

K-12 Learner Experience

USABILITY TESTING RESULTS
OCTOBER 2014

Design Vision

An overview of the vision, themes, and principles can be found in the following MyAcademy discussion thread:

[Improving the Learning Experience in Brightspace](#)

Note: Make sure you're logged into the site or you'll get a error page when you click the link

Testing Goals

1. Evaluate Overall Information Architecture - Is the structure, language, and flow throughout the system understandable and intuitive for high school students?
2. Validate whether the proposed solution improves engagement - Do students enjoy taking lessons and completing activities. Are they motivated to explore the system and interact with learning activities?
3. Evaluate the usability of the navigation system - Do students feel guided through their common tasks and have a clear sense of progress and place within the system?

These goals support the Learner Experience improvements that Taurus will be investing in starting in the next month or so. We are targeting the K-12 student experience to start, but the work we are doing will help support a broader effort to build out our Learning Activity Service.

Study Details

Participants

Forty Grade 9 students were recruited from St. John's-Kilmarnock High School to participate in a comprehensive usability study of a future vision of Brightspace. All of the students knew very little about Brightspace and had never used any of our products before. This was the first time any of them had seen or used the interface we were testing. Some students were aware of other online learning platforms such as Khan Academy and Schoology, but in general most of the students had very limited experience using any Learning Management System.

A total of eighteen participants were able to complete the entire usability test. Each participant was tested individually and a facilitator helped guide the tasks, ask questions, and take notes. Data from participants that did not complete the entire test (due to technical reasons on their end, or lack of time) is not reported.

Setting

All tests were completed remotely using an externally hosted prototype, online surveys, and an Adobe Connect session to observe the participants and aid communication between the facilitator and participant. The facilitator also helped provide an overview of the plan and helped them get started with the test.

Test Plan

You can view the full test script here:

[Learner Experience Usability Testing Script](#)

Tasks

The study's tasks were chosen based on previous research about students' most common tasks related to consuming and completing learning activities in the system. The set of tasks included in the test represent a significant scope of experience but not the total Learner Experience in Brightspace (for example the Gradebook and Communication tools we not tested here, but are important components if we wanted to evaluate a complete learner experience).

Prototype

The prototype is a fully interactive, and authentic learning experience, built using a Rapid Prototyping framework. You can access the prototype and complete the same tasks that we tested by visiting the following address:

<http://brightspace.sregehr.mixture.io/>

Password: d2l

The prototype looks and behaves like a real application. You can view and complete activities in courses and move freely around and explore the content, take quizzes, and submit assignments like a real student would. All completion is tracked accurately when you use the prototype - you can even close your browser and come back and everything that you did previously is remembered. This allows us to test the learner experience over time and context rather than a static scenario.

The goal is to test a holistic learner experience - page layout, flow, language, interactions, and responsiveness are combined and mixed together and then each component can be target tested in context of the product as a whole. The design is completely responsive and looks great in all screen sizes, from the largest desktops to the smallest smartphones.

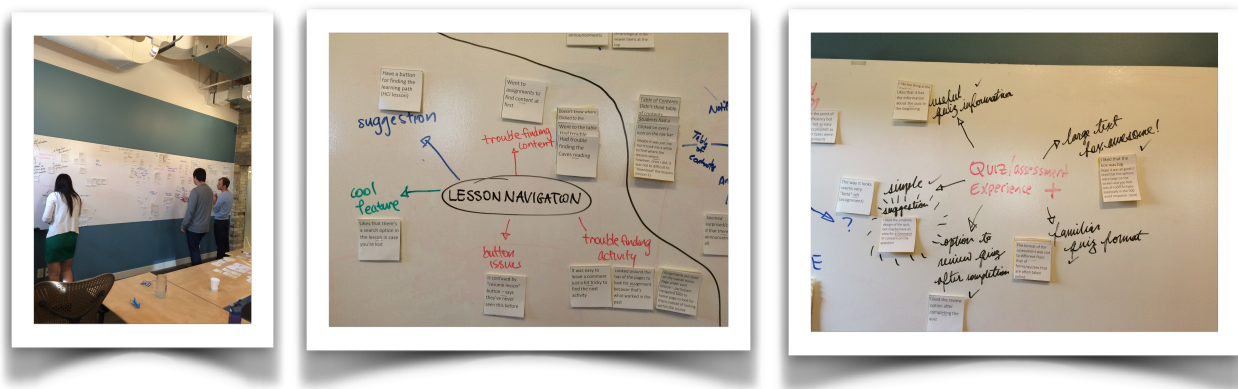
The prototype is built in a way that separates the page structure, from the presentation, from the interactions and application logic. This allow us to make rapid changes/improvements that we can immediately test and validate in a way that is very close to how the end product would look and behave, without any development-heavy investment. And since the UI layer is relatively decoupled from the presentation and logic, we can potentially reuse some of the UI components in the end product, or adapt and model them in a new UI framework.

The prototype will remain active and continually updated as we iterate on workflows, interactions, and visual design. So bookmark that URL and have fun exploring a prototype of a new learner experience in Brightspace!

Data Collection

Single Ease Question (SEQ) and System Usability Scale (SUS) ratings were collected using a web browser form. Secondary observations were collected by assisting experimenters.

The collected feedback was transformed into stickies and we used the Affinity Mapping method to group feedback into themes. Here's some pictures of us working through the Affinity Mapping process:



Results

We measure usability using SEQ ratings and SUS scores. The SEQ (Single Ease Question) is a **7-point rating scale** to assess how difficult users find a task. It was administered immediately after a participant attempted to complete a task during the usability test. The SUS (System Usability Scale) is a ten-item questionnaire administered at the end of a test to users for measuring the perceived ease of use of the system.

SUS scores were collected for 18 participants and the calculated average SUS score was **82.94** (see Figure 1 below). This value surpasses the global SUS average of 68. Sauro's research suggests that people are likely to recommend a product that has SUS score higher than 80.3, which this system has also scored above.

Information about the Single Ease Question (SEQ) can be found [here](#).

Tasks	Avg SEQ	Std Deviation
Review courses and initial impressions	6.71	0.47
Read course introduction and objectives	6.29	1.05
View unread course announcements	5.74	1.68
Review lesson and complete learning activities	5.88	0.92
Take a quiz	6.29	0.99
Navigate from one lesson to another	6.76	0.56

Add a comment to a learning activity	5.65	1.17
Navigating to another course	6.24	1.52
Complete a lesson in a different course	6.27	0.80
Submit an Assignment	6.24	1.52

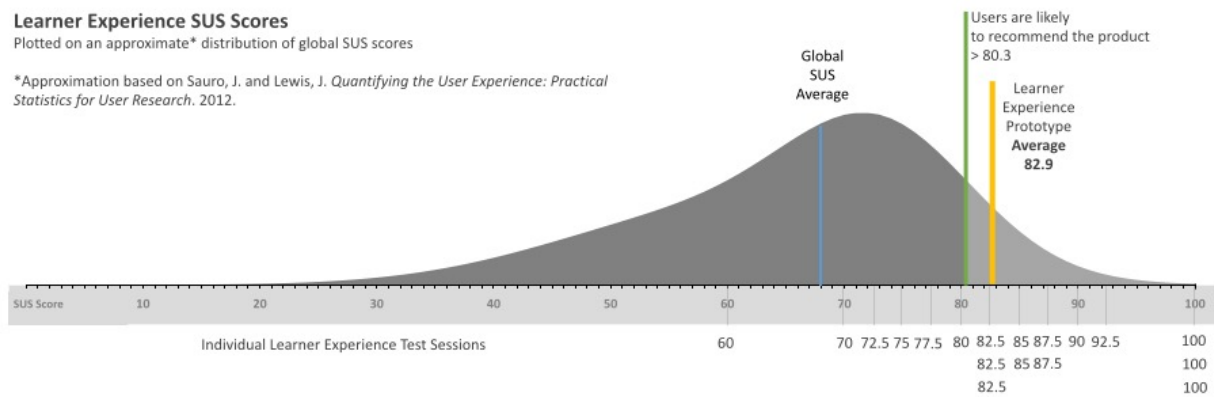
Overall SUS Score: 82.9

Figure 1

Learner Experience SUS Scores

Plotted on an approximate* distribution of global SUS scores

*Approximation based on Sauro, J. and Lewis, J. *Quantifying the User Experience: Practical Statistics for User Research*. 2012.



Overview of Tasks

Participants were asked to complete ten top tasks for High School Students taking online courses.

TASKS

SEQ

1. **Review all Courses and Initial Impressions**

6.71

"It's the beginning of the term and it's your first time viewing your courses in Brightspace. You want to explore what's on your homepage. Please voice your thoughts, opinions (first impressions) about the main homepage"

Concerns

- Most students overlooked the "Getting started" area - even though it wasn't called out as a task, we expected more students to explore and customize their homepage.

Likes

- Students really appreciated the larger font and easy click targets (large buttons)
- Many commented that they thought it was well organized, easy to use, and modern.
- They really liked the inclusion of all of the instructor information right on the main homepage alongside their courses.
- They really responded well to a roll-up view of all assignments across all courses. It was very reassuring to see all assignments in one place, with clear progress indication

Suggestions

- We should do more targeted testing of the "Getting Started" area to determine value. Several students mentioned that they appreciated the ability to immediately customize their profile, but many just looked over it and didn't feel compelled to explore.

2. Read Course Introduction and Objectives

6.29

"Now, you enter your Introduction to Astronomy course and read through the course introduction information and course objectives to get a better feel for what you will be learning throughout the term."

Concerns

- A couple of students didn't clearly understand the difference between the Introduction tab and the Objectives tab
- Some students found the tabbed interface to be too subtle - not enough scent that they are clickable areas
- A few students didn't even read the Introduction and Objectives and clicked right into the first lesson

Likes

- Many students really appreciated the clean layout, and clarity of information on the page
- Students liked that the Overview led right into the first lesson - very natural to start the course right after reading about the overall course objectives etc.
- Students appreciated the fact the most important information was emphasized and clearly displayed

Suggestions

- Consider combining Introduction and Objectives information
- Consider using icons or some additional style elements to make the tabs seem more clickable

3. View Unread Announcements

5.74

"Your teacher created an announcement to welcome you to the course. Check the course announcements page to read the announcement and any other news that your instructor may have posted."

Concerns

- A couple of students had difficulty finding the announcements area. The icon-based side navigation requires you to hover over each of the items to know what they are.
- A couple of students didn't immediately understand that the red dot meant "Unread"
- Some students mentioned that they would expect announcements to display as a box on the page instead of an area to navigate to

Likes

- Many students really liked the Bullhorn icon - it seemed really intuitive that it represented announcements
- The red dot to indicate "Unread" seemed to resonate with the majority of students. They said that it made it seem like something important was in there

Suggestions

- Make announcements feel more integrated into the course experience. It should feel like the instructor is speaking to students in context of the course material/lesson instead of forcing students to go to an area to view announcements

"You start the first lesson labelled The Solar System. You review the content of all the activities in the lesson. You decide to download a couple of these activities for offline viewing at a later time. Please download one or two activities in this lesson."

Concerns

- Some students didn't immediately understand the difference between a lesson and an activity
- A few students mentioned they wanted the ability to view all readings, assignments and not just view them organized into lessons.

Likes

- Most of the students found it very intuitive to navigate through a lesson from one activity to another
- Students really liked the visual design, especially the use of pictures for the next activity at the bottom of the page
- Most students found downloading to be very intuitive and easy to find. Our previous testing of actions and navigation helped here!

Suggestions:

- Consider using labels in the breadcrumb navigation to differentiate between course switcher, lesson switcher and activity switcher
- Consider allowing students to view all activities based on the type of activity in context of the lessons - ie. show me all of the readings and assignments in all of the lessons.
- Consider creating more visual difference between the lesson view and the activity view.

5	<p>Take a Quiz</p> <p><i>“Now that you’ve completed the lesson, your instructor wants you to complete a quiz on The Solar System. Note: your performance on this quiz is not evaluated or included in our usability data.”</i></p> <p>Concerns</p> <ul style="list-style-type: none"> • Some students had difficulty finding the quiz - they went looking for the quiz in an “Assessment” or “Assignment” area and didn’t realize the quiz was in context of the lesson • Some students wanted to be able to clearly differentiate (icons weren’t very effective) between types of activities. It’s not clear whether this is because our task was to take a “quiz” so they looked for a “quiz”, or whether this is something based on some other learned behavior. <p>Likes</p> <ul style="list-style-type: none"> • Most of the students found it very intuitive to navigate through the quiz • Students like the summary of the quiz properties prior to starting the quiz • They also appreciated seeing a full review of their answers prior to submitting the quiz <p>Suggestions</p> <ul style="list-style-type: none"> • Consider using action verbs to distinguish between activity types - ie. Watch: Lecture 1, Submit: Create a Persona, etc • Provide an easy way to view all quizzes in the course 	6.29
6	<p>Navigate from one Lesson to another</p> <p><i>“Now that you have completed the first lesson, let’s move on and complete the next lesson.”</i></p> <p>Concerns</p> <ul style="list-style-type: none"> • Some students didn’t immediately understand the difference between a lesson and an activity <p>Likes</p> <ul style="list-style-type: none"> • Pretty much every students found it very intuitive to navigate from one lesson to another due to the prominent “Continue” button at the end of a lesson <p>Suggestions</p> <ul style="list-style-type: none"> • Consider using labels in the breadcrumb navigation to differentiate between course switcher, lesson switcher and activity switcher • Consider creating more visual difference between the lesson view and the activity view. 	6.76

7	<p>Add a Comment to a Learning Activity</p> <p><i>“Your instructor now wants your feedback on the Caves reading. He asks that you add short comment about what you learned in the activity and ask any additional questions you may have.”</i></p> <p>Concerns</p> <ul style="list-style-type: none"> • A few students found it difficult to discover the commenting area. <p>Likes</p> <ul style="list-style-type: none"> • The concept of commenting in context of an activity was very popular. Students appreciated the ability to reflect and share with classmates and their instructor in context of the learning material. • Students said it made the system feel more relatable to other social media sites that students use frequently <p>Suggestions:</p> <ul style="list-style-type: none"> • Consider using icons or some additional style elements to make the tabs seem more clickable • Investigate using comments at the lesson level - some students mentioned it would be nice to have a discussion about the lesson as a whole. 	5.65
8	<p>Navigate to another course</p> <p><i>“You decide that you’ve completed enough coursework for your Introduction to Astronomy course. Let’s change courses and complete the first lesson in your Introduction to Human Computer Interaction course.”</i></p> <p>Concerns</p> <ul style="list-style-type: none"> • A couple of students clicked the home icon since they thought it would bring them back to the main homepage instead of the course homepage. <p>Likes</p> <ul style="list-style-type: none"> • All but a couple students easily found the top navigation to change between courses, lessons, and activities <p>Suggestions</p> <ul style="list-style-type: none"> • Consider using labels in the breadcrumb navigation to differentiate between course switcher, lesson switcher and activity switcher • Investigate ways to better distinguish between the course home and the main homepage. The “Home” concept shouldn’t be used for both and it seems like people typically associate Home with the initial main/org homepage. 	6.24

9 Complete a Lesson in a different Course

6.27

"Now that you have entered your Introduction to Human Computer Interaction course, you decide to review the introduction, course objectives, and overall learning plan. Please navigate through all of the activities in the first lesson. You can skip ahead if you want."

Concerns

- A couple of students clicked the home icon since they thought it would bring them back to the main homepage instead of the course homepage.
- Some students didn't immediately understand the difference between a lesson and an activity

Likes

- Most of the students found it very intuitive to navigate through a lesson from one activity to another
- Students really liked the visual design, especially the use of pictures for the next activity at the bottom of the page

Suggestions

- Consider using labels in the breadcrumb navigation to differentiate between course switcher, lesson switcher and activity switcher
- Consider creating more visual difference between the lesson view and the activity view.
- Investigate ways to better distinguish between the course home and the main homepage. The "Home" concept shouldn't be used for both and it seems like people typically associate Home with the initial main/org homepage.

"Now that you are finished reviewing the content in this lesson, you are asked to submit your assignment called "Create a Persona" - please accomplish this using the method that makes sense to you."

Concerns

- Some students expected that you could easily filter and view Assignments from the Table of Contents area rather than in context of the lesson
- A couple of students had trouble submitting because they had to scroll down to see the "Submit Assignment" button
- One student mentioned it would be great to be able to upload from Google Drive

Likes

- Most of the students found it intuitive to submit a document and complete the assignment
- Students enjoyed the fact that they could write a response/complete the assignment inline instead of requiring to upload from their desktop

Suggestions

- Consider providing a way to view all assignments in the table of contents view
- Add support for more formatting options in the "Write a response" submission method
- Investigate adding support for third-party file sources (Dropbox, Google Drive, OneDrive, etc)