

USABILITY TESTING

Spring 2021 W210 Capstone Project

AutoReader

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Test Goal

- To understand teachers' requirements for an MVP product.
- To leverage teachers' feedback for product enhancement both on the modeling perspective and UI/UX perspective.
- At the end of the testing, make a prioritized list of issues to be addressed, along with suggested solutions.

We seek to answer 3 primary questions:

- How much time do teachers actually save with our product when evaluating student work?
- Is the website generally easy for students and teachers to navigate
- What metrics and graphs would users most like to see on their dashboards?

Test Approach

SurveyMonkey

In order to understand the value we are bringing on the table with our product, we want to understand how much time teachers actually save with our product when evaluating student work. We will be carrying this survey through SurveyMonkey. A/B test will be used to compare the time for participants to read through a handwritten piece against the time to read through the typed version. We will distribute the survey to Berkeley Slack channels for volunteers to fill in.

Virtual Session (through Zoom)

Apart from the survey conducted on Amazon Mechanical Turk, we will also recruit participants for virtual testing sessions conducted through Zoom. The goal of these sessions is to understand how user friendly it is to navigate through different parts of the application for a first-time user.

We will arrange to meet with our test subjects virtually. Plan for approximately 30 minutes per session. We will make an audio or audio/video recording of each session. The focus is on observing rather than interviewing. We want to see what the user can do without help, not ask them how they would design the visualization.

Test Tasks and Questions

SurveyMonkey

Read a student essay and answer a few questions

Please time the length of time you spend reading the essay.

Figure 1. Survey Header

Either one of the version would be presented:

3rd grade
Level 4

What I want to Be
When I Grow Up

I want to be on the Los Angeles Sparks Womens Basketball Team. It would be fun because I would meet good friends and I would be on T.V. Also, I would make a lot of money, I have practiced a lot and now it would pay off all the practice. I've loved Basketball since I was four years old. I started by my Grandfather helping me throw the ball. Then I started throwing underhand and I've made a lot of baskets. Then I learned throwing overhand and making a lot of baskets. I have kind of learned that about traveling and fouls. I have never played with people before. Well maybe with my two friends and my family but that's mostly it. If I try and try even more I will reach my dreams of playing on a real team. But my mom says that no matter what I do never give up.

Figure 2. Handwritten Essay

3rd grade
Level 4

What I want to Be
When I Grow Up

I want to be on the Los Angeles Sparks Womens Basketball Team. It would be fun because I would meet good friends and I would be on T.V. Also I would make a lot of money, I have practiced a lot and now it would pay off all the practice. I've loved Basketball since I was four years old. I started by my Grandfather helping me throw the ball. Then I started throwing underhand and I've made a lot of baskets. Then I learned throwing overhand and making a lot of baskets. I have kind of learned that about traveling and fouls. I have never played with people before. Well maybe with my two friends and my family but that's mostly it. If I try and try even more I will reach my dreams of playing on a real team. But my mom says that no matter what I do never give up.

Figure 3. Typed Essay

Questions:

1. How long did it take you to read the essay?
2. What is the name of the team the author wanted to be on?
 - a. California Sparks Womens Basketball Team
 - b. New York Sparks Womens Basketball Team
 - c. Los Angeles Sparks Womens Basketball Team
 - d. San Francisco Sparks Womens Basketball Team
3. Since what age did the author start loving basketball?
 - a. 3
 - b. 4
 - c. 5
 - d. 6
4. What did the mom say to the author?

- a. Never give up
- b. Follow your heart
- c. Enjoy every game

Virtual Session (through Zoom) - 30mins/session

<http://autoreader-env.eba-i6sa96qv.us-west-2.elasticbeanstalk.com/autoreader/accounts/login/>

Questions to go over:

- Can you log in with the student's credentials provided at the start of the session?
 - username: bobby
 - password: verymemorable
- Can you navigate to 2nd grade english course?
- Navigate to your dashboard.
 - How many unanswered questions do you have on journal entries assignment?
 - Which questions are those?
- Is there anything else you'd like to see on the dashboard as a student?
- Can you log in with the teacher's credentials provided?
 - username: teacher-user-test
 - password: verymemorable
- Navigate to the assignment called "Journal Entries" under 2nd grade english course.
- What is Bobby's final answer for question 2 in the Journal Entries assignment?
- Can you provide feedback for Bobby on question 2 of Journal Entries?
- A student would like to join this course. Can you find the course code for the student?
- Navigate to your dashboard.
 - How many students do you have in your course?
 - What is Martha's overall response rate? Bobby's?
- Is there anything else you'd like to see on the dashboard as a teacher?

Notes / Analysis

SurveyMonkey

This is an A/B test. We sent out the link to the two surveys and asked the participants to take either one of the surveys but not both. The survey can be taken only once by each participant. This is controlled through tracking the IP address.

Below is the result from the two surveys:

OPEN Read a student essay and answer a few questions <small>Created: 03/07/2021 Modified: 03/23/2021</small>	17 Responses	100% Completion rate	2 mins Typical time spent	... Options
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Figure 4. Survey Result on Handwritten Essay

Typed Document Survey:

OPEN Read a student essay and answer a few questions <small>Created: 03/07/2021 Modified: 03/22/2021</small>	12 Responses	100% Completion rate	1 min Typical time spent	... Options
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Figure 5: Survey Result on Typed Essay

We were able to get 29 participants to the survey as of March 30, 2021.

From the statistics, we can see that it takes half the time for people to read and answer the questions with the typed document compared to the handwritten document.

One side note is that we also considered looking into the error rate from the two surveys. However, the participants were all able to get the questions correctly.

Virtual Session

Session 1

link to recording:

https://zoom.us/rec/play/He5vXQff6VzUz5FriT5hCg2cGEokKCPqD0zSX-TSIXfM2SKFFwHcoBWaqazdVez5TC5e_bUHC-ud2cQ.CafukEb1ljblACjz

For student dashboard:

- a calendar view of when the assignments are due.
- filter by course instead of showing everything because things get busy when there are more courses and assignments

For teacher's dashboard:

- sheet and table for the students instead of just a progress bar so that we can tell individually what the student's response rate is per course/assignment.
- although this app is not to help teachers with grading, it would be nice to have a place for teachers to enter the grade for the students so that there's a portfolio

Session 2

link to recording:

https://zoom.us/rec/play/fo9wCe4HK8onJy393l3zd8VqA2zsSLTHm-YB58oe-PvJsgB9uUT3zfi_13lx_GNWn7wwfce7Z9SjZXZ4.Asw_ccDY0ziSo-lF

For student's dashboard:

- the deadline of each assignment

For teacher's dashboard:

- accumulative performance of the students, especially helpful for the teachers to help students with their weak areas.

Session 3

link to recording:

https://zoom.us/rec/play/0vqkJAuP_jDVXFFdvy9AWNynD-QC1XeEhk98S5Qay4Qd70_KN0qW-0XmrzLoGV7WY4n24E2hXPTlyViL.VlvfIYUbwI0zyRx2

For student's dashboard:

- see the picture after uploading it.

For teacher's dashboard:

- If the name of the students is clickable would be much better. There are a few clicks before you can navigate to the student's answer to a specific question.

Priority List

1. On the students' dashboard: create a calendar view of when the assignments are due. It is important for the students to visually see the deadlines.
2. On the teachers' dashboard: create a students' performance table broken down by course and assignments to replace the current progress bar. This is helpful for teachers to track cumulative performance of the students.
3. On the students' assignment view: be able to see the image/scanned document uploaded.
4. On the teachers' assignment view: have a place for teachers to enter the grade for the students
5. On the teachers' dashboard: keep track of students' grade overtime so that there's a performance portfolio for each student.