Usability Testing December 2013

Usability Test #1 (Yadira)

Personal Information
4th year biology graduate student (Hemann Lab)
TA for cell biology course in 2010
has a lot of flow cytometry experience

Task #1
• Create a student account
• used course code: Usability instead of usability (error message said not a valid course
   code - shouldn't let her in and should have an error message)
• Then go to Sign In to access usability test

Task #2 (flow cytometry experiment)
- She didn't look at assignment in depth or the pages of the assignment
- She thinks that the design should be required for students to make the students think
through the experiment before doing it
- Didn't look like flow cytometry was a selected technique after selection
- would be nice to overlay the histograms
- drawing a gate for F.C. analysis step - seems ok/fine to her. May need to add to the
instructions the thou can repeat for another one

Asked how to add a new experiment, and she clicked on the "Add" tab

To review the assignment, clicked back on Assignments button successfully

Task #3 (western experiment)
- Couldn't find reference material in the assignments because the title is shortened. Not
the "Introduction and Reference Material"
- Was a little difficult to select a new technique from flow cytometry page (she knew she
didn't need to create new samples)
- Gel type - was confused about other gel type options that were inactive
- loaded the marker ok
- blotted ok
- moved exposure time - liked this feature
- re-probed just fine - no problems
- found tool tip to measure - liked this - the molecular weight tracer
- thought re-probing feature was really good to use the same gel/blot to look at al the
samples
- One suggestion: loading control but didn't know that it was pgk1 because couldn't find
reference material
- wants to see the reference material to know the expected molecular weight of each
protein

Notes
- can easily navigate between experimental techniques
- re-order samples - was able to find this after trying to move the blue wells
- Have a button to load samples after they are re-ordered
- would go to the reference library to find more information about flow cytometry - thought it was obvious
- didn't see the contact button (even though saw reference library and user guide)

User Guide
- would go to the user guide if have problems troubleshooting, reset password, who to contact if have issues accessing the program etc, how to export data for a report
- would like a back button in case you follow several links within the user guide
- likes screenshots in the user guide

Overall Comments
- Flow cytometry and western blotting is very realistic and will give the students a really good sense of what they will see in the real lab environment
- Navigation between techniques is also nice
- Would be nice to write conclusions right next to data - this may be ok in lab notebook if you can still see the results in lab notebook
- 7.06 doesn't contain laboratory component and so the program would provide that experience for the students

To change:
- provide more information about antibodies for western blotting section - not as apart of the introduction - to make sure that students don't miss this information
- overlay flow cytometry plots

Usability Test #2 (Thursday, December 12 @ 10:30 am)

Personal Information
biology graduate student
TA not for this class
3rd year TA

Western blotting on a very regular basis and has done flow cytometry several times

Task #1 (Setting up a student account)
- Clicked Sign In, and then Not a member
- Then filled out the form appropriately
- Read the message to sign in
- Then signed in
- No problems, no questions

Task #2 (Flow cytometry experiment)
- Read the welcome message out loud, but commented that she wouldn't necessarily

normally do that
- Then clicked on New Experiment button without reading the questions
- Then navigated back to assignments and continued reading the pages
- Design page - as a student, she would fill it out completely because unsure how she would be evaluated
- Create new Setup:
  ○ tried to click on inactive "select pre-existing set-up as a template"
  ○ read instructions
  ○ clicked 'add multiple rows'
  ○ Thinks that the confirm Set-Up means that she can only set up one experiment - causes concern
  ○ Clicked on learn more link and went to reference library - realized that this is where to look if you need more information about flow cytometry
  ○ Wasn't sure about F.C.1 label in tabs - what's F.C.?
  ○ Have an info link for "Run Samples" button in flow cytometry
  ○ wasn't sure what to do next/submit her answers - clicked on lab notebook

Task #3 (Western experiment)
- Can rename her experiments - text box on design page
- Decided to create a whole new experiment to complete question 2
- Had a comment that the samples were already loaded immediately after making the gel
- Not sure how to select the "correct" exposure time
- Was able to re-probe successfully

Additional Questions
- Was able to add a second flow cytometry experiment easily by clicking the "Add" tab
- How would set up an experiment with entirely new samples? She did find it - navigated back to Setup page and read the instructions, then clicked 'New Experiment'.
- Was able to find the drop down menu to navigate between experiments
- Can re-order samples in western blotting? Can't figure this out. Need an instruction
- Where would you find information about biological principles? found reference library ok.
- What information would you expect to find in the user guide? Answers to questions such as: Can I go back and set up another experiment?
  ○ likes screenshots of the program
  ○ was able to find the home button
- What would you do if you found a bug?
  ○ Would sign out and try again. - not sure if it's a bug or if it's that she did something wrong
  ○ Also found "Contact" and said she would fill that out

Overall Comments
- Wasn't clear that should navigate between pages of the assignment rather click New Experiment
- Also wants to go straight to Western blotting rather then setting up her experiment - she wasn't sure why she can't do that
- Liked how her work is saved on the site - especially as she is typing in her answers

- Analysis tool may not be intuitive - especially for those users who are not familiar with the technique
- Add in more functionality for flow cytometry
- Liked that she could adjust the exposure time
- Needs some way to submit the experiment work or answers the question
- Would like some more visual information in the reference library
- Add a FAQs page?
- Likes how you can figure things out as you go along - that it doesn't tell you what to do. Likes how you can re-draw the segments on the flow cytometry page. Likes how you really have to think about the data that you are analyzing (whereas the experimental data just pops up)
- Thinks it would be useful for the students to have to enter the dye they would use in flow cytometry (just one example)
- Second time through the program was much clearer for her. First few times took some getting used to navigating through the screens. Just like any website.

Usability Test #3 (Thursday, December 12 @ 1 pm)

Personal Information (Matthew Getz)
- 4th year biology graduate student
- former 7.03 TA and current 7.06 TA
- he does a lot of flow cytometry
- has done them in the past, but not in current lab, will do them in the future

Task #1
- Went to sign in
- Clicked Not a Member
- And filled out form
- read the message and then went to sign in

Task #2 (flow cytometry)
- Navigate between pages well
- Clicked New Experiment
- Found drop down easily to navigate between experiments
- Clicked Learn More in flow cytometry technique - took me to a "read me" page. Pretty long, may be useful for knowing how to do this as a technique. He knows how to do this in a real lab setting. "A nice resource, I would say"
- Setup:
  ○ Create new set-up, wasn't necessarily clear what do do - but instructions came up which was good. Wanted to click directly on a flow cytometry technique instead of setting up the experimental samples from the beginning.
  ○ Just clicked on all the samples. He wants to do trial and error.
  ○ Histograms look pretty good. looks like how a flow cytometry plot should look. He likes it.
  ○ Unsure what to do next - thought would go to lab notebook, but it's under

construction.

◦ Thought that couldn't make another segment or gate - rather would adjust the current one.

Task #3 (western blotting)
- Set up a whole new experiment for Question 2
- filled out design page this time. Tried learn more again in the western blotting technique box - looked at Reference Library too
- Set up page - added duplicates of some samples, then deleted them.
- wished that the lab was as easy as clicking a button
- could just click all the samples and go through automatically. Now selecting the antibodies requires some thoughts
- Went back to reference the assignment to find information about the antibodies, but didn't click on the Reference Material page - actually went back later and found it and realized that pgk1 is a loading control
- wants to annotate lab notebook to write notes about each of his findings
- likes that he can flip back and forth between western blots
- He did find the way to re-order samples - but add a note so students know that it is possible

General Notes/Questions
- Can navigate well between assignments and experiments
- Can easily find how to start a new experiment - New Experiment button
- Can add multiple runs in one experiment - used Add tab
- To find more information about biological principles - found the video in the IN THE LAB feature - not the reference library. The reference library is very long and daunting to him. But the reference material is needed and is awesome. Some times he wants to read it and other times he wants to just click around.
- What would you expect to be in the user guide? Would expect the same material as the reference material but more user friendly. (Bug in the user guide)
- What would he do if he ran into a bug? He clicked on "Support" at the bottom. Didn't find Contact button.

Comments
- Likes the user interface. He likes it. StarGenetics wasn't quite as nice as this. This is online - that was a java app.
- likes that can go back and forth between pages
- Add more characters for the Experiment Name
- Add a note so students know they can re-order samples on a western blot
- Likes - it's pretty, it's a bit more user-friendly, nice that have to think about lab experiments (not a substitute for doing the experiments in a real lab),
- Things that he would change - small kinks and bugs
- Would it be too tedious to have students learn about all the steps of each of these techniques

TO-DO ITEMS

Sign-In / Create account
1. Need to make course code case insensitive
2. Change error message for course code
3. Include a message that their work will be saved
4. Remove the message about account being confirmed that flashes up when signing in

Reference Library
1. Reference Library - add title at top. make "Table of Contents" smaller font
2. 'Learn more' hyperlinks don't always work to go to specific section in Reference Library
3. Provide direct hyperlink from references in the reference library to the paper/pubmed resource

Setup page
1. Change "Add Multiple Rows" button to "Add Samples". (Also change the instructions accordingly)

Assignments page
1. Typo in Usability Assignment "Reference Information" instead of "Reference Material"
2. Make Reference Material its own page in the assignments
3. Rename reference material so doesn't conflict with reference library
4. Create hyperlink in the assignment to Reference Material so know where to go.
5. Add forward and back buttons at bottom of assignment pages to navigate between pages.
6. Think about whether should have New Experiment on every page of the assignments or just at the bottom of the question pages
7. When clicking back to assignments, the program should remember which page you were looking at in the assignment
8. Add a print assignment button
9. Add a button to create a pop out window for assignments
10. We need to specify in the assignment/instructions HOW a student should submit their answers

User guide
1. search bar in the user guide - remove the lines in the lower right corner
2. home icon for user guide - this is not intuitive
3. Add contact information in the user guide
4. User guide - need a back button
5. Do more testing with user guide - home button didn't work with tester #3.

Design page
1. Change in color when select technique is not very obvious
2. Think about these technique boxes
3. Increase number of characters allowed for experiment name

Setup page
1. Clarify 'Confirm Set-up' message - add in a sentence that can add another experiment. And tell them where to add a new experiment.

Flow Cytometry
1. Clarify instructions for flow cytometry instructions - apply to all shows up even when

doesn't show up yet. And say that you can add more than one segment. Match the case of "Apply to all" in instructions and the button

2. Add icon(s) for analysis tools in flow cytometry
3. Change instructions so they don't "re-open" when click between samples. In general - make the instructions more intuitive - have a pop up window with instructions that you can select to "not show again?"
4. Bug?: If you click on Flow Cytometry in the navigation bar, it shouldn't add a new FC tab.

Western Blotting

1. Allow the marker to be re-ordered, along with the rest of the samples - model after Netflix (See Lourdes' notes on usability testing)
2. Bug: deleted a western blot experiment and took her back to the select techniques page
3. Make the other gel type options work or hide them when unavailable
4. Check that if you change the exposure time on one gel then shouldn't change it for all of them
5. Have a Load Samples button along with Load Marker
6. Check bug that adds a new western blot experimental technique tab when navigating back and forth between assignments and experiments
7. Western blotting buttons in samples window: "Add Marker" and then "Load All"

Overall Changes

1. Rename "Support" at the bottom of the program so it isn't confused with Contact. Make it "Funding"
2. Add ability to delete an experiment
3. Remove options that are not available as the grayed-out version is causing confusion.
4. Make New Experiment button more prominent
5. Radio button - keep green button but add a black dot in the middle
6. Add in functionality to move the Feedback pop-up window
7. Make progress bar (for the experimental techniques) less prominent in the design

Future To-Do's

1. Overlay flow cytometry graphs (along with increased flow cytometry functionality)
2. add information about antibodies on western blotting pages somewhere so users don't have to navigate back to assignments page
3. Make sure to add an "i" icon for flow cytometry page to explain run samples