Combined Notes on the Assignment Builder

Documents
1. Design documents from our graphic designer, Jamie

- Folder location: Dropbox -> StarCellBio -> Problem Set Builder -> User Interface Design Documents - Jamie Waters

2. Design sketches (Keynote and PDF formats)

- Folder location: Dropbox -> StarCellBio -> Problem Set Builder -> User Interface Sketches

3. Icons (archive, dashboard, copy, delete, histogram pop up window, and map/builder icons)

- Folder location: Dropbox -> StarCellBio -> Problem Set Builder -> Icons

Current Assignment Builder Draft
The current version of the assignment builder is only available on scbdev.mit.edu. Log in to instructor accounts. There is a draft of the following pages: dashboard, experiment setup and western blotting experimental technique

Alison's notes on the current draft (abbreviated notes)

- As far as I can tell, the draft of the assignment builder only works to create new assignments, not edit or simply view existing assignments.
- In addition, the instructor cannot publish or preview the new assignment and as a result, cannot tell whether the assignment is being set up correctly in StarCellBio.
- The instructor can set up an instructor account (when the "Create instructor account" link is present on the homepage), but there is nothing in place to protect the user from creating an instructor account and a student account with the same email and password. When I create an account, there is an option to select whether it is a student or instructor account. However, this should also be implemented in the Sign In window - with "Student" being the default selection.
- We also agreed that an instructor will be able to navigate backward in the process and edit things. If the instructor edits options/dropdowns/text boxes, etc. then a warning will appear saying that the instructor may lose information that has already been set on later pages. As a result, 'Back' buttons need to be added to all of the assignment builder pages in the lower left corner.

Assignment Builder
Dashboard
The best current mock-up of the dashboard is in the current (online in scbdev.mit.edu) version of the assignment builder. Although not everything is working, the layout and design of all of the dashboard components is correct.

Graphic Designer Document: 'SCB_ProblemSetBuilder_07.pdf'
This document shows you the table that will display all of the instructor's assignments.

Notes on the Dashboard & Dashboard functionality:

- The instructor can set up a new assignment by selecting 'Create a New Assignment'
- The assignment name, course name and course code will be displayed in the first three columns.

- The instructor can change the permissions/visibility of each assignment using the drop down menu in the 'Permission' column. A dialog window will appear asking the instructor to confirm their permission selection.
- Each assignment can be deleted, copied, or archived. Confirmation windows should appear when an instructor selects the delete and archive options.
- Notes on what you can do with each assignment permission level:
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    - A public assignment can be viewed (within the assignment builder section of SCB) or previewed (within StarCellBio itself).
    - A private assignment can be edited (within the assignment builder section of SCB) or previewed (within StarCellBio itself).
    - An archived assignment can be viewed (within the assignment builder section of SCB) or previewed (within StarCellBio itself).
- In addition to assignments that an instructor has created on his/her own, an instructor should be able to see the publicly available assignments within StarCellBio. These are Exercises 1-3. An instructor cannot delete these assignments, but can copy them in order to edit or simply release them to his/her own students.
- The instructor can navigate back the dashboard from each assignment by simply clicking on the dashboard icon in the navigation bar near the top of each page.
- The instructor's name and the message "Welcome, Instructor's Name!", will NOT be displayed at the top of each page. Please ignore this part of Jamie's document.

Outline/Navigation on Assignment Builder pages

There are two features to help instructors visualize where they are in the process of setting up a new assignment and to easily navigate between sections of the assignment builder.

1. Outline (breadcrumbs) on the left side of each page

The outline is visible in many graphic designer documents: 'SCB_ProblemSetBuilder_11_FlowCyt.pdf' and in 'ProblemSetBuilder_Map_03.pdf', just to name two documents.

When the instructor first navigates to the problem set builder, the other pages in the outline will not be visible/will not be selectable (I can't remember what we decided upon). As the instructor steps through each step of setting up an assignment, then each page will become selectable.

2. Map at the top of each page in the assignment builder

Graphic Designer Document: 'ProblemSetBuilder_Map_03.pdf'

This map appears at the top of each page and indicates to the instructor where s/he is in the process of setting up a new assignment. The current page will be highlighted in dark blue. This map is for visualization only and is not used to navigate between sections of the assignment builder - the instructor will utilize the outline to navigate between sections/pages.

Assignment/Course Setup

The best current mock-up of the assignment/course setup pages is in the current version of the assignment builder (scbdev.mit.edu). The questions and how they appear are correct based on our design.

Notes:

- Once an instructor selects 'Create a New Assignment +', the instructor will be taken to the first couple pages of the assignment builder where s/he will specify details for the assignment such as the course name, course code, assignment name, etc.
- An instructor can either set up a new course or add an assignment to an existing course.
- The instructor can then select whether s/he would like to start a completely new assignment or use another assignment as a template.
- After these steps, then the instructor will be taken to the first page of the experiment setup.

- We also agreed that an instructor will be able to navigate backward in the process and edit things. If the instructor edits options/dropdowns/text boxes, etc. then a warning will appear saying that the instructor may lose information that has already been set on later pages. As a result, 'Back' buttons need to be added to all of the assignment builder pages in the lower left corner.

Experiment Setup

The best current mock-up of the experiment setup pages is in the current version of the assignment builder (scbdev.mit.edu). The questions and how they appear are (mostly) correct based on our design, with a few exceptions - see 'Notes' below.

If you would also like to look at Jamie's documents and/or our sketches, then here is the information on the best versions to look at:
Graphic Designer Documents:

- Pages 6-10 of 'SCB_ProblemSetBuilder_05.pdf'
- Page 2 of 'SCB_ProblemSetBuilder_07.pdf'

Design Sketch Document:

- Pages 2-4, 6 of 'Instructor Account UI - Experiment Setup Ver3.pdf' (Page 5 was since updated to go with the updated 'sort' functionality)

Notes:

- All experiments in SCB need to have a 'Strain' and 'Treatment'. Instructors define the number of strains and the names of strains in question 1 of the Experiment Setup pages. In question 2, instructors select the additional experimental variables for their assignment (except for strain and treatment). These variables are treatment concentration, treatment duration, treatment start time, collection time, and temperature.
- Treatment concentration should not be automatically selected in the current version of the assignment builder.
- Depending on the experimental variables that are selected in question 2, then question 3 will update appropriately.
- Question 3 notes:
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    - If the instructor does not select any additional variables, then the instructor will only have to define the number of treatments and their names in question 3.
    - As treatment concentration, treatment start time, and treatment duration are all dependent upon a specific treatment (and treatment name), these variables will all fill in on the same row as the treatment name in question 3a. They all need their own units drop down menu as well (pre-populated with time units or concentration units, as appropriate).
    - If the instructor selects temperature and/or collection time, then these variables will appear as separate parts to question 3 (3b and/or 3c). The units for temperature are automatically set to degrees celsius, but the collection time will need a units drop down menu.
- Question 4 will then display every possible combination of the strain, treatment and other experimental variables selected by the instructor. At this point, the instructor can delete any particular combination that is irrelevant to his/her assignment. Other than the delete button, this page is un-editable. The instructor needs to click 'Back' to edit any of the experimental variables.

- There is a 'SORT' feature in question 4 where the instructor can choose how to display the samples in the 'Samples' window that appears in SCB when the user selects 'ADD SAMPLES'. All of the samples will display in the 'Samples' window, organized by sample name, then treatment, then the other variables, by default. However, if the instructor would like to sort the list by a variable other than strain, then this can be accomplished in the 'SORT' feature. See the pop-up window that appears when you click 'SORT' in the current version of the assignment builder.
- The last step in the experiment setup is a preview window of how the 'Samples' window will appear in StarCellBio. This will be formatted just like the samples window in StarCellBio to give the instructor an idea of how all of the samples will appear to the user. The instructor just needs to confirm the experiment setup before continuing to setup the experimental procedures
- We also agreed that an instructor will be able to navigate backward in the process and edit things. If the instructor edits options/dropdowns/text boxes, etc. then a warning will appear saying that the instructor may lose information that has already been set on later pages. As a result, 'Back' buttons need to be added to all of the assignment builder pages in the lower left corner.

Experimental Techniques

The best current mock-up of the experimental technique question is in the current version of the assignment builder (scbdev.mit.edu). The question and how it appears is correct based on our design.

The instructor is asked which experimental technique(s) s/he would like to add to the experiment. Based on the instructor's selections, the appropriate experimental techniques will appear for the instructor to define.

Western Blotting Experimental Technique

The best current mock-up of the western blotting experimental technique pages is in the current version of the assignment builder (scbdev.mit.edu). The questions and how they appear are (mostly) correct based on our design, with a few exceptions - see 'Notes' below.

If you would also like to look at Jamie's documents and/or our sketches, then here is the information on the best versions to look at:
Graphic Designer Document: Pages 11 & 12 in 'SCB_ProblemSetBuilder_05.pdf'
Please note that Jamie only prepared mock-ups of question 5 (labeled as Question 6 in her document accidentally) and the preview blot parts of the western blotting experimental technique pages of the assignment builder.

Design Sketch Document: Pages 1-7 in 'Instructor Account UI - Western blotting Ver4.pdf' (I have excluded page 8 for now as adding in background bands as a "preset" function is definitely an advanced functionality that is not top priority.)
For notes on the functionality required in each step to set up a western blotting experimental technique, see the design sketches: 'Instructor Account UI - Western blotting Ver4.pdf'. Notes on each step are in blue text. However, design elements and layout have been modified by the graphic/user interface designer. In these cases, defer to Jamie's design documents, listed above.

Notes:

- In the first question, the instructor selects the type(s) of lysates to provide as options for the user. Depending on which lysate type(s) are selected in question 1, then they will appear later in question 4 (when the instructor defines the number and size of bands that appear on the western blot for each lysate type).
- Some of the headings in the questions are cut off - such as in questions 3 and 4.
- Question 5 is not working in the current version of the assignment builder. See Page 11 in 'SCB_ProblemSetBuilder_05.pdf'
- The 'Preview film' button is not currently working in the current version of the assignment builder. See Jamie's design documents to see what it should look like. (Page 12 in 'SCB_ProblemSetBuilder_05.pdf').

Flow Cytometry Experimental Technique
Graphic Designer Documents: 'SCB_ProblemSetBuilder_09.pdf' and 'SCB_ProblemSetBuilder_10.pdf'
The 'SCB_ProblemSetBuilder_09.pdf' document shows all of the steps of setting up a flow cytometry experimental technique.
'SCB_ProblemSetBuilder_12.pdf' shows updated formatting of the pop up window in which instructors can easily switch back and forth between the histogram editing modes (select histogram, draw new histogram, and edit histogram).

Design Sketch Document: 'Instructor Account UI - Flow Cytometry Ver3.pdf'
For notes on the functionality required in each step to set up a flow cytometry experimental technique, see the design sketches: 'Instructor Account UI - Flow Cytometry Ver3.pdf'. Notes on each step are in blue text. However, design elements and layout have been modified by the graphic/user interface designer. In these cases, defer to Jamie's design documents, listed above.

Notes:

- The "Edit histogram" functionality in the pop up window is not shown in Jamie's design documents. For this information, please see page 5 of the design sketches, 'Instructor Account UI - Flow Cytometry Ver3.pdf', but implement the design and layout as suggested by Jamie.

Microscopy Experimental Technique
Graphic Designer Document: 'SCB_ProblemSetBuilder_09_Microscopy.pdf'.

Design Sketch Document: 'Instructor Account UI - Microscopy Ver5.pdf'
For notes on the functionality required in each step to set up a microscopy experimental technique, see the design sketches: 'Instructor Account UI - Microscopy Ver5.pdf'. Notes on each step are in blue text. However, design elements and layout have been modified by the graphic/user interface designer. In these cases, defer to Jamie's design documents, listed above.

Notes:

- Jamie did not detail each step of setting up a microscopy experimental technique. In total there are 3 questions/steps to set up a microscopy experimental technique, and Jamie sketched out steps 2 and 3. For step 1 (question wording and answer choices), please see the design sketch document, 'Instructor Account UI - Microscopy Ver5.pdf'.
- The question text on page 4 in Jamie's document has been updated. For the updated question wording, please see the design sketch document, 'Instructor Account UI - Microscopy Ver5.pdf'.