrect selections, menu choices)
 - Count of features used (help menu, hover-over definitions, calculate button)
- Examples of preference measures
 - Do you prefer A or B? Why?
 - How or easy or difficult was it to do ... Very easy, easy...

Your testing plan

- The incentive will be....
- Our focus/concerns are...
- We'll measure....



One week before the test date

- Develop your test materials
- Organize roles in the test:
 - Meet and greet
 - Observer co-ordinator
 - Test facilitator
- Do a practice run
- Arrange any refreshments
 - “Get the good pizza”



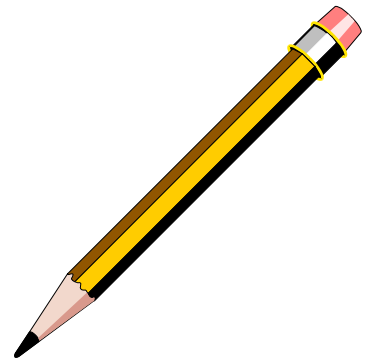
Prepare your materials

- Develop consent forms, screeners
- Instructions/directions for participants
- Prepare written tasks/scenarios (index cards)
- Pretest/posttest questionnaires



Your testing plan

- The materials to prepare will be...
- I will do my practice run this way...

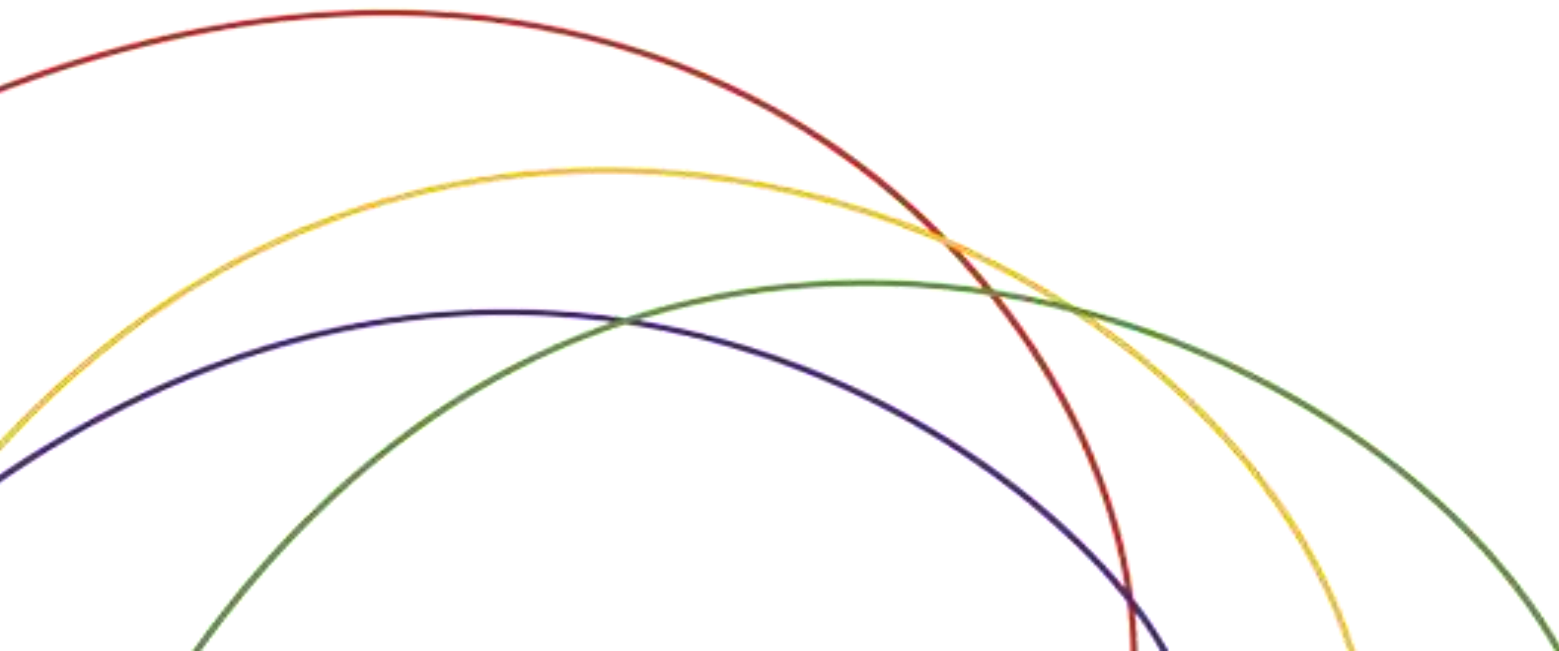


The day before the test date

- Send out reminders:
 - Phone or email to respondents
 - Email to stakeholders
- Equipment/Facility
 - Check the computers and software (remote sharing, video recording), keyboard, mouse
 - Make sure the room you'll use is tidy
 - Make sure your meet/greet person has the final list of participants' names
 - Incentives are available



4b. Writing tasks and scenarios



Scenarios, Tasks, Probes

- **Scenario** – a “what if”; a situation you ask the participant to put themselves in order to test the instrument
- **Task** – something you want the participant to accomplish using your instrument
- **Probe** – questions asked of the user to elicit additional information and feedback

For some products, you need a task

- These are things that you want the user to do:
 - “Please fill out this survey as you would at home”
- You may need specific tasks to match your test focus and concerns

A scenario brings the data together into a coherent story

- Keep scenarios short and simple
- Avoid extremely hypothetical scenarios or scenarios that would be difficult to envision
- Use the participant's words, not researchers
- May need to prepare fake data to answer questions (e.g., SSN, phone number)

Don't confuse participants with too many scenarios

- Whittle lists of tasks/scenarios to manageable number
- Prepare tasks to give to participants (index cards are useful)
- Tasks should flow in order of the survey
- Okay to change tasks between rounds

Example 1 – No task/scenario

- B&B asks different questions for teachers vs other users
- Recruited some teachers and asked them to complete survey

B&B
Baccalaureate and Beyond Longitudinal Study
OMB Clearance No. 1550-0720 Exp. Date 2/28/2011

Logout
Emily Geisen (EGTest1)
Post-BA Education/Training/B12CPSTGRD

Overall Progress: 
Section Progress: 

Have you enrolled in any school for an **additional degree or certificate** — including enrollment for a graduate degree, an additional undergraduate degree, or a certificate program — since completing your bachelor's degree requirements in the 2006-2007 school year (July 1, 2006 - June 30, 2007)?

If you have been accepted to a school for a degree or certificate program and will be enrolled in the 2011-2012 school year, also indicate "yes." Please only include schools in which you were enrolled after the completion of your bachelor's degree requirements.

☒ Yes
☐ No

Example 2

- **Concern:** Do users notice the checkbox to indicate that a unit does not have any students?
- **Task :** Complete all survey questions for the Entomology department
- **Scenario:** The Entomology department has one postdoc and no graduate students. See attached profile for the postdoc.

Part-time Students: Ethnicity, Race

Entomology (29210)

2

How many graduate students were enrolled **part-time** for credit in this organizational unit in fall 2010 in each category below? Use your institution's definition of **part-time**. (Full-time enrollment is collected in Question 3)

☐ Check this box if this unit had no eligible part-time graduate students, and then skip to Question 3

71. This grid contains all zeros. If you have no part-time graduate students enrolled in this unit, please indicate on the checkbox above.

Note

- Count only students enrolled **part-time** for credit in a graduate-degree program in science, engineering, or health
- Count students enrolled in more than one organizational unit in only one home unit

Include

- Part-time graduate students doing thesis or dissertation research
- Part-time students pursuing a master's, PhD, or equivalent degree such as ScD or DEng
- Part-time master's or PhD candidates (including residents and interns) concurrently enrolled in a professional degree program (e.g., MD, DDS, DO, DPT, DVM) **or** a joint medical/PhD program
- Part-time students who already hold a graduate or professional degree **and** are seeking an additional degree in a master's or PhD program

Example 2

- **Focus:** Participants found it difficult to login to the previous version. Will the new instructions (using X's instead of 9's) solve the problem?
- **Scenario:** You received the ACS survey in the mail but would prefer to complete the survey online.
- **Task:** Log on and complete the survey on the web.

Example 3

- **Focus:** Find out whether users can add and delete units
- **Scenario:** State University just added a new department for biochemistry. There will be 10 incoming PhD students.
- **Task:** Update the departments offered at your school, by including biochemistry.

Task – Add Biochemistry

Coordinator Contact Information

Confirm No Postdocs in School

Postdoc Definitional Question

Update Your Unit List

Update Unit Respondents

Notify Unit Respondents

Send or Resend IDs/Passwords

Submit Part 1

Part 2

Unit Status Menu

Unit Profile

Part-time Students: Ethnicity, Race

Full-time Students: Ethnicity, Race

Full-time Students: Financial Support

Postdocs: Ethnicity, Race and Citizenship

- Appoint [postdoctoral researchers](#) (postdocs), OR
- Employ [other doctorate-holding nonfaculty researchers](#)

Do not include units that award professional degrees such as MD, DDS, JD unless they also award a GSS-eligible degree, appoint postdoctoral researchers, or employ other doctorate-holding nonfaculty researchers.

1. **Review units:** Click on the unit name or GSS code to change, if needed
2. **Delete units:** Click the "Delete" link to remove units that are not GSS-eligible
3. **Add units:** Click the "Add Units" button to add any missing GSS-eligible units, and assign each new unit a [GSS code](#)

Add Units

4. **Confirm units:** Check the box at the bottom of the unit listing to confirm that you have completed updating the units for your school.

[Printer-Friendly Unit List for 2010](#)

Due Date: December 10, 2010

Current Listing for RTI University, Graduate School

Teaching/Research Unit (click name to change)	GSS Code (click name to change)	Delete
Architecture	Architecture (exclude MArch, DArch... and DED) (940)	Delete
Architecture	Architecture (exclude MArch, DArch... and DED) (940)	Delete
Entomology	Entomology and Parasitology (609)	Delete
Plant Pathology	Botany (606)	Delete

- ☒ **Confirm.** Check this box to confirm that you have reviewed your list for 2010 and made updates as needed.

<< Previous

Next >>

Task – Add Biochemistry

Add Unit

To add a new unit, please provide the following information about the unit, and then click the 'Save' button

1. What is the name of this organizational unit?

Organizational Unit:

Organizational units ("units") include teaching units (departments or programs) and research units (research centers or health care facilities). This term replaces several terms used previously: department, program, research center, and health care facility.

2. For this unit, what is the highest degree that this unit offers as of fall 2010? Note: The category, "PhD or equivalent" **excludes** degrees such as EdD. It also excludes MD, or other professional degrees.

- ☒ PhD or equivalent, such as ScD or DEng
(exclude EdD, MD, or other professional degrees)
- ☐ Master's degree (exclude certificates)
- ☐ No PhD or master's degree offered

3. Please select one GSS code that best represents this unit from the choices below or enter the three-digit code number. Please consult the [GSS code list](#) to determine the correct code. To view the list sorted by CIP, consult the [GSS Crosswalk](#).

Agricultural Sciences

- ☐ Agricultural Sciences (501)

Architecture

- ☐ Architecture (exclude MArch, DArch., and DED) (940)

Biological Sciences

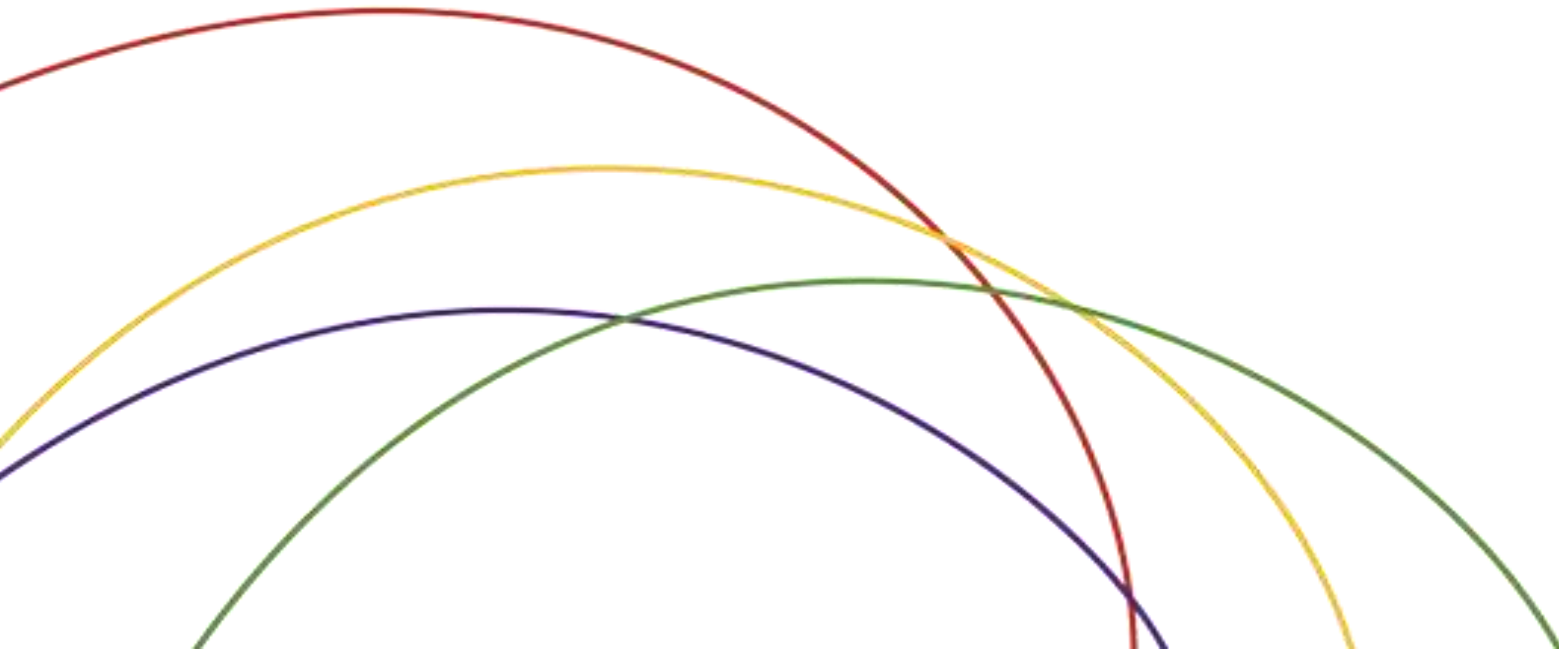
- ☐ Anatomy (601)
- ☒ Biochemistry (602)
- ☐ Biology (603)
- ☐ Biometry and Epidemiology (604)

Health Fields

- ☐ Anesthesiology (701)
- ☐ Cardiology (702)
- ☐ Oncology/Cancer Research (703)
- ☐ Endocrinology (704)
- ☐ Gastroenterology (705)
- ☐ Hematology (706)
- ☐ Neurology (707)
- ☐ Obstetrics and Gynecology (708)
- ☐ Ophthalmology (exclude OD) (709)

4c. Moderating Tests

It's the day of the test.
Theme: your participants
are your first priority



When you are running the test, you need to look after your participant

- You must be a “flight attendant”
 - Welcome the participant
 - Check that the participant is feeling comfortable and relaxed
 - Explain what the participant has to do
 - Look after the participant’s welfare and safety



From Carolyn Snyder, 2003 “Paper Prototyping”

When you are running the test, you need to be objective

- You must be a “scientist”
 - Be prepared for surprises
 - Be balanced in your viewpoint
 - Make sure you do everything you planned to do
 - Report accurately, even if it’s uncomfortable



Based on Carolyn Snyder, 2003 “Paper Prototyping”

When you are running the test, you need to think about what is happening

- You must be a “sports commentator”
 - Analyze what is happening
 - Take notes for your reports
 - Pay attention to what the participant actually does
 - Make sure your observers are receiving the right information



Based on Carolyn Snyder, 2003 “Paper Prototyping”

“Think aloud” = getting the respondent to be the commentator

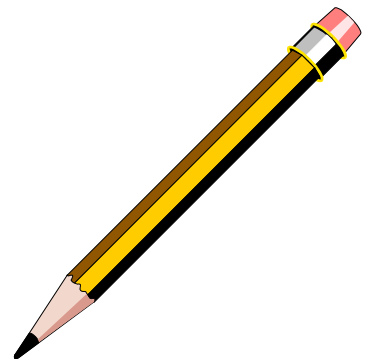
- Ask participants to tell you what they are thinking as they complete your survey
 - Explain “thinking aloud” at the start
 - Get the participant to try an example
 - Remind them periodically (What are you thinking? What did you think of X?)
- Snags:
 - Thinking aloud is not natural for some people
 - Others will start well, then forget

Users may need help with thinking aloud

- “What are you thinking?”
- “What are you doing?”
- “What are you looking at?”
- “What were you expecting to happen?”
- “What do you think will happen?”
- “What are you trying to do?”
- “Tell me more about that.”

Plan your response...

- User is silent
- User asks you “is this right?”
- User asks you for help
- User blames himself/herself for problem, “You must think I’m an idiot.”



Plan your response...

- User is silent
 - Be patient. Then if necessary, ask “What are you thinking?”
- User asks you “is this right?”
 - “Does it seem right to you?”
- User asks you for help
 - “What would you do if I wasn’t here?”
- User blames himself/herself
 - “Everything you’ve done has made complete sense to me.”

Moderating Tips

- Avoid yes/no questions, people tend to be acquiescent
 - Bad: “Is that link helpful?”
 - Good: “How helpful or unhelpful was the link?”
- Ask unbiased questions
 - Bad: “Are you looking at the X link?”
 - Good: “What are you looking at?”
- Be quiet and wait
 - Bad: Impatiently asking “what’s happening?”
 - Good: Count to 20 before jumping in. Or to 30.

When you hear yourself asking a leading question, balance it

“So you think that’s difficult then?”

“...or was it easy?”

Leading question

Balanced question

It's not a cross-examination

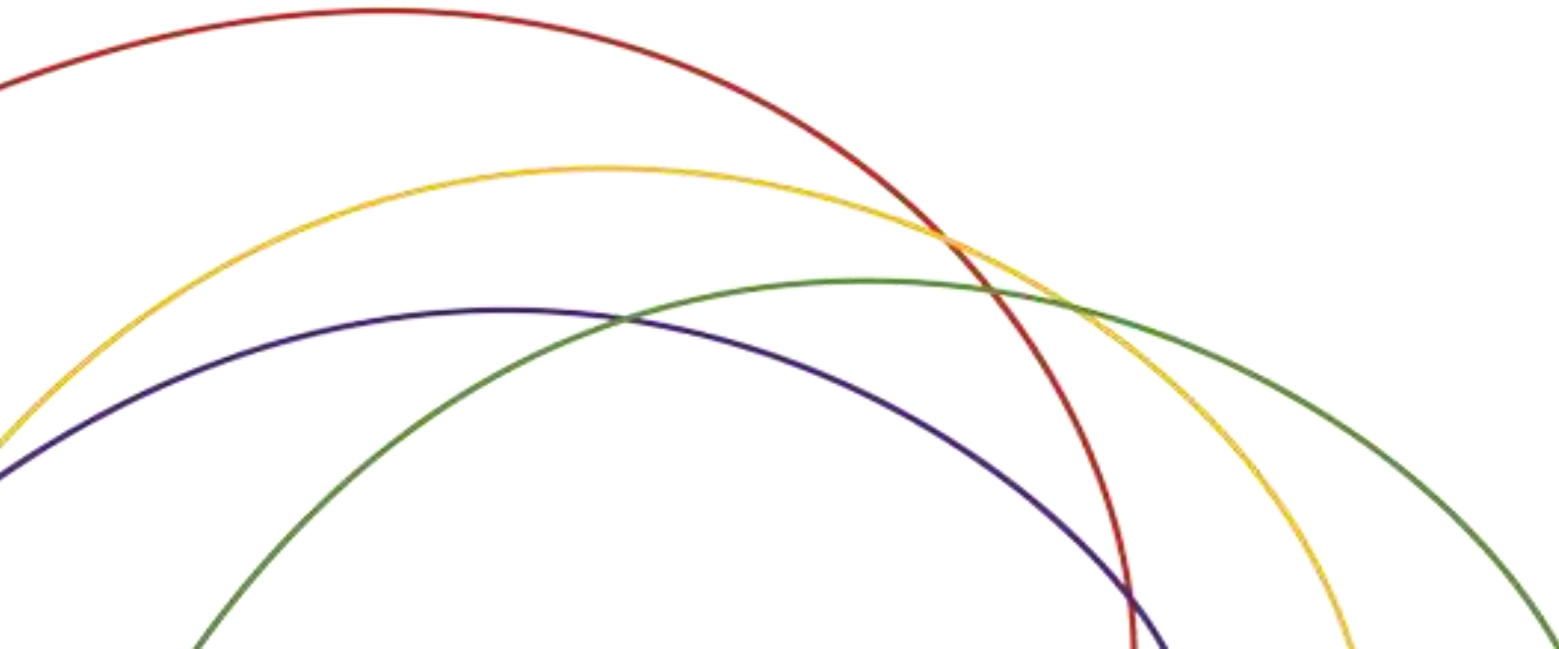


Don't cherry-pick problems

- If you are writing notes then write down everything
 - If you only write bad things, the participant will notice
- Provide praise/feedback for every task, successful or unsuccessful
- The phrase “Thanks, that’s interesting/That’s helpful” is encouraging and neutral



5. Do-it-Yourself Practice Time



Exercise: Prepare tasks and scenarios

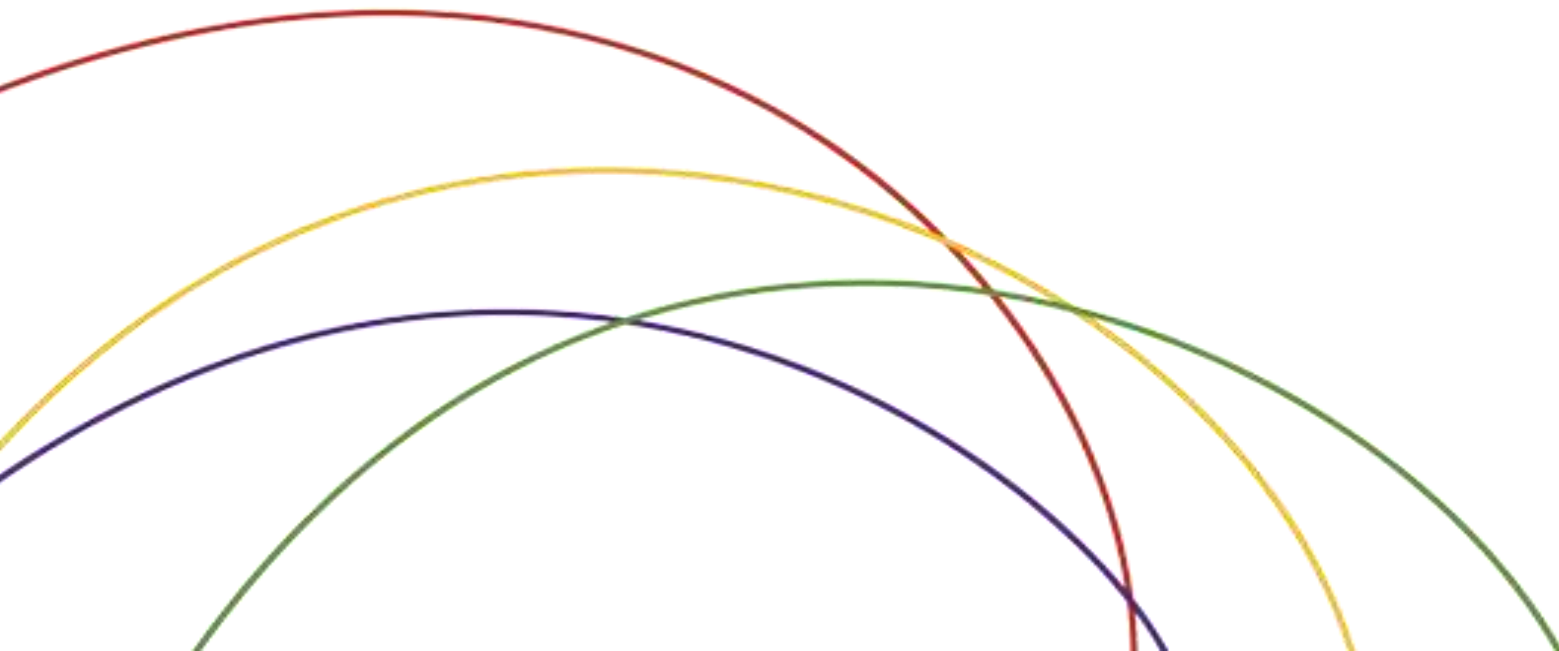
- Choose a survey (let us know if you need one of the class examples)
- Take 10 minutes to:
 - Write-out 2-3 of the most important tasks you need respondents to do
 - Choose one to work on
 - Write a scenario for this task
- We will debrief as a class



Exercise: Practice Test

- Pair up with someone who has a laptop
- Take turns as moderator/participant
- 10 minutes each
- We can help if you have questions
- We will debrief as a class

6. Analyzing Results



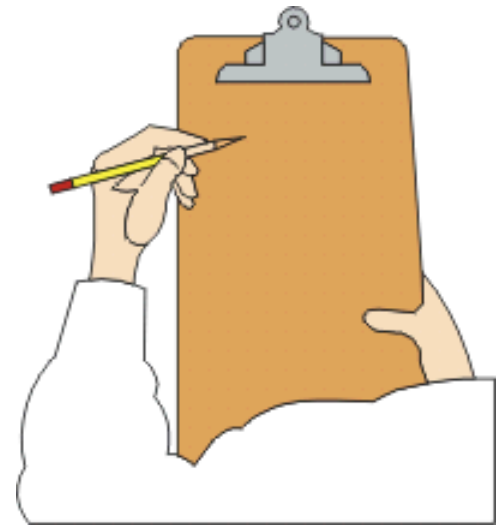
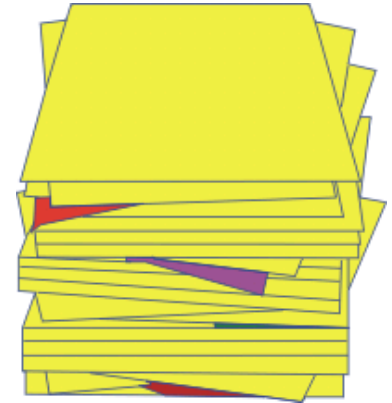
Making Sense of It All

1. Collect all of your data together?
2. Understanding what it means?
3. What can/should we do about it?

-Barnum (2011)

Collect All of Your Data Together

- Quantitative data
 - The actual data collected by the instrument
 - Metadata (e.g., pretest, ratings)
 - Paradata (e.g., task timing and coding)
- Qualitative comments
 - Interviewer notes
 - Observer notes



“Focus ruthlessly on only the most serious problems”

- Krug, 2010

The Steve Krug method:

focus on the most serious problems

- Run your usability test
- Have a meeting with the key stakeholders
- Decide on whatever is the most important problem
 - You can add one or two extra ones if they are really, really important
- Go away and fix the most serious problem(s)
- Ignore everything else
- Test again and repeat

Determining the most serious problems should be easy...

- Frequency of the problem (5 out of 5 users)
- How likely are others to have this problem?
- What's the impact on the survey (e.g., causes break-offs, inaccurate data)
- How much of the survey does it affect (e.g., local vs global finding)?

Determining what and how to fix problems is harder...

- Group debrief after the test to discuss
- Set priorities
 - Most serious problems (ignore “nice to haves”)
 - Problems that are easy to fix (e.g., typos, wording)
- How long will it take to fix?
- Will fixing it cause other potential problems?
- Recommendations should be specific/doable within timeframe and budget

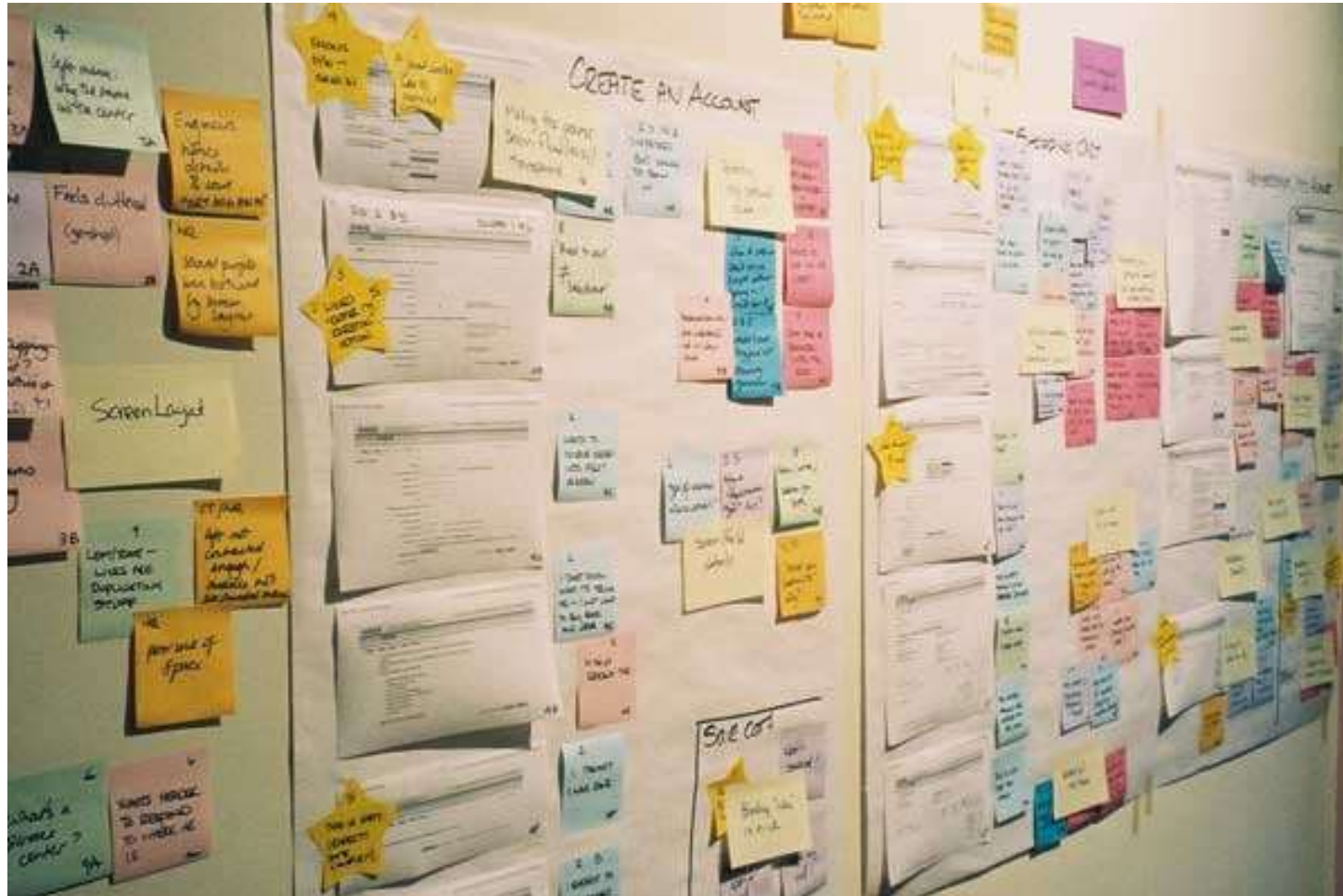
The traditional method: make use of all of your findings

- Run your usability test
- List everything that you found
- Group all the findings in a way that works for you:
 - by topic
 - by area of the survey
 - by person who can fix the problem
 - by anything else that you consider appropriate
- Write a report with recommendations
- Work on the recommendations
- Run another usability test and start again

Spreadsheets can help group findings

Participant	Type	Task	Code	Comments
1234	New user	Add a new unit	L - Liked Feature	Liked the mouse over feature, but asked if there was a link to open a new window
1234	New user	Add a new unit	S - Suggestion	Make the pop-up text stay open longer
1234	New user	Add a new unit	C - Comment	Worried that they have been reporting the wrong thing by excluding business fields.
1234	New user	Add a new unit	N-Navigation	Was not sure which page to go to do add a unit. Clicked through several incorrect pages before finding the right page.
1234	New user	Add a new unit	E- Error	Chose "edit" in table instead of "add" button

Run a workshop to create a results wall



With 5 users, each one really matters

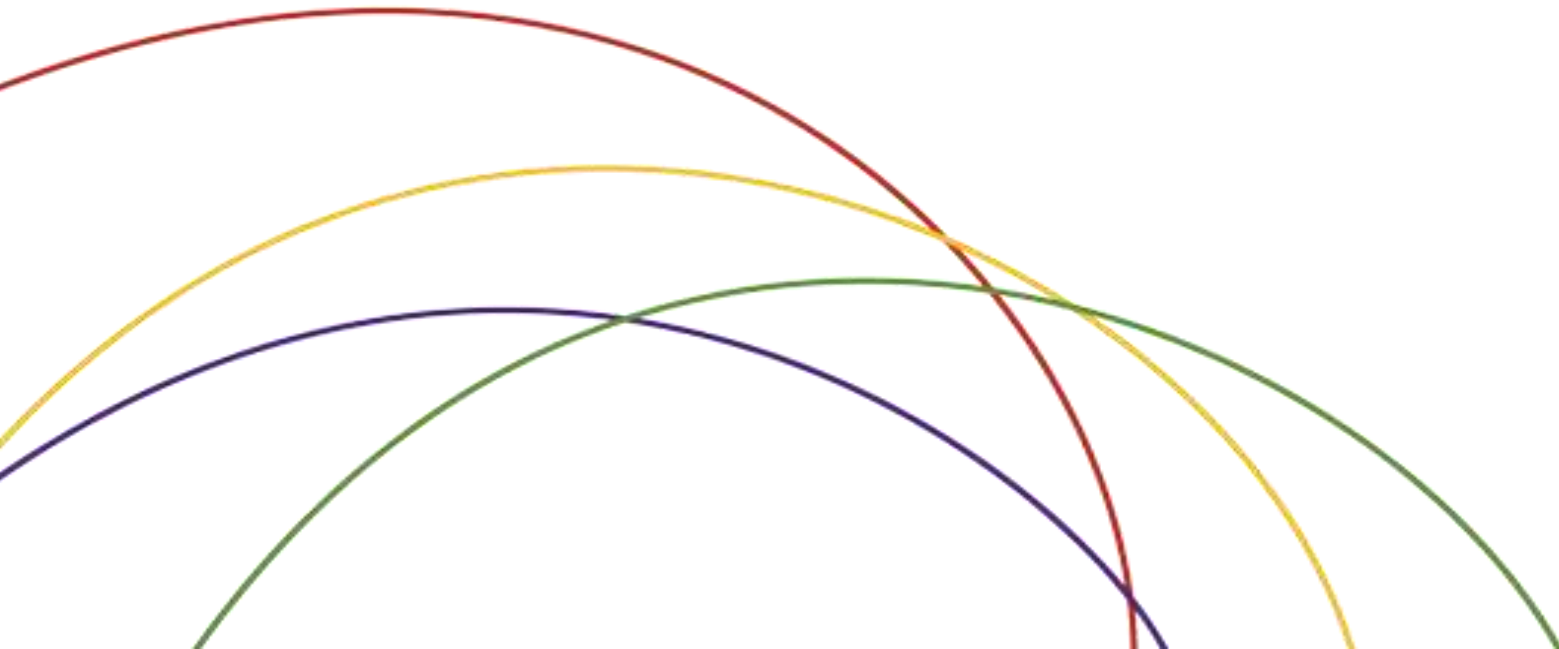
- Are there outliers in small studies?
 - How representative is each user?
 - Are others likely to have this problem?
- Caveats for reporting data with few users
 - Report numbers (4 out of 5) rather than percentages
 - Report with numbers rather than words (most, usually, almost all)

What will you use for your study?

- Krug method?
- Traditional method?
- Something in between?



Key messages



Usability testing is fun and easy

- Participants are (nearly always) helpful and interesting
- It's easy to get useful insights
- Use each test as an opportunity:
 - Think about what went well; do more of it
 - Think about what you could do better; learn for next time

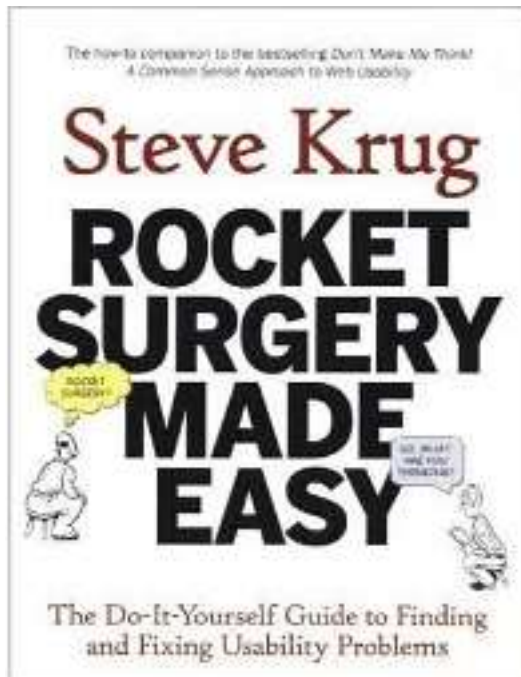
Focus on findings that improve quality

- When usability testing a survey, focus on:
 - Improving data quality
 - Reducing respondent burden

Recommended reading

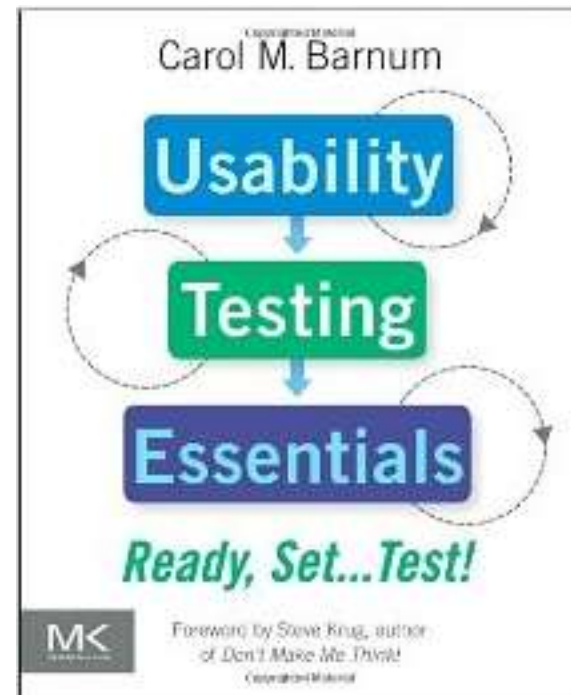
Krug method:

“Rocket Surgery Made Easy:
The Do-It-Yourself Guide to
Finding and Fixing Usability
Problems” Steve Krug



Traditional method:

“Usability Testing Essentials:
Ready, set... Test!”
Carol Barnum
(foreword by Steve Krug)



Contact us

- Emily Geisen

egeisen@rti.org

- Caroline Jarrett

caroline.jarrett@effortmark.co.uk

Twitter @cjforms

Slides <http://www.slideshare.net/cjforms>