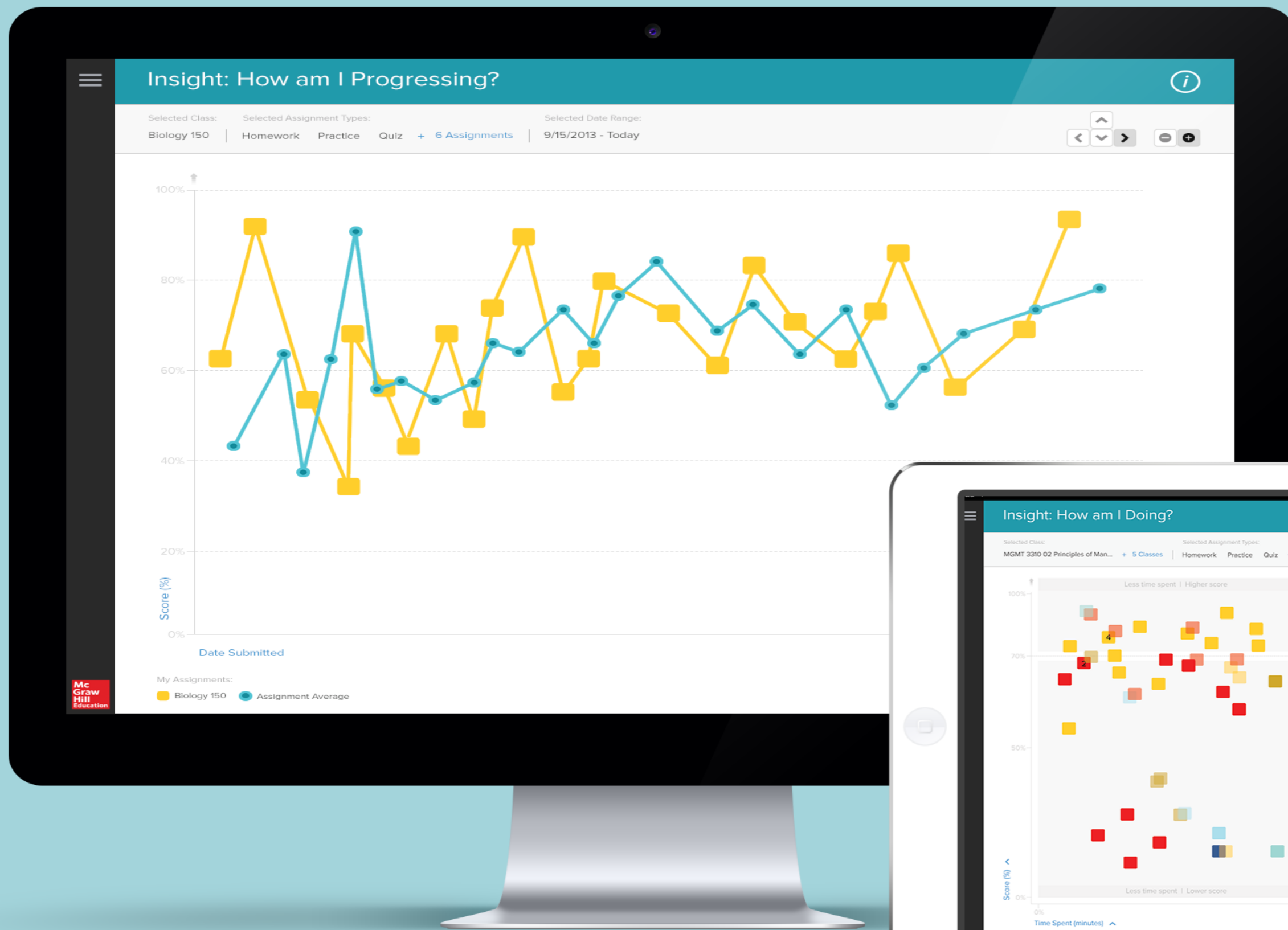


Case Studies

Laura Simpson UX Designer

laura.simpson@gmail.com | www.laura-simpson.com





Student Analytics

Student Analytics: Background

Case Study: McGraw-Hill Education Student Analytics Data Visualization Platform

Giving students tools to better understand their class performance.

Communication between students and teachers are often analog, with all of the inefficiencies that entails. Some instructors and institutions use learning platforms to share content digitally.

Connect is a learning platform for higher education. Students use Connect to access class materials, ebooks, assignments, and digital course content. They can view assessments, results and grades, but these are not in the same location or contextualized.

The Problem

The learning platform Connect, has a great deal of information. Only some of it is visible to the student, and there is no way for a student to view it holistically.

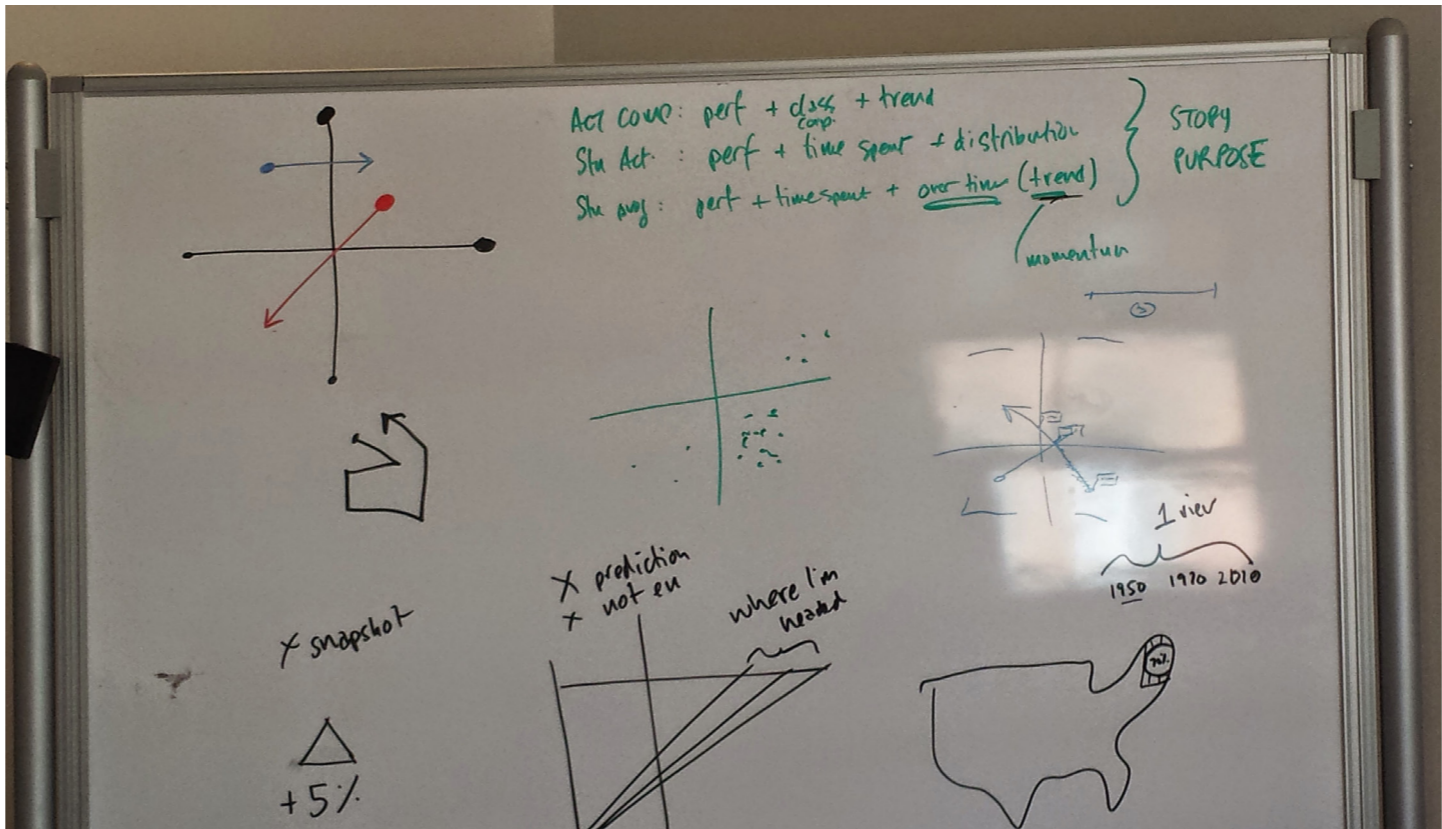
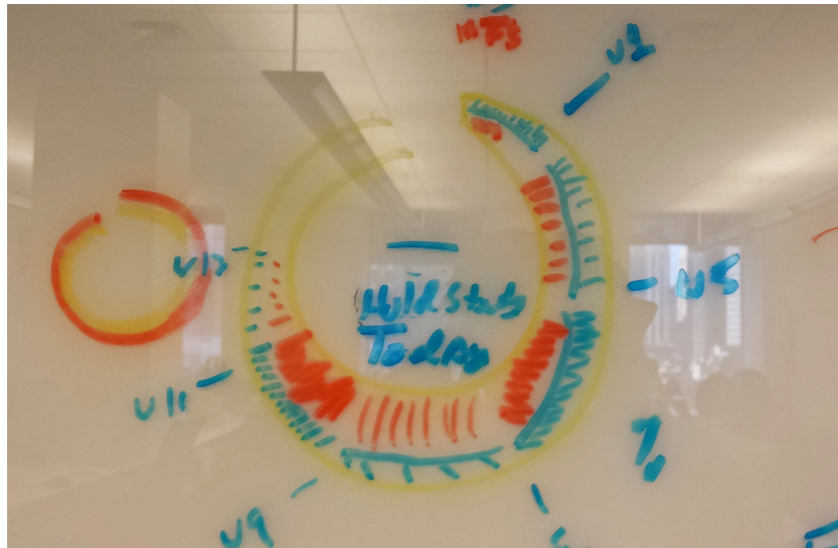
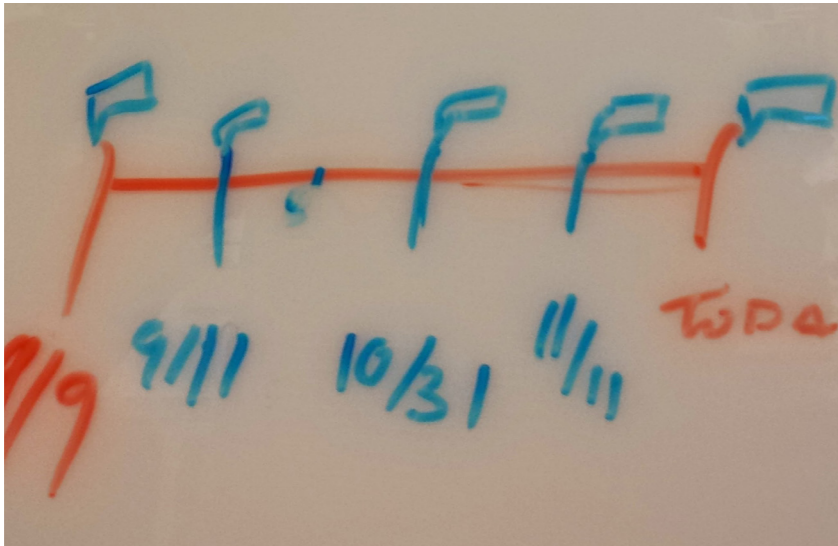
The Solution

Student Analytics is a Student Analytics is a responsive data visualization that allows students to visualize their assignment data and see insights from their scores, time spent, submission time and start time.



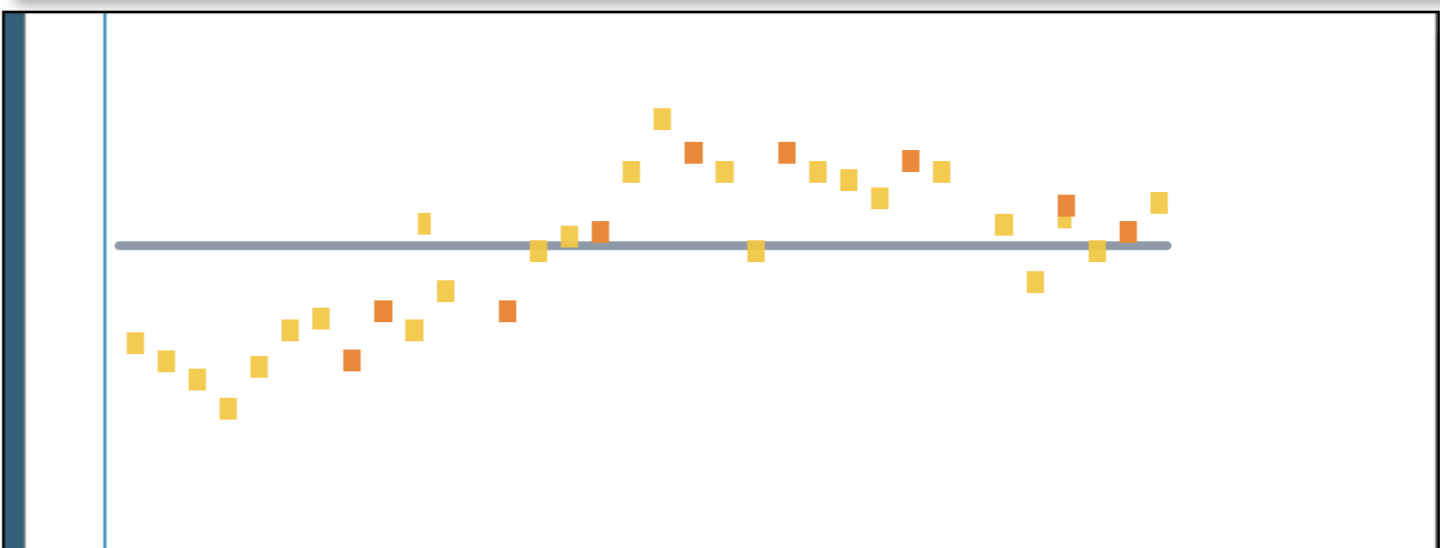
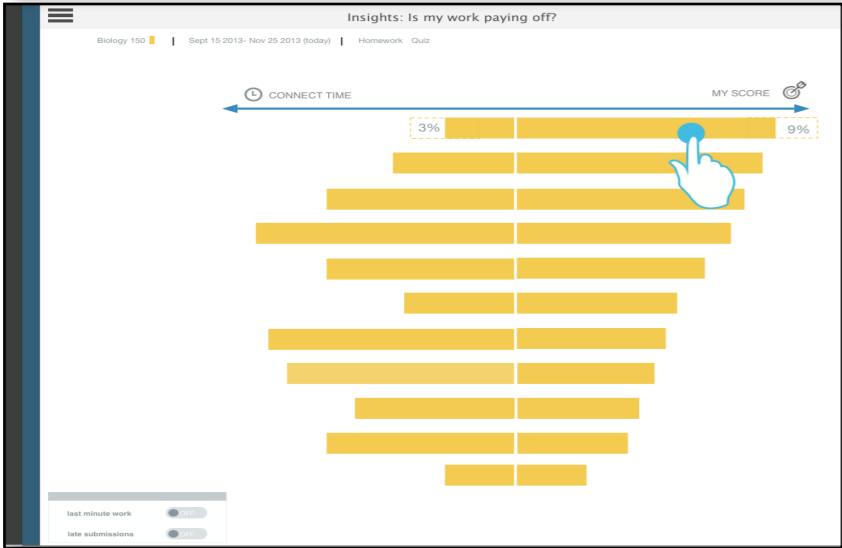
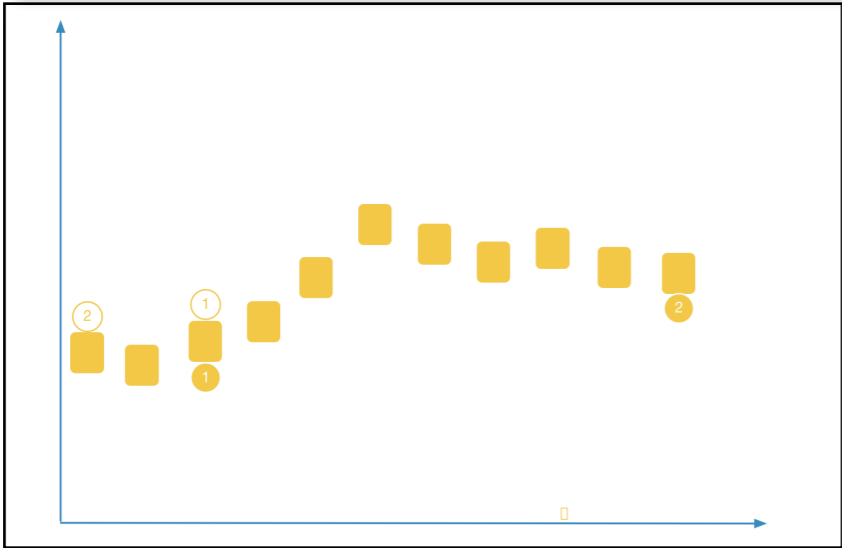
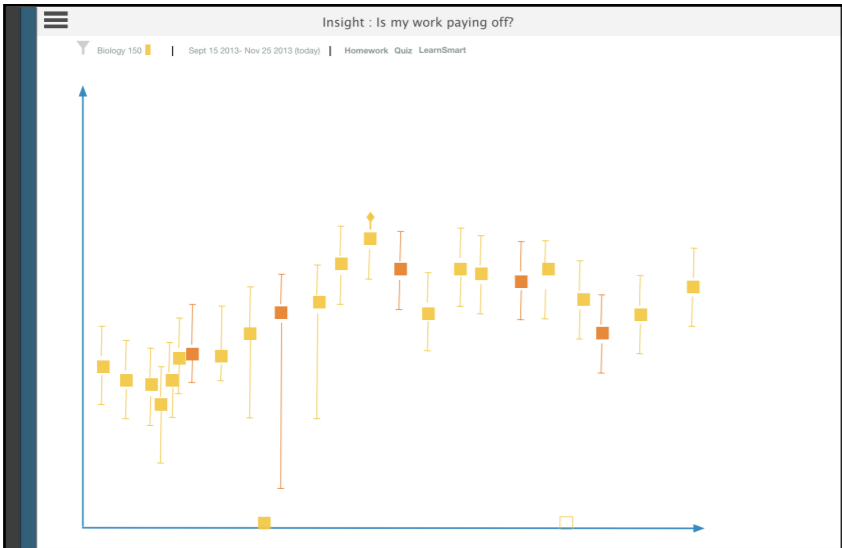
“I usually would have to track my scores separately and schedule appointments with my instructor to help me pinpoint my weak spots. ”

Student Analytics: Sketches



Ideation: I worked with stakeholders to analyze initial requirements and lead sketch sessions. These are some of the initial sketches from these sessions.

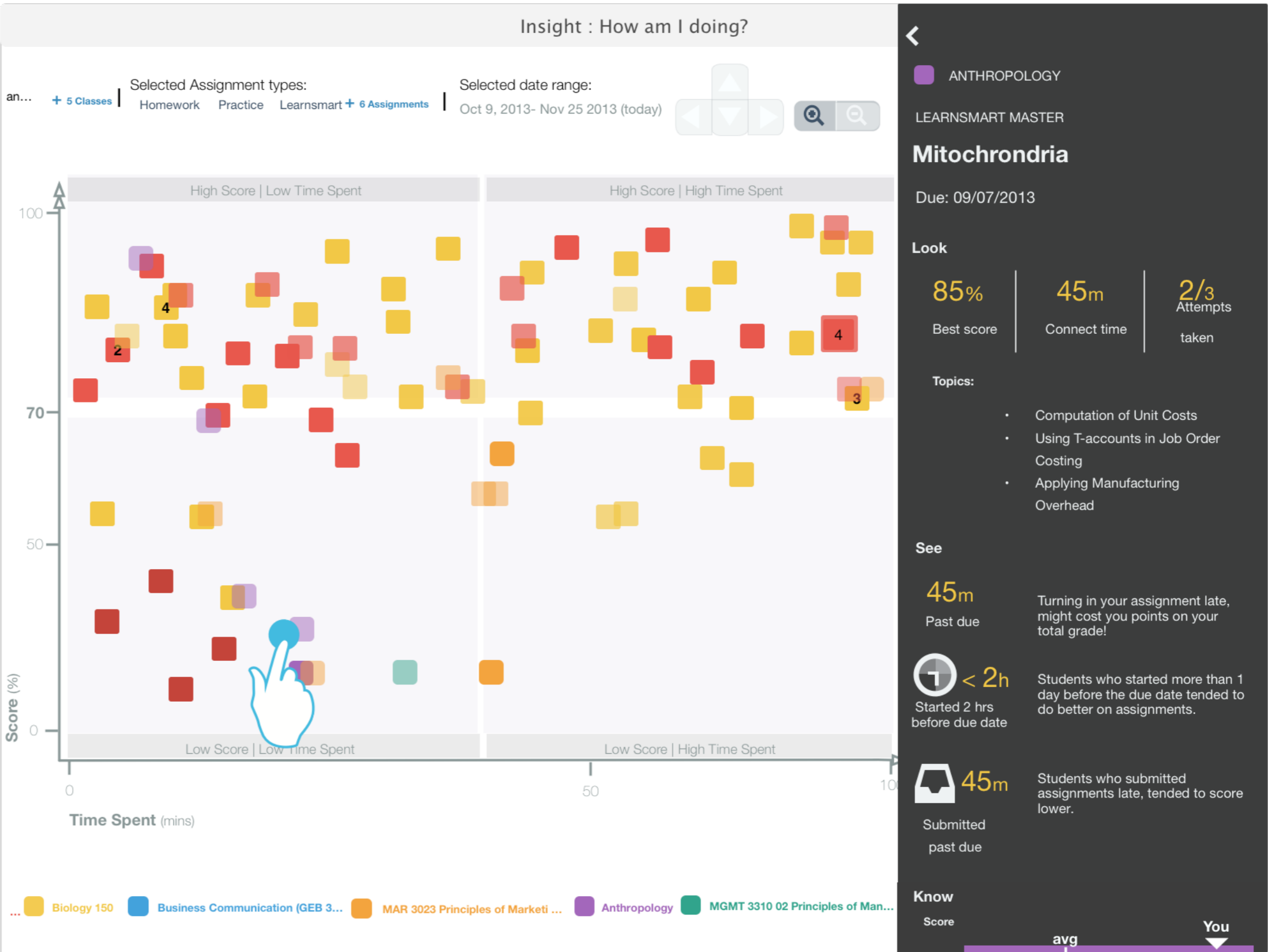
Student Analytics: Iterative Data Visualization Design



Ideation: I worked with stakeholders and data scientists to analyze the data available and types of data stories that we could tell. These are some of the initial data visualization wireframes that I shared with our team.

Student Analytics: Data Visualization with Detail Panel

Wireframe Refinement: I worked in parallel with the UI designer and front end developer to design the visualizations and major interactions for the tablet application. I designed the detail panel as a secondary level of information for students.



Student Analytics: Detail Panel Breakout

BIOLOGY

LEARNSMART

Mitochondria

Due: 09/07/2013

Look

85%

Best score

45m

Time spent

2/3

Attempts taken

Topics:

• Computation of Unit Costs

• Using T-accounts in Job Order Costing

• Applying Manufacturing Overhead

• Underapplied and Overapplied Overhead

See

45m

Past due

Turning in your assignment late, might cost you points on your total grade!

Started 2 hrs before due date

Students who started more than 1 day before the due date tended to do better on assignments.

Submitted past due

Students who submitted assignments late, tended to score lower.

Know

Score

avg

You

You scored above the class average, on this assignment.

Time

You

avg

You spent a lower amount of time in Connect than the class average, on this assignment.

Do

You have one more attempt for this assignment.

States for Look

“How Am I Doing?”

85%

Best score

45m

Time spent

2/3

Attempts taken

Timed Assignments

45/ 75m

Time spent

“How Am I Progressing?”

85%

Best score

75%

Class Avg score

2/3

Attempts taken

Infinite Attempts

2/∞

Attempts taken

Messaging for Do

Unlimited Attempts

You have unlimited attempts for this assignment. Give it another try.

More Attempts

You have one more attempt for this assignment.

Learnsmart Recharge

Recharge your knowledge of Mitochondria in Learnsmart.

You have two more attempts for this assignment.

Use a study attempt to review Mitochondria to prep for your next exam.

Tegrity Video

Re-watch your instructor’s lecture on this subject.

Smart Book Review

Review Chapter 2 on Mitochondria in Smartbook.

Additional Messaging for See

When Started

Started 2 hrs before due date

Starting more than one day before the due date could result in better grades. Give yourself more time!

Due Date

45m

Past due

Turning this assignment in late cost you points! Stick to deadlines to help bump up your scores.

Positive Statements

Started 2 days before due date

Starting assignments early tends to result in better grades. Keep it up!

4h

Early

Submitting early is often a sign of preparation. Well done!

Multiple Late Starts\Multiple Late Submissions

How am I progressing - Only

Late Submission

3rd

late submission

Looks like a pattern is emerging. Better time management can help you meet deadlines.

Late Start

4th

Same day Start

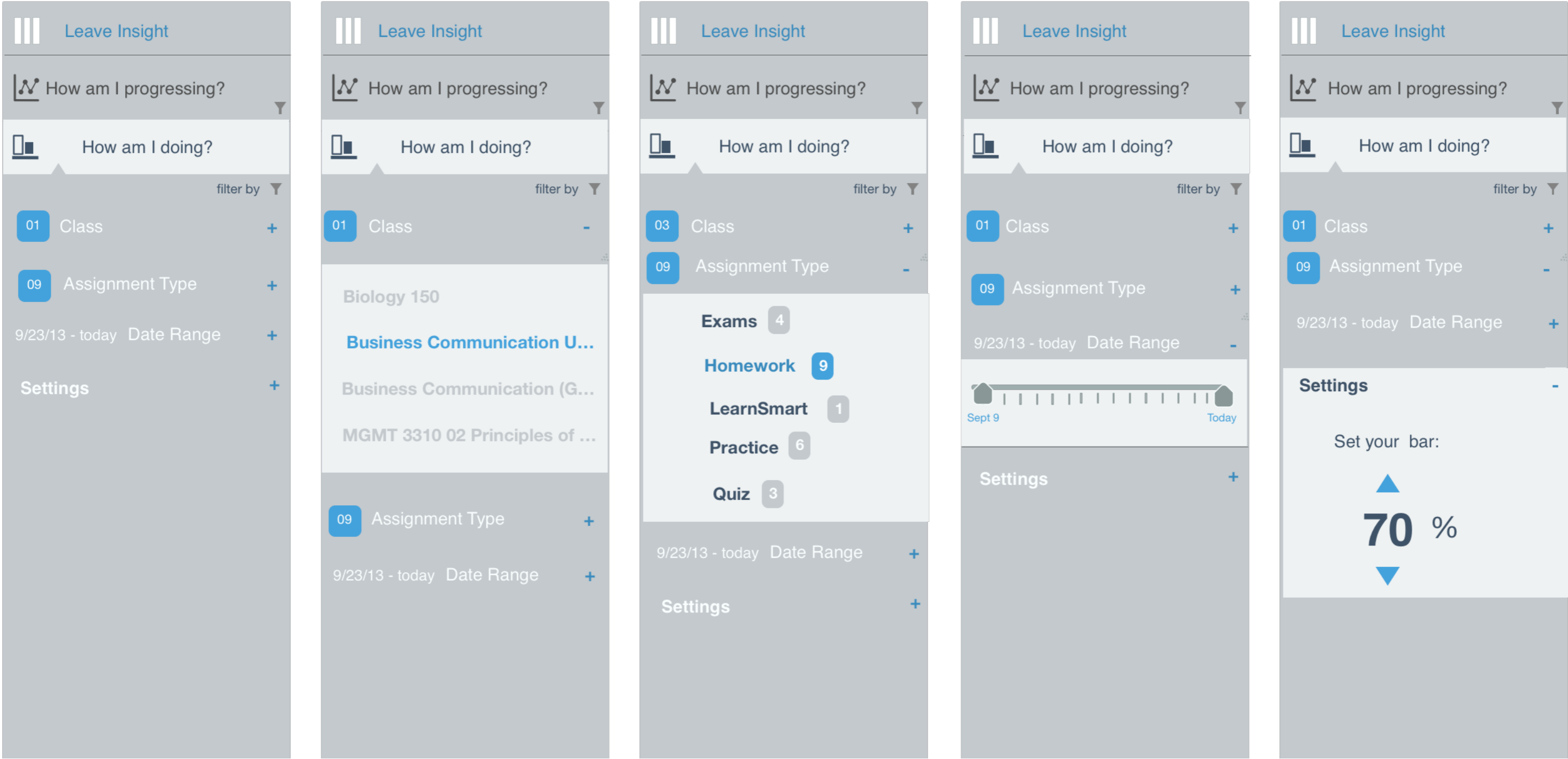
Late starts can lead to lower scores. Start assignments early and give yourself more time to perform better.

Detail Panel: I worked with data scientists and a copywriter to create microcopy and specific infographs using the learning platform’s data. We wanted to create a cohesive story for the users, and give them options on how they can become stronger students.

LS

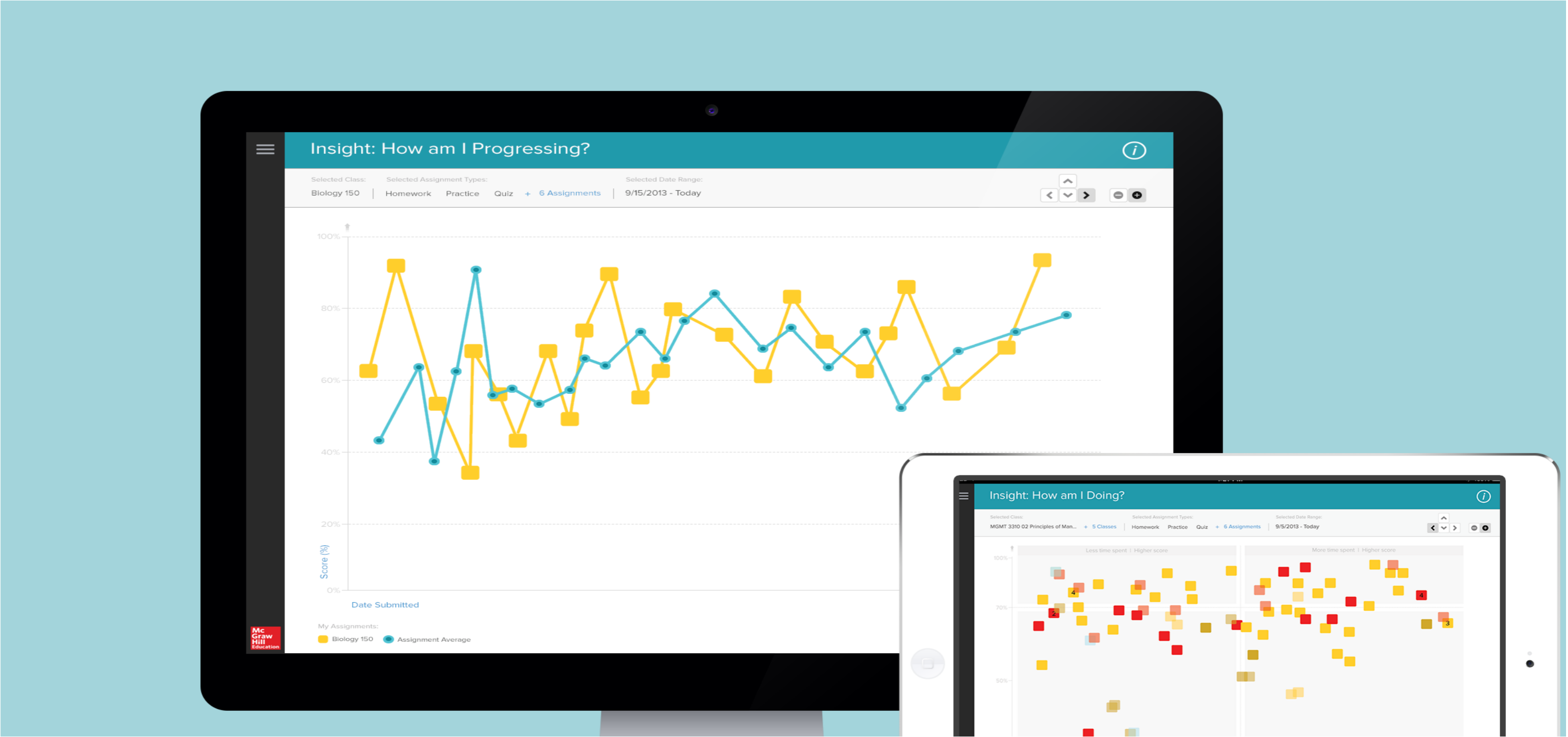
7

Student Analytics: Visualization Navigation and Filter

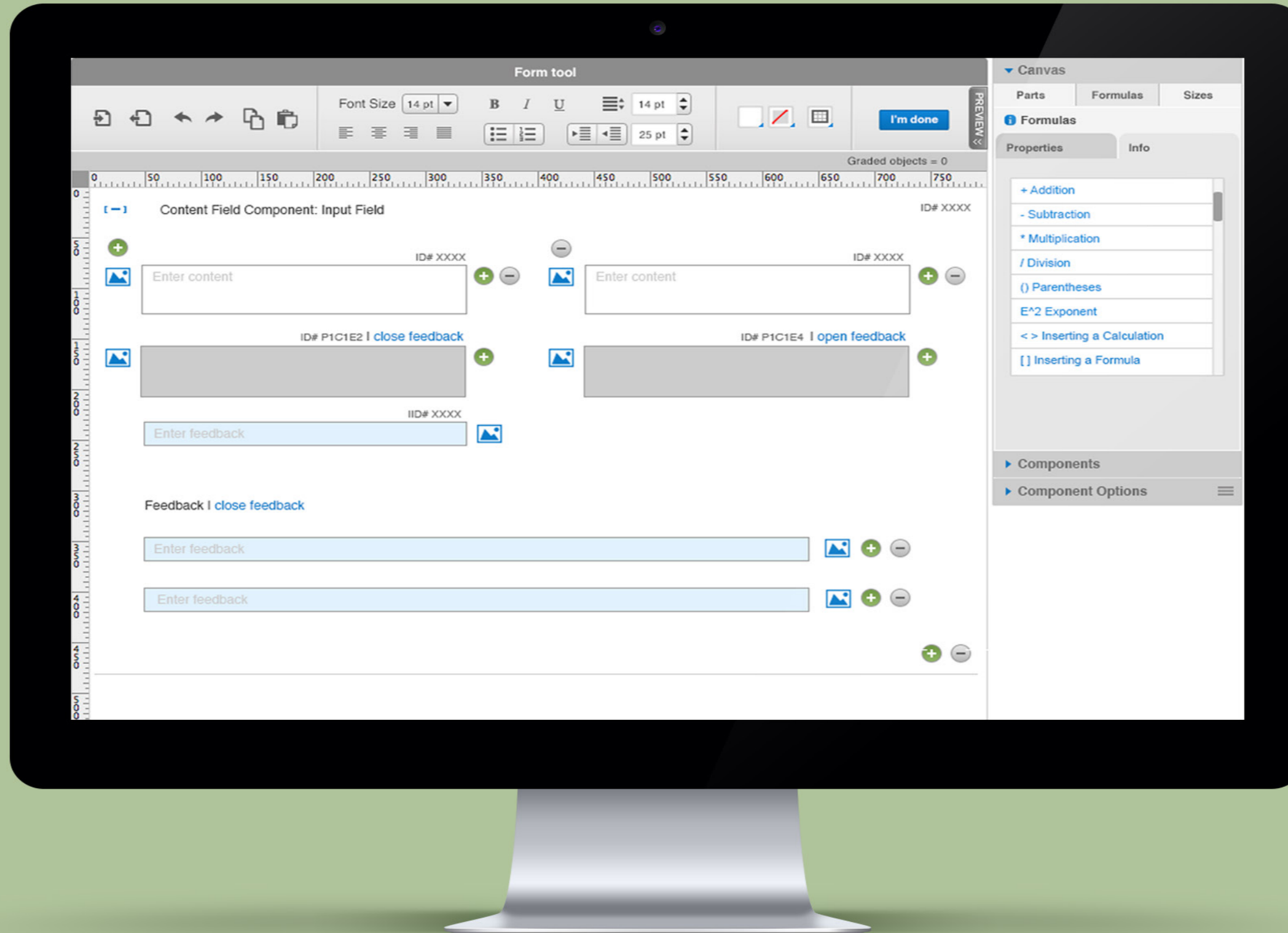


Navigation and Filter: I designed the navigation and filter system so that students may customize their view and separate data points. Students are able to drill down on a particular class, assignment type, date range or other facet.

Student Analytics: Results



I collaborated with the UI Designer to finalize our UI for the desktop experience and tablet app. Student Analytics was rolled out to the pilot group with success. We're now looking to integrate this feature set into the next generation of our learning platform.



Content Authoring Tool

Content Authoring Tool: Background

Case Study: McGraw-Hill Education Content Authoring Tool

Providing Content Authors with a robust tool for creating digital courseware.

Content Authors create assignments and other courseware for use in McGraw-Hill's digital content offerings. They research, design and produce academic content that satisfies the educational requirements. They use Connect Content Tools to make these assignments available to instructors and students.

Some requirements are not well served by the existing software: mathematical formulas, unscored questions, Likert scales, spreadsheet functionality, and branching logic, where answers to one question determine subsequent questions.

The Problem

The tools get in the way of providing quality educational content.

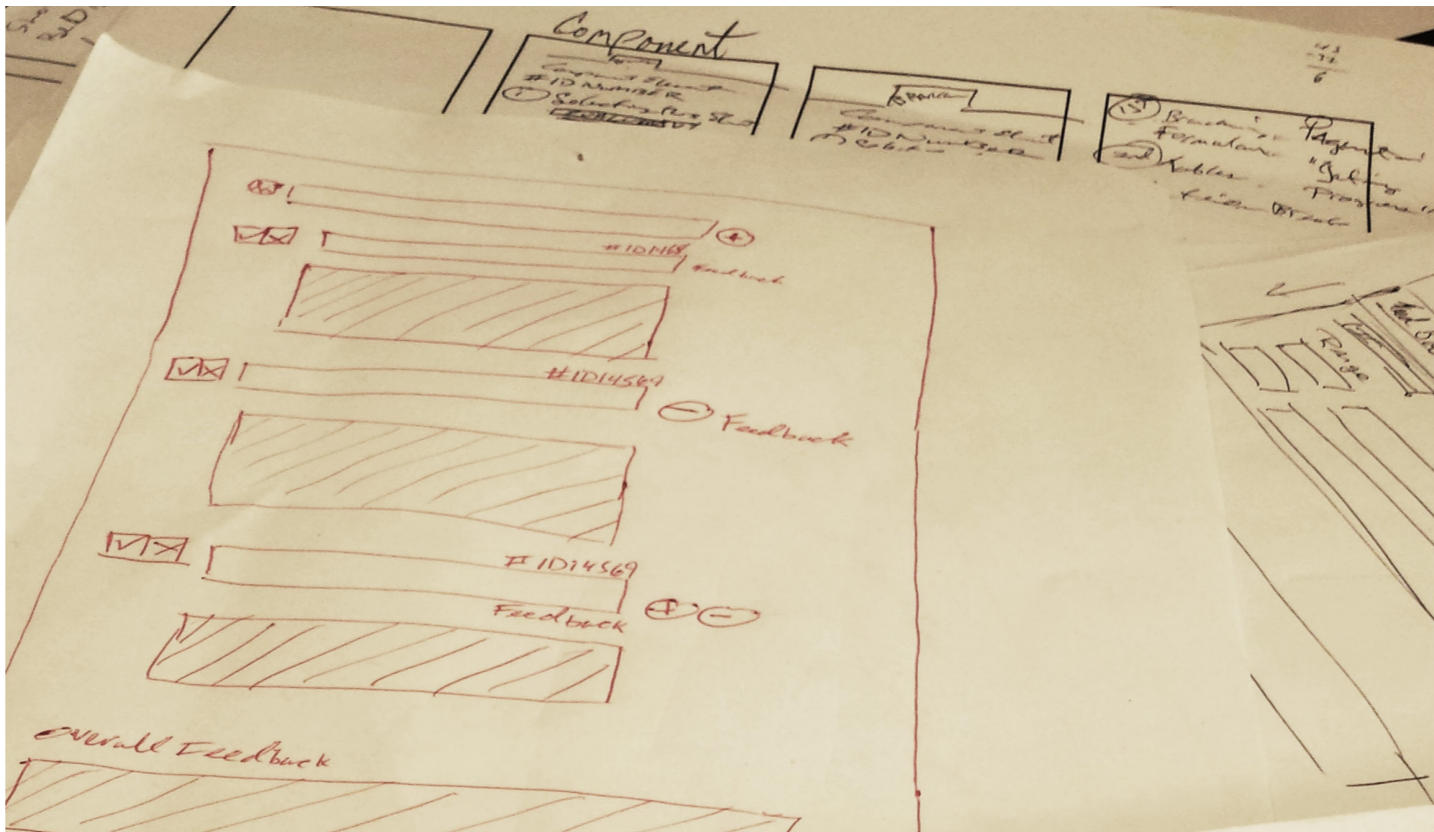
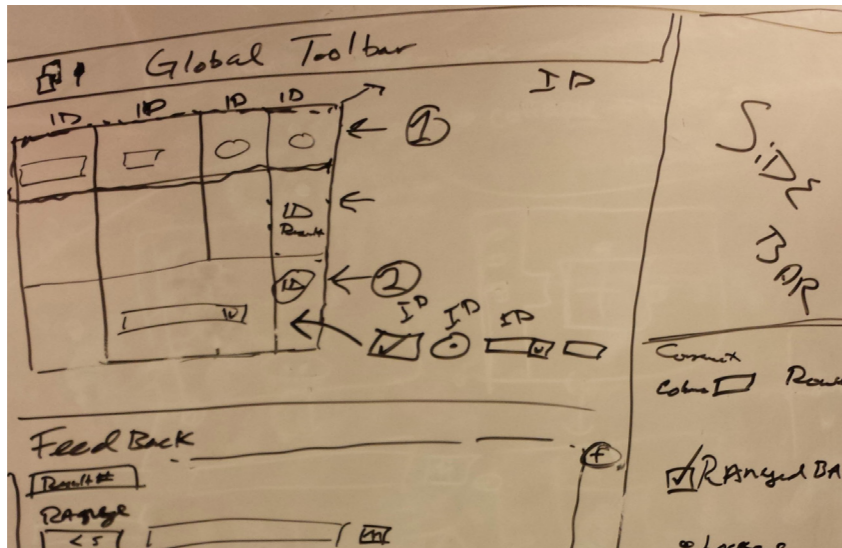
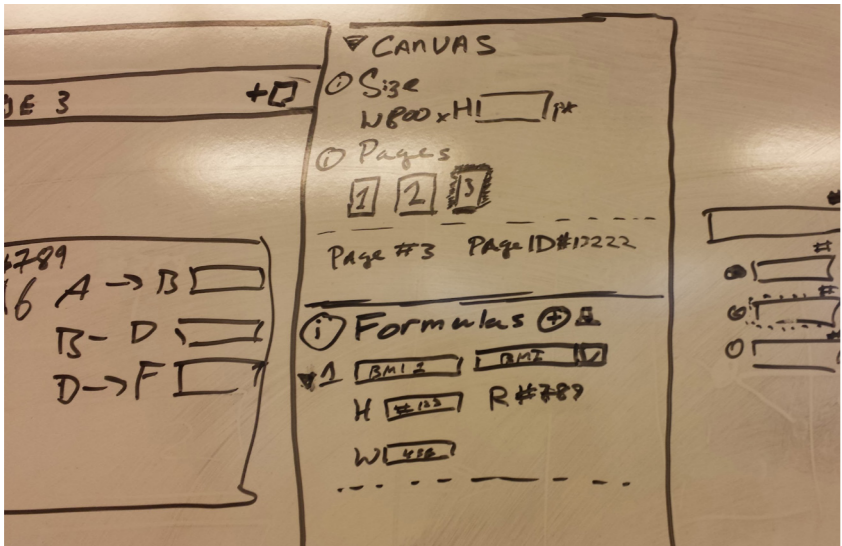
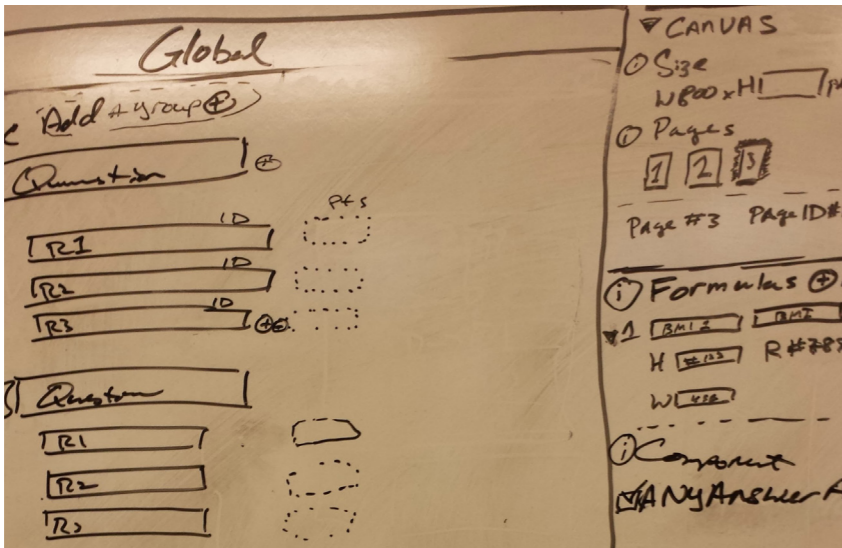
The Solution

Content Authoring Tool: A robust, function-filled tool that gives Content Authors the ability to create agile, advanced educational content.



“When I create assignments, I have to use multiple tools to create one assignment that meets my requirements and grading rubric.”

Content Authoring Tool: Workflow Sketches



Ideation: To kick off the project, we met daily to have sketch sessions to determine the overall framework of the application. I worked with stakeholders, business partners and content authors (end users) to analyze initial requirements and lead sketch sessions. These are some of the initial sketches from these sessions.

Content Authoring Tool: Component Wireframe

Wireframe Design: I worked in parallel with the Business Analyst and UI designer on the wireframes. In the process we developed a set of design patterns and the UI style guide for this application.

undo

redo

copy

paste

Font Size: 12

B

i

u

Table Formatting

Special Characters

I'm done

Preview

Health ConditionsGraded objects = 0

RULER

ID# P1C1E1

+

Please enter your weight. (lbs)

+ -

-

ID# P1C1E2collapse Input Field Feedback

Student Entry

ID# P1C1F2Enter Feedback

ID# P1C1E3

+

Please enter your height. (inches)

+ -

-

ID# P1C1E4expand Input Field Feedback

Student Entry

Feedback

Your BMI is: <F1>

Enter General Solution

+ -

RULER

ID# P1C2E1

[F1]

+ -

-

Canvas

Parts

Formulas

Size

Formulas

Properties

Info

BMI FormulaID# F1

PARQ FormulaID# F2

AverageID# F3

Average Formula Pt 2ID# F4

Sum FormulaID# F5

Components

Component Options

properties

branching

media

Input and Labels ComponentID# P1C2

Label - only

Content Authoring Tool: Toolbar Wireframe with Annotations

Wireframe Annotations: I coordinated with the business analyst and engineers to develop an annotation style that complimented their workflow. This improved our coordination with offshore engineers.

The screenshot displays the Canvas LMS Authoring Tool interface. At the top, there are several tool palettes:

- Import/Export/Undo/Redo/Clipboard:** Includes icons for import, export, undo, redo, copy, and paste.
- Form tool:** Contains font settings (Font Size: 12, Bold, Italic, Underline), alignment options, bullet points, and inline spacing controls.
- Table Formatting:** Features a grid icon and options for table cell color, table line color, and table line formatting.
- Action Buttons:** "I'm done" and "Preview".

Below the toolbars is a ruler and a status bar indicating "Page 1" and "Graded objects = 0".

On the right side, there are three main panels:

- Canvas:** Shows the current page (Page 1) and its ID (Page ID# 123456).
- Components:** Displays various UI components like Input Box, Radio Button, Drop down, Table, Check box, Scales, and Line.
- Component Options:** Allows configuring properties, branching, and media for selected components.

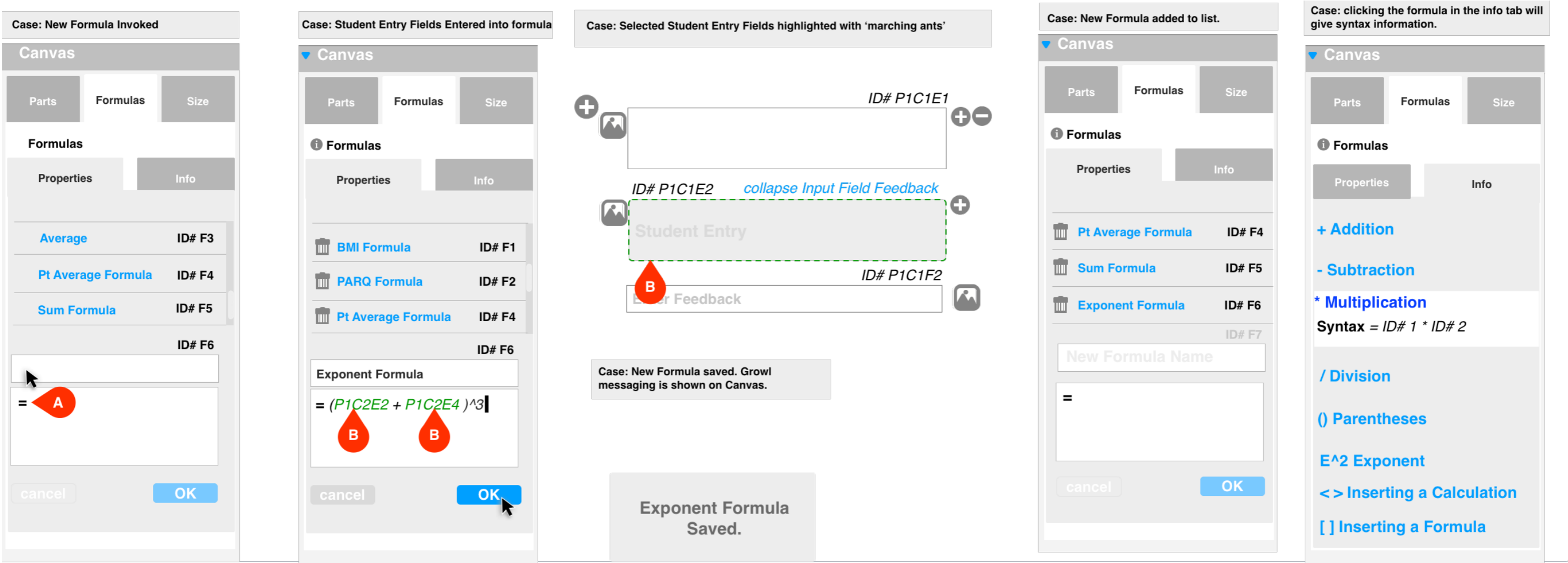
At the bottom left, a **Specifications** panel provides details about the scenario:

Specifications B-28852 B-28681

Scenario: Author has opened the Authoring Tool.

| Label | Description |
|-------------------------|-----------------------------------------------------------------------------------------------------|
| A Import | OnClick, a local compatible file can be imported into the tool. |
| B Export | OnClick, A compatible file format of the entire question is downloaded locally. |
| C Undo | Undo, allows the user to undo their last action. Will undo up to the initial creation of the file. |
| D Redo | Redo, allows the user to step forward in their actions. |
| F Paste | The user may paste clipboard text into any field. |
| G Font Size | The user may adjust font size between 10pt - 64pt.. |
| H Text Alignment | Users may align text in fields, left aligned, centered, right aligned and justified. |
| I Enumeration | OnToggle, text in a field may be enumerated . |
| J Bullets | OnToggle, text in a field may be bulleted . |
| L Inline Spacing | Inline spacing is separate from font size and edited independently. |
| M Table cell Color | The color of cells in a table may be set, by selecting the cells and then selecting the cell color. |
| N Table Line Color | The color of lines in a table may be set, by selecting the cells and then selecting the cell color. |
| O Table Line Formatting | Table lines may be formatted by selecting the table cells and then selecting the formatting. |

Content Authoring Tool: Formula Panel Breakdown



A Equal Sign (=)
This is the default sign in the formula pane and it cannot be deleted.

B Color Scheme for ID Referencing
Single color (Green) representation for each ID number and its matching student entry field.
(Refer to Excel functionality)

Formula Panel Breakdown: This breakdown shows the flow for entering, editing and deleting formulas from the Content Tool.

Content Authoring Tool: Component Wireframe with Annotations

undo redo copy paste

Font Size: 12

GLOBAL Tool Bar

Save I'm done Preview

Page 1

Graded objects = 0

Radio Button Component

Enter text

Enter text

Enter Feedback

Enter text

Enter text

Enter text

Feedback

General Feedback:

Overall Solution:

ID# 13453

ID# 13455 | expand Feedback

ID# 13359

ID# 13456 | expand Feedback

ID# 13457 | expand Feedback

ID# 13458 | expand Feedback

ID# 13463 | collapse General Feedback

ID# 13464 | collapse Overall Solution

Canvas

Components

Component Options

Input Field

Multiple Choice

Check All

Tables

Tax Form

Scales

Line

properties

branching

media

Multiple Choice Component

Answer Type

Prerequisite

Specifications

Scenario: Author has added a Multiple Choice Component to the canvas.

Scenario: Author has invoked the Context Mini-Menu while the Multiple Choice Component is selected and "Radio Button" is the selected type.

Scenario: Author has invoked the Context Mini-Menu while the Multiple Choice Component is selected and "Drop Down" is the selected type.

Options are disabled.

Component information

Multiple Choice Component Properties

Answer Option Orientation

Multiple Choice Type Selectors

Graded Object

Binary Answer Selection

Accept Any Answer

Points Based Response

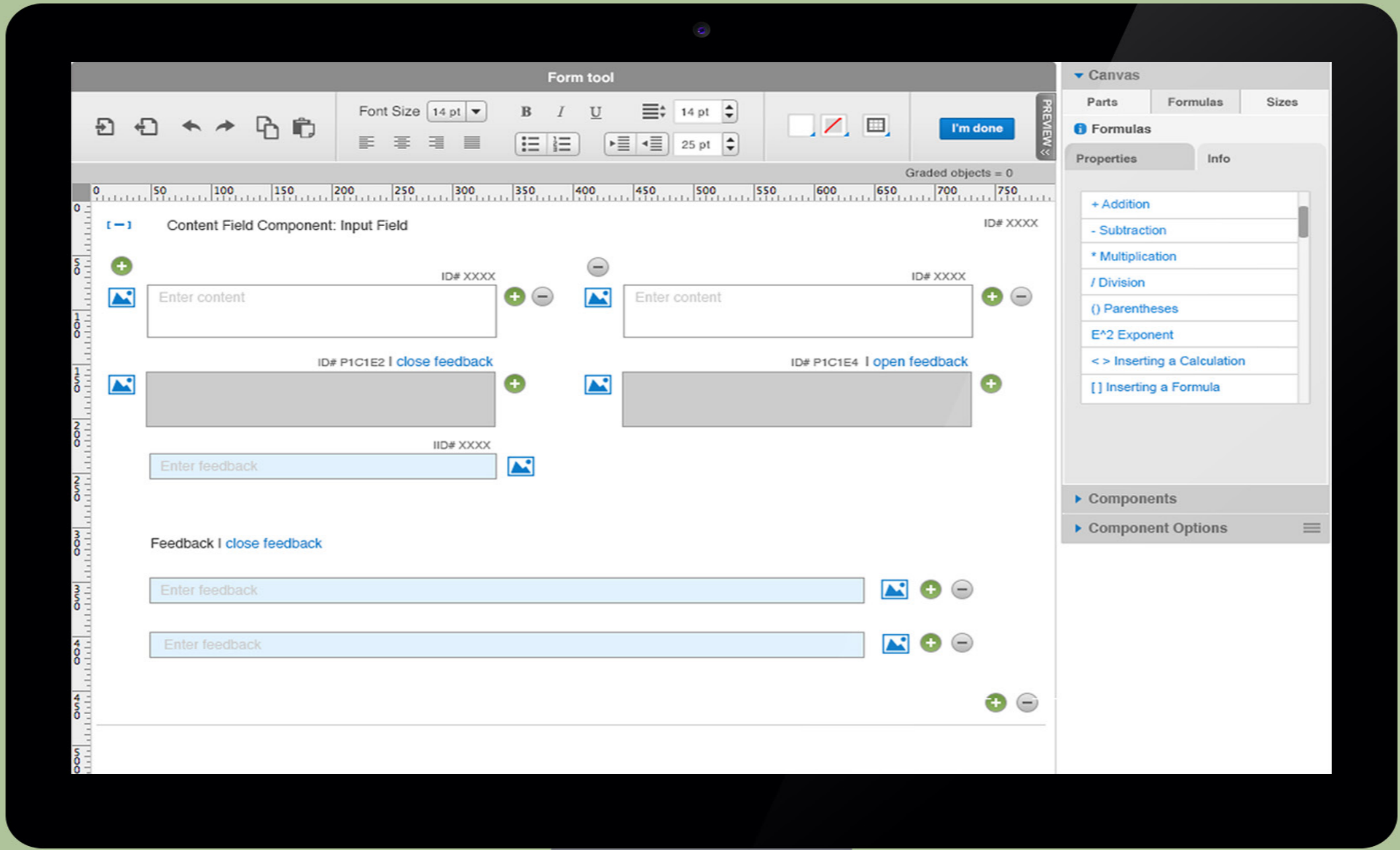
Prerequisite Setting

Component Information

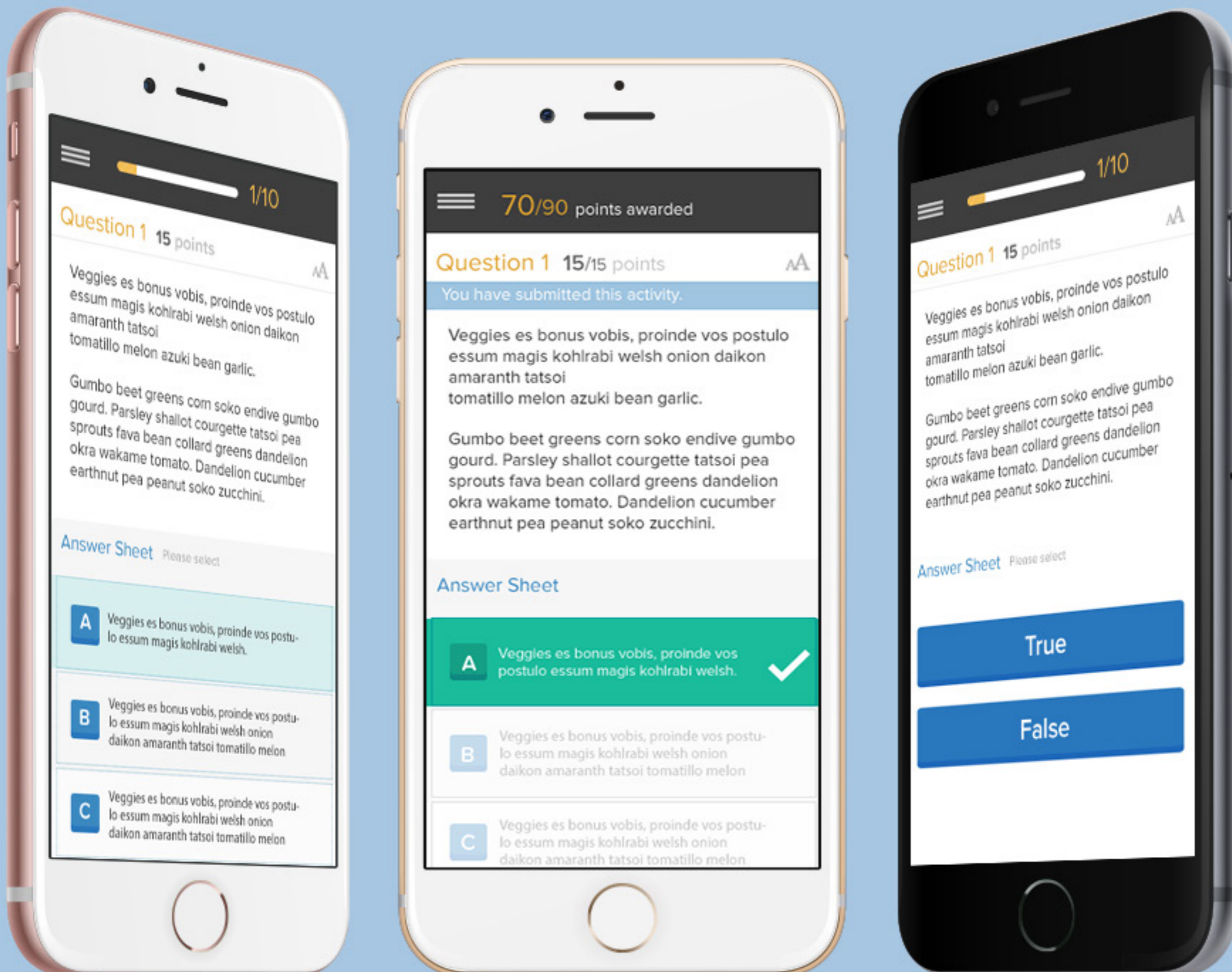
Solution Selectors

Component Wireframe: Each of the major content types (multiple choice, Likert scales, etc.) are broken into components. A component can be added to the staging area and populated with content before it is finally submitted. When selected, the component can be customized, depending on the content type.

Content Authoring Tool: Results



This tool has been successfully deployed to Content Authors.



Student Mobile Experience

Student Mobile Experience: Background

Case Study: McGraw-Hill Education Learning Platform Student Mobile Experience

Bringing the Learning Platform to Mobile and Tablet Devices.

Communication between students and teachers are often analog, with all of the inefficiencies that entails. Some instructors and institutions use learning platforms to share content digitally.

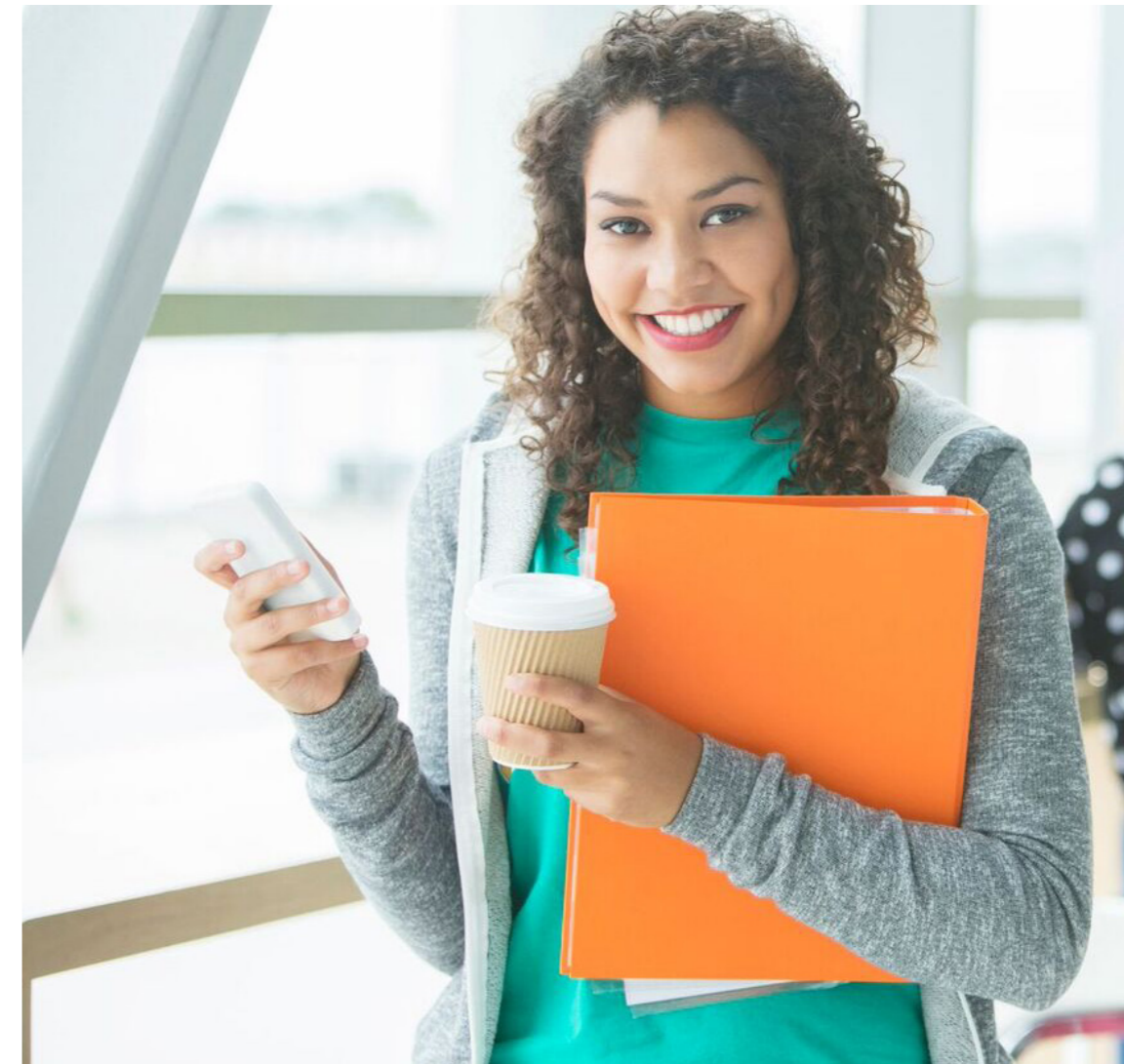
Connect is a learning platform for higher education. For many courses, Connect is used to by students to get their assignments, submit their work and check on their results.

The Problem

Students can only access Connect via desktop. This doesn't let them check on their assignments or complete work when they are on the go.

The Solution

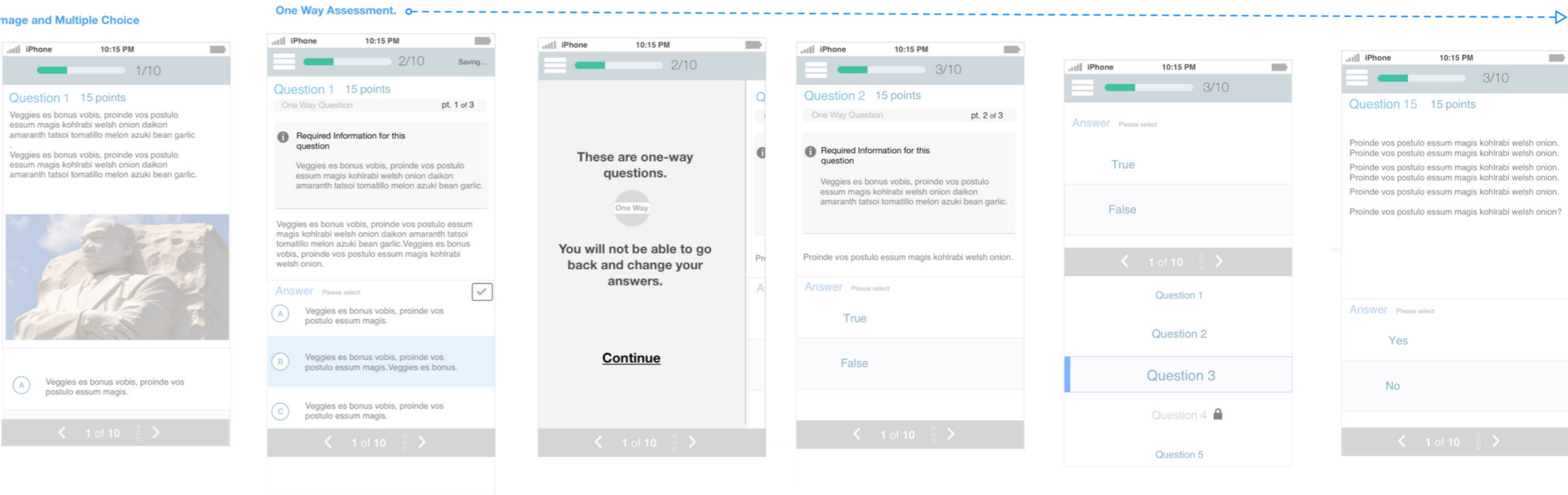
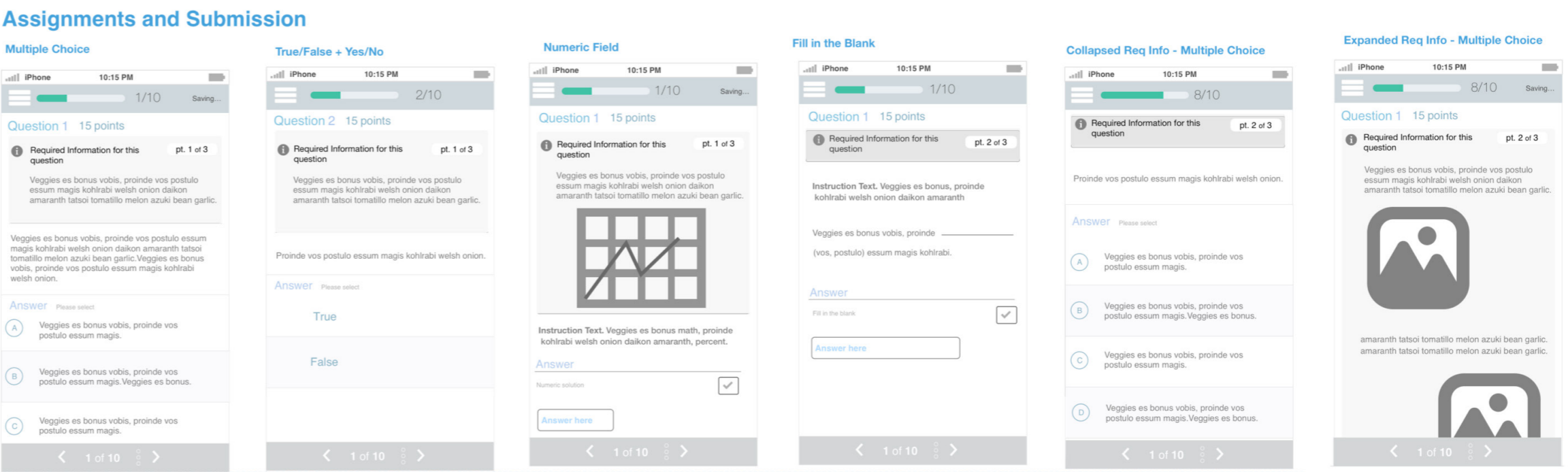
Student Mobile Assignments is a reimagining of Connect's desktop experience for mobile and tablet users, focusing on assignments.



“I really need my homework assignments to keep up with me when I’m on the go.”

Student Mobile Experience: Assignment Type Wireframes

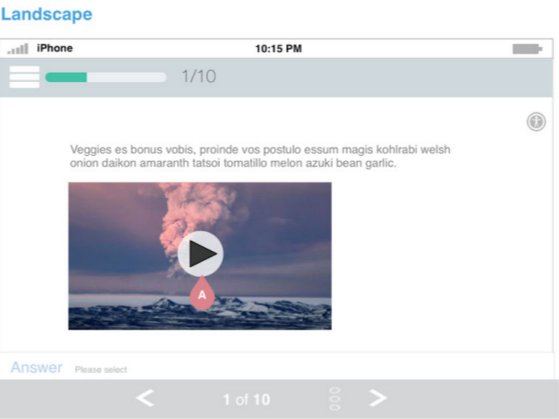
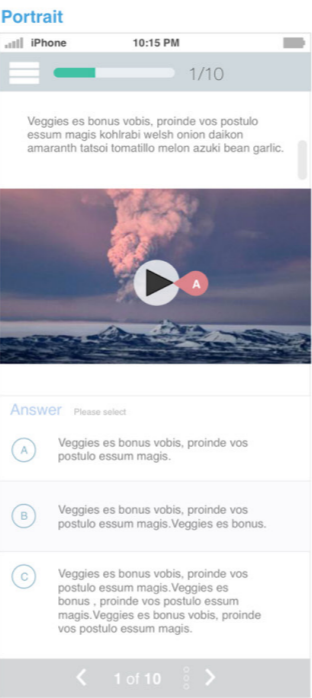
Assignment Type: I researched all of our student assignment types with the Business Analyst. Over the course of a few sketch sessions, we discussed the affordances of the mobile experience.



Student Mobile Experience: Media Wireframes

Media: For our media display, I worked with the lead engineer to uncover technical constraints for audio and video playback. I then used best practices for displaying media on a mobile device.

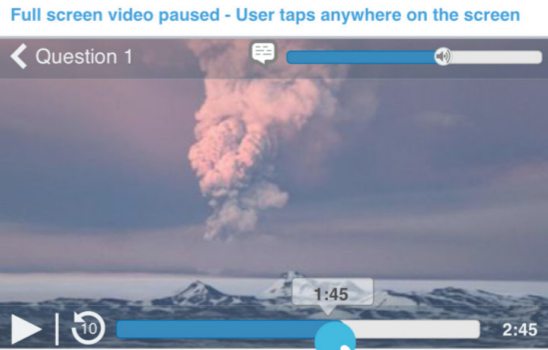
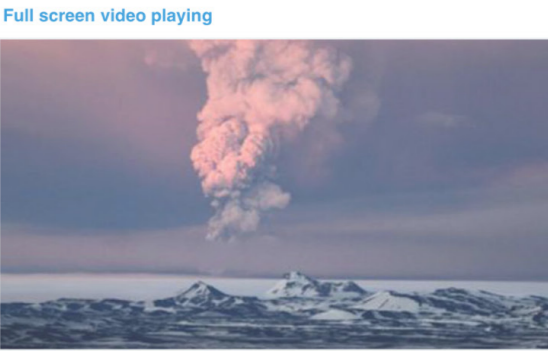
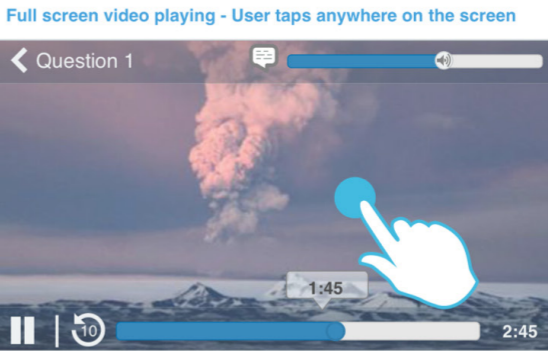
Video Playback



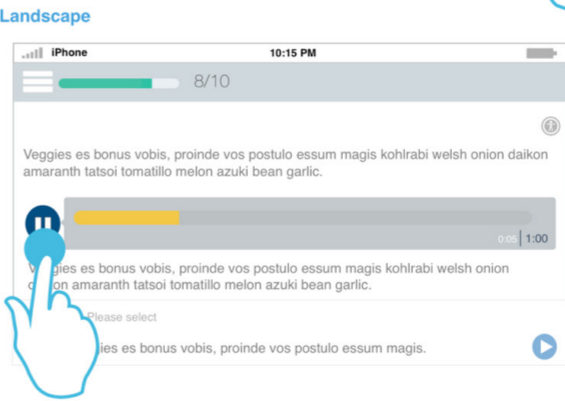
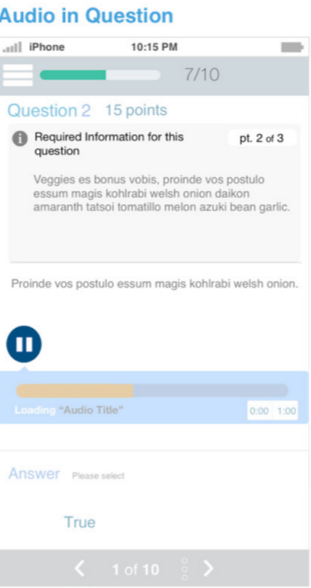
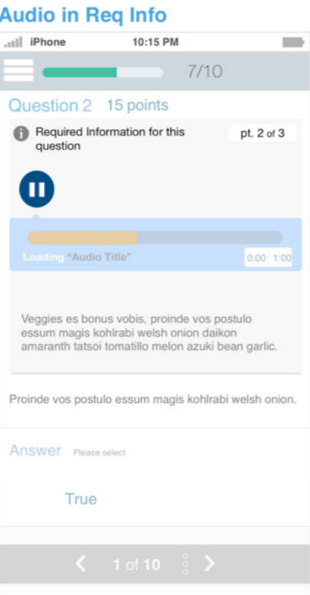
Annotations

A onTap, expands and rotates to fullscreen, auto plays video

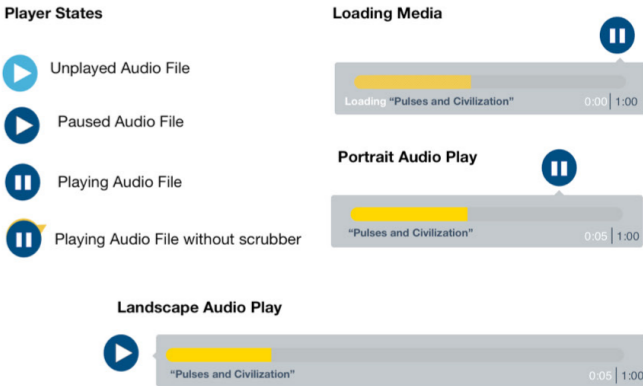
Portrait video size: 320x 240



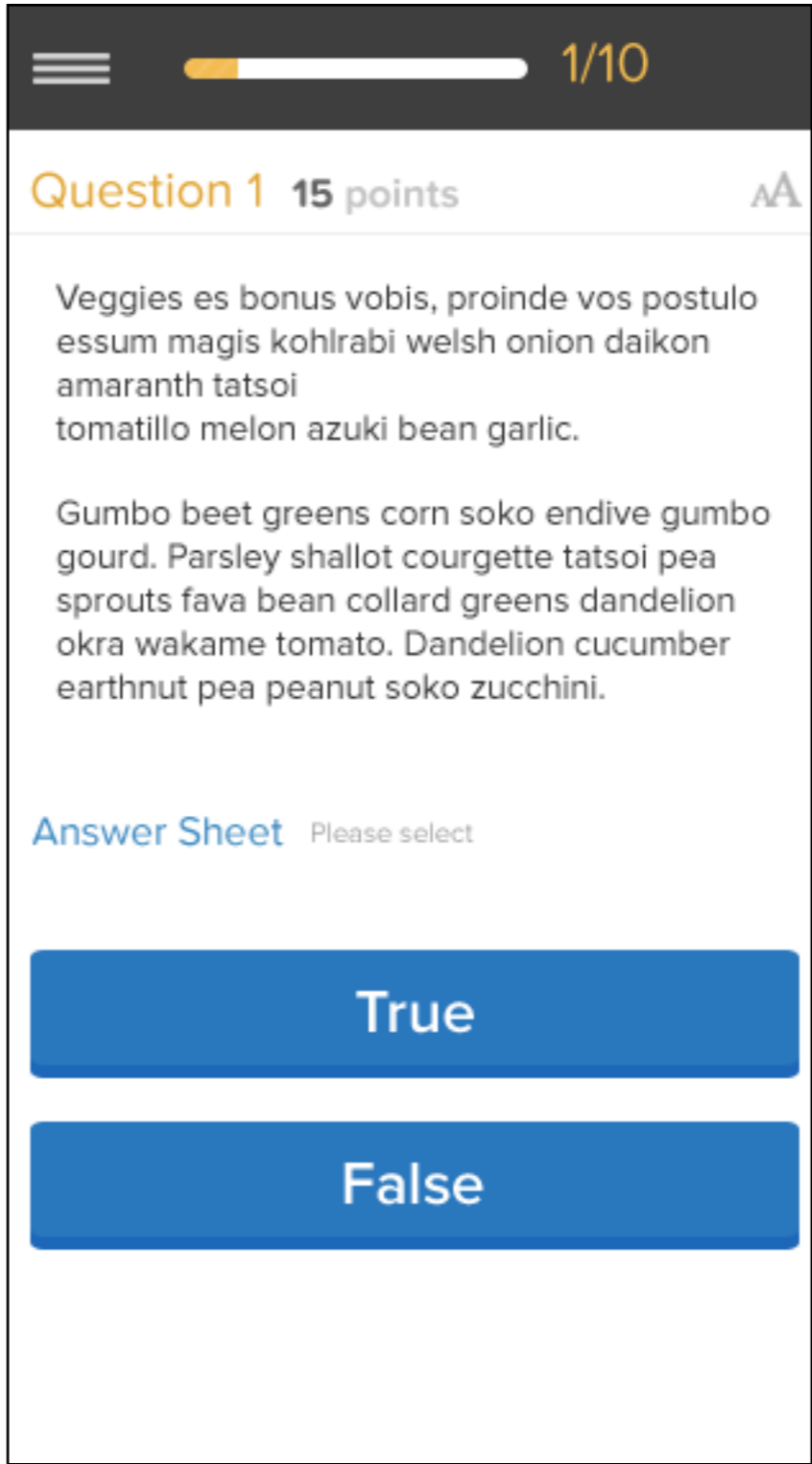
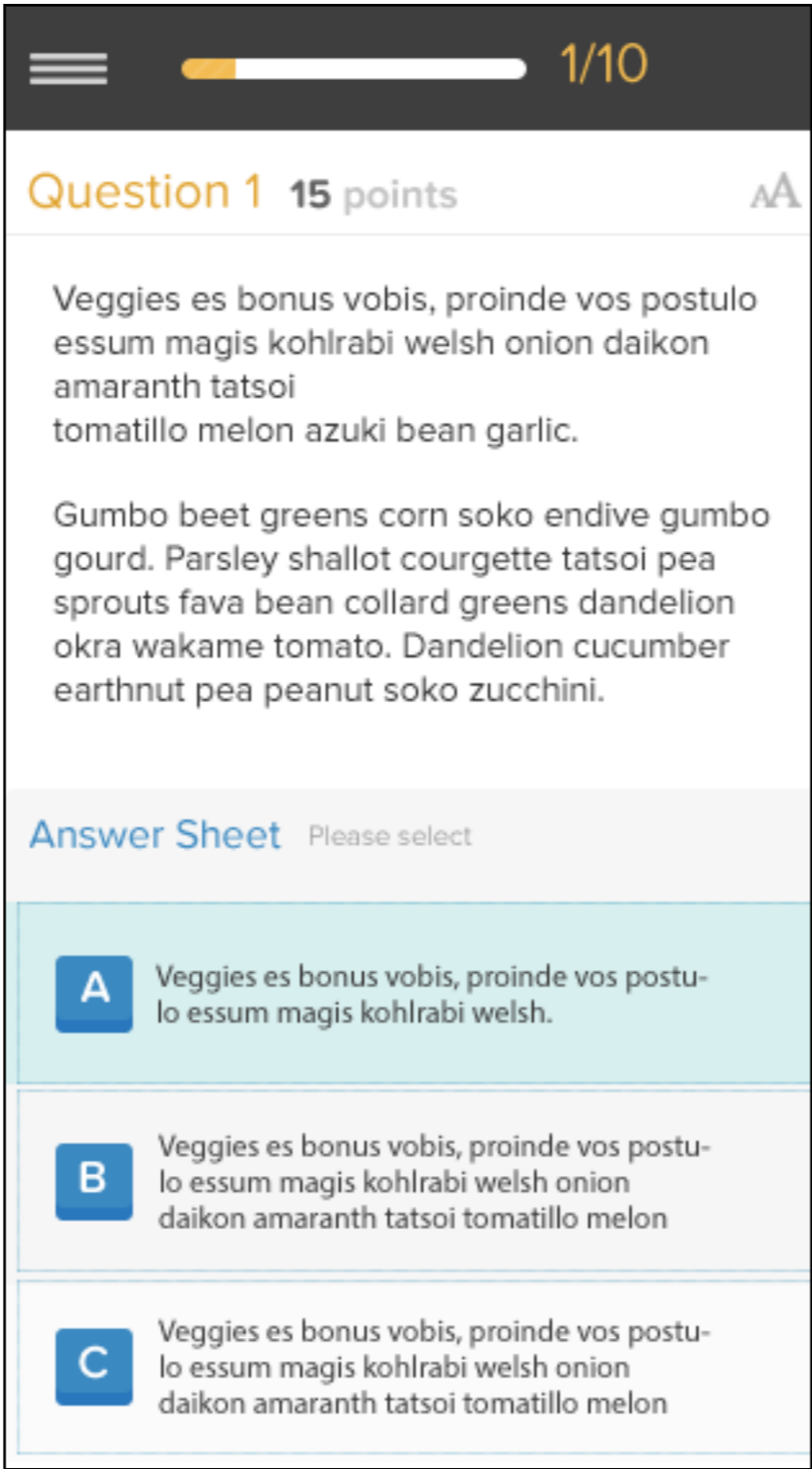
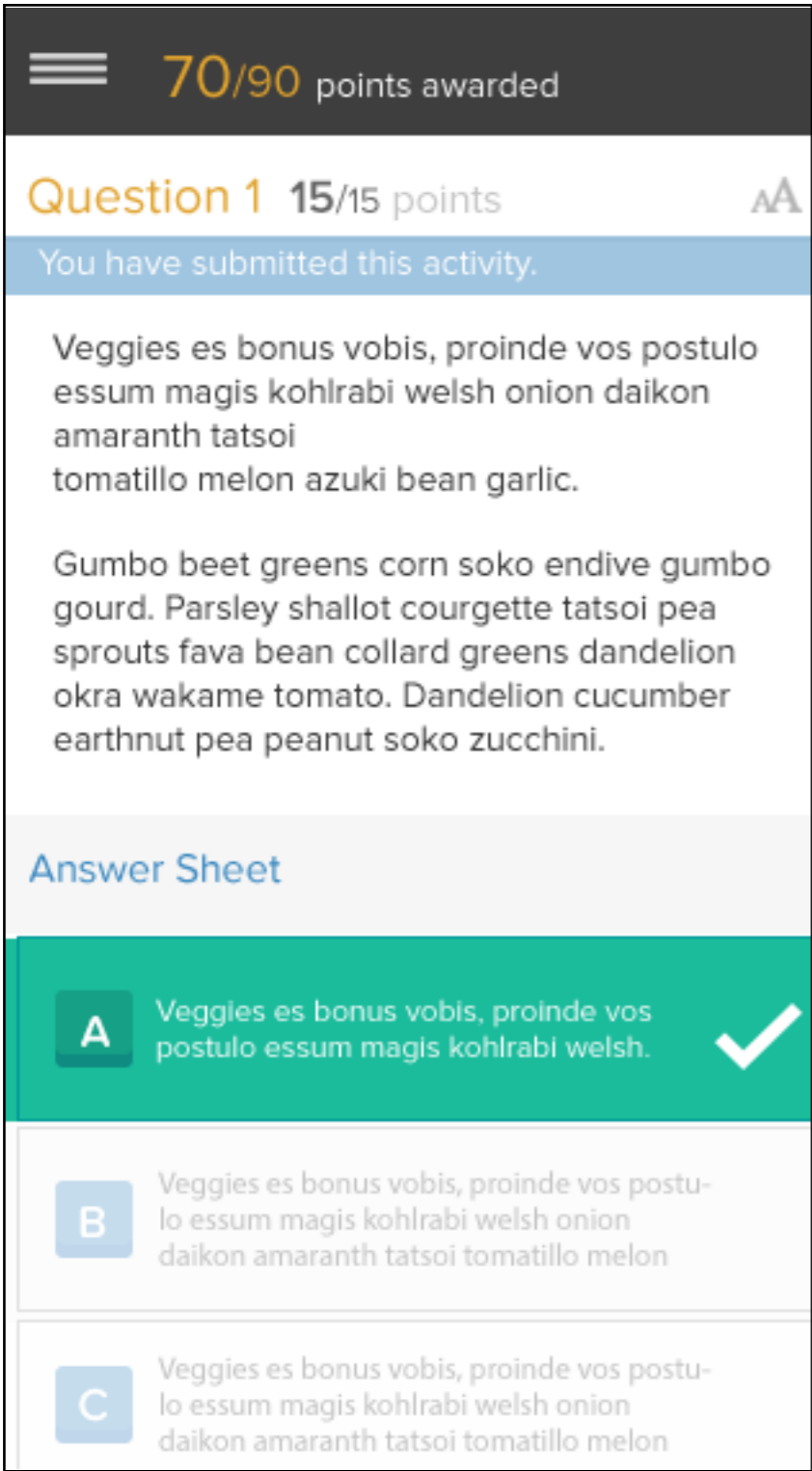
Audio Playback



States for Audio Player

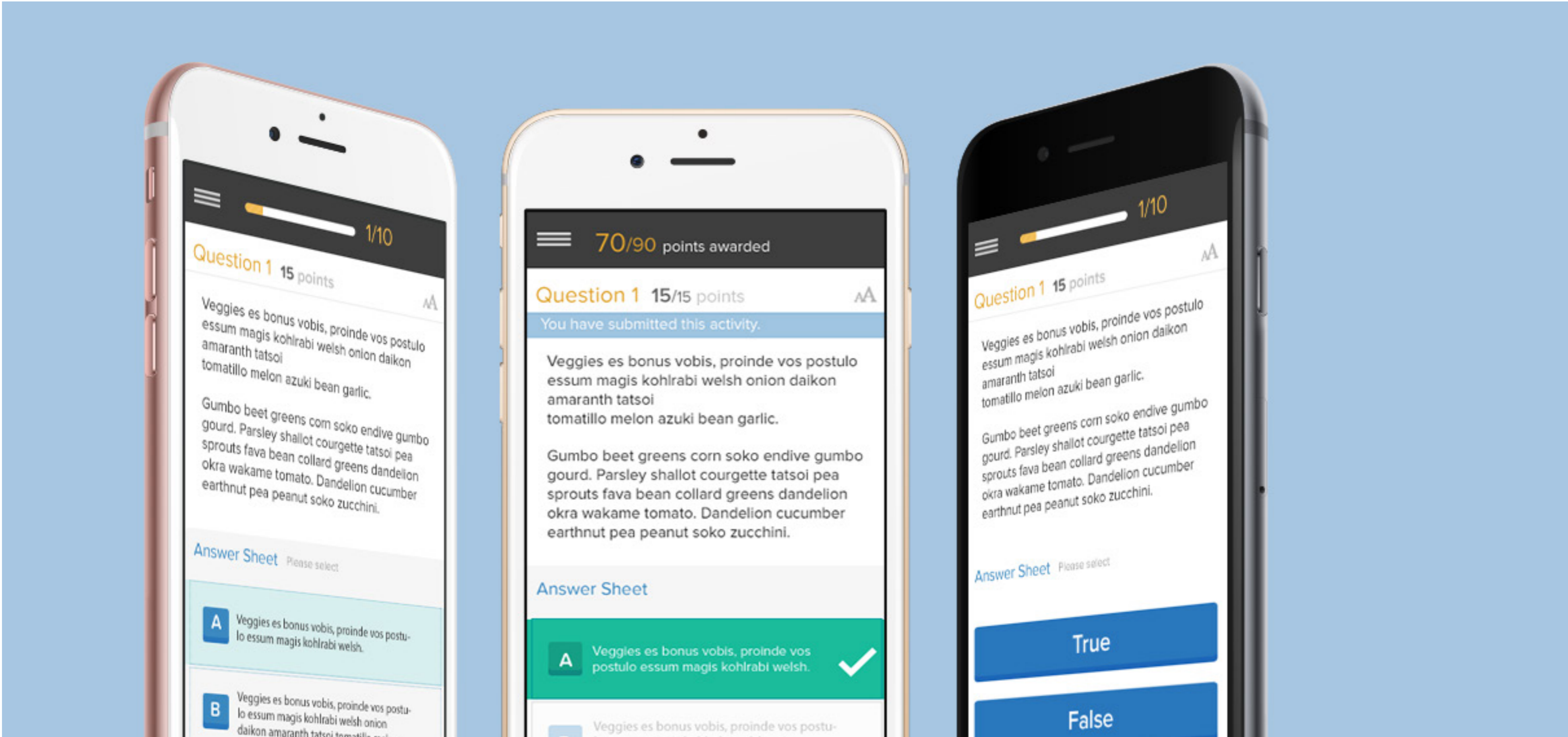


Student Mobile Experience: UI Design



User Interface Design: I coordinated with the User Experience Designer for the student tablet experience to design a style guide for the tablet and mobile experience. Using the guide, I created the UI for the mobile experience.

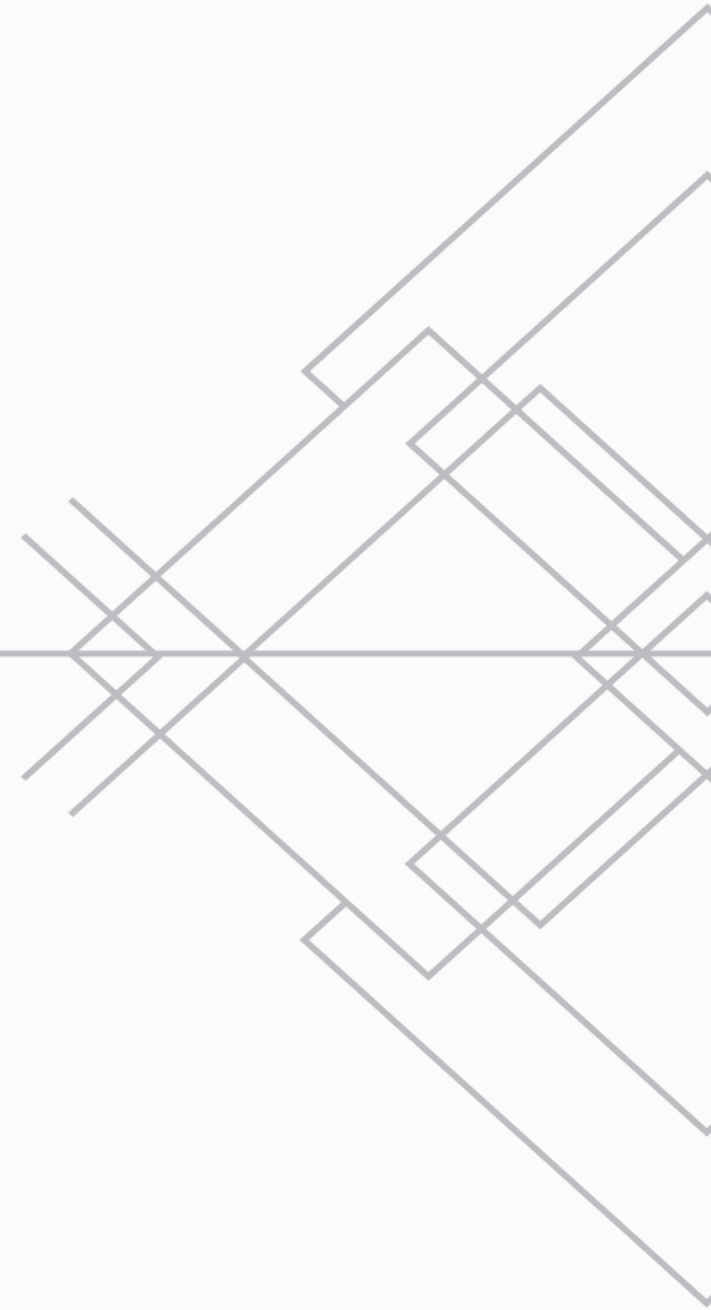
Student Mobile Experience: Results



We delivered designs for ongoing work on the mobile platform.



Education



Connect2 Blackboard Integration: Background

Case Study: McGraw-Hill Education Learning Platform Integration with Blackboard

Bringing the best of two worlds together.

Learning platforms, such as Connect, provide courseware and content for educators. Many educational institutions also use learning management systems, which handle many responsibilities, including the administration of classes; actual content is outside their responsibilities. Blackboard is the #1 learning management system in the industry.

Connect2 is a new version of Connect, currently in pilot usage. Without compatibility with Blackboard, many educators would find it challenging or unfeasible to use Connect2 content in their classes.

The Problem

Connect2, a learning platform, lacks integration with Blackboard, an industry-leading learning management system.

The Solution

We built infrastructure to bridge the two systems, allowing Blackboard users to log into Connect2, and for Connect2 content to be available within Blackboard.



“I’d like to use Connect2 content in my course. My university uses Blackboard. If only there was a way to bring them together....”

Connect2 Blackboard Integration: Instructor Registration Wireframe

Original

McGraw Hill Education

Create an Account


English – United States

Help

Welcome

Account Info

Success



Welcome!

Need to Create a Higher Ed Instructor account?

Enter your school email to access course material.
A personal email account can be used if no school email exists.

Email

GO

Already have an account? [Sign in.](#)

Not a Higher Ed Instructor?
Create an account as a PreK-12 Teacher instead.

version 1

McGraw Hill Education

Create Account

U.S. - English

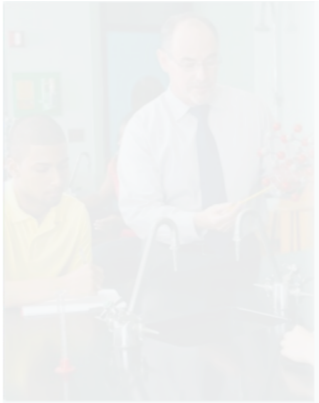
Help

Return to Blackboard

Welcome

Account Info

Success



Welcome Jane Small!

Let's create a Higher Ed Instructor account to connect your Blackboard course with McGraw-Hill content.

You'll only have to do this once.

Jane.Instructor@nyu.edu

Go

[not you?](#)

version 2

McGraw Hill Education

Create Account

U.S. - English


Help

Return to Blackboard

Welcome

Account Info

Success



Welcome Jane Small!

Let's create a Higher Ed Instructor account to connect your Blackboard course with McGraw-Hill content.

You'll only have to do this once.

Jane.Instructor@nyu.edu [not you?](#)

Security

Password

Reenter password

Security Question

What street did you live on when you were 10 years old?

▼

Answer

Your password must include:

8-20 characters, no spaces

1 uppercase and 1 lower case letter

1 number

Institution

Country

▼

State/Province

▼

Institution

▼

Department

▼

Don't see your institution listed?

[Contact us for help.](#)

Would you like to [add another institution?](#)

☒ I'd like to receive information on McGraw-Hill School Education products, services and promotions.

Instructor Registration: The registration experience was designed with only native Connect2 users in mind. The experience was revised, providing a frictionless and welcoming flow for Blackboard users.

Connect2 Blackboard Integration: Courseware Search Wireframe

Courseware Search: We developed pages that existed in middleware (between the two applications). These pages had Connect2 branding to orient users, but were customized for Blackboard users.

connect 2

HelpBack to Blackboard

Select your McGraw-Hill materials

Explore products that include course chapters, interactive content, adaptive modules, assignments, question banks, and more.

Begin by finding materials for your Course.


connect 2

HelpBack to Blackboard


Select your McGraw-Hill materials

Explore products that include course chapters, interactive content, adaptive modules, assignments, question banks, and more.


Medical




Essentials of Medical Language
Published Jul, 12, 2016 1:24:47 PM




Medical Assisting Review
Published Jul, 12, 2016 1:24:47 PM




Anatomy, Physiology & Disease
Published Jul, 12, 2016 1:24:47 PM




Essentials of Medical Language
Published Jul, 12, 2016 1:24:47 PM




Anatomy, Physiology & Disease
Published Jul, 12, 2016 1:24:47 PM



Math and Dosage for Healthcare
Published Jul, 12, 2016 1:24:47 PM



Medical Language for Modern Healthcare
Published Jul, 12, 2016 1:24:47 PM



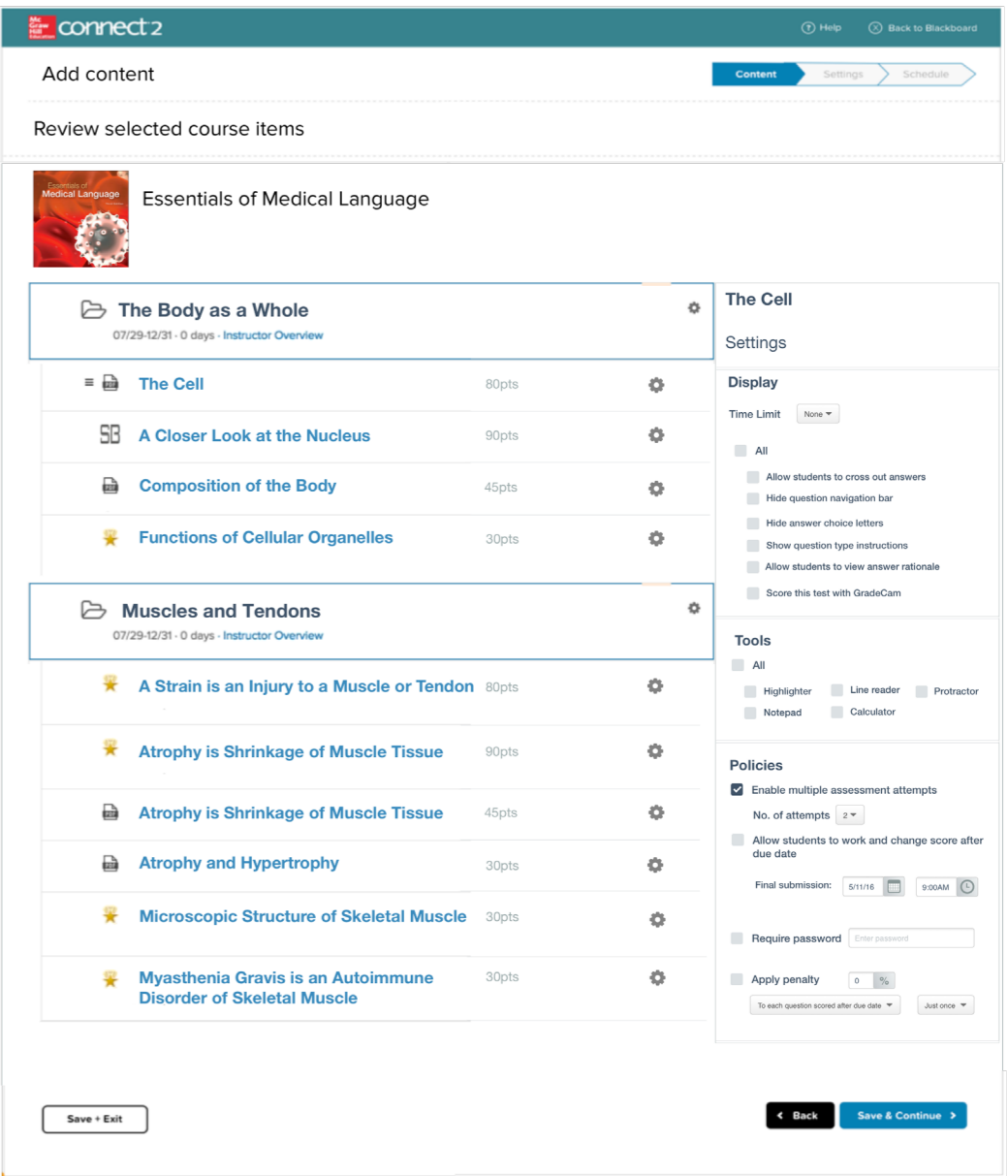
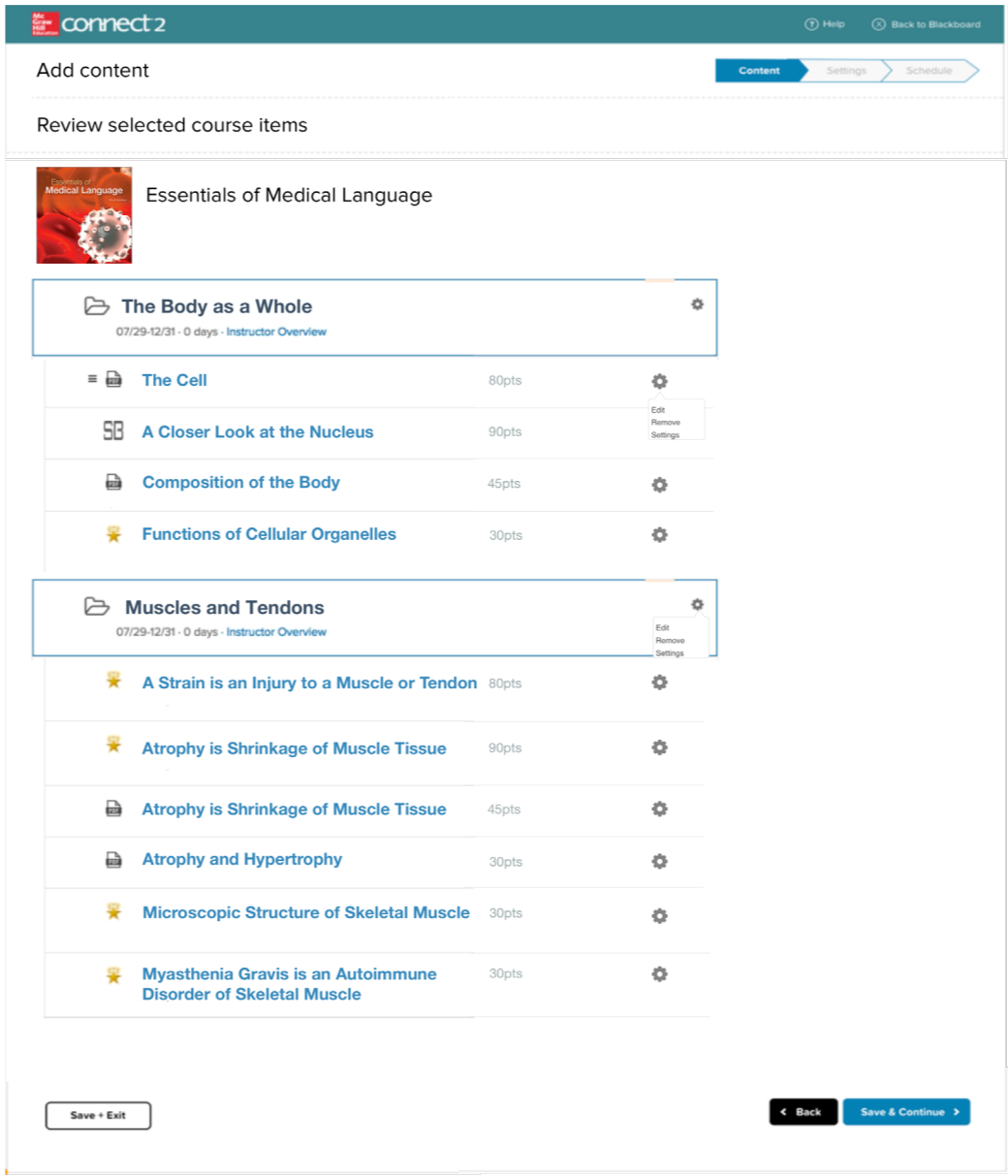
Medical Assisting
Published Jul, 12, 2016 1:24:47 PM

LS

27

Connect2 Blackboard Integration: Courseware Content Selector Wireframe

Courseware Content Selector: These middleware pages combined multiple feature sets to expose Connect2 courseware within Blackboard.



Connect2 Blackboard Integration: Assignment Preview Wireframe

Mc Graw Hill Education

connect2

?

 Help

×

 Back to Blackboard

Back

Assignment Title: Homework #1

Edit

Student Progress | Student Preview

| Student | Score | Started | Timer | Thru | Options |
|------------------|------------|--------------------------|-------|------|-----------------------------------------------------|
| Alex Student | 100% (1/1) | Jun 6, 2016 01:44 PM EDT | 00:00 | 0/1 | Score sheet · Clear |
| Andrew Student | 100% (1/1) | Jun 6, 2016 01:44 PM EDT | 00:00 | 0/1 | Score sheet · Clear |
| Bharathi Student | - | - | - | - | Score sheet |
| Braden Student | - | - | - | - | Score sheet |
| Chandler Student | - | - | - | - | Score sheet |
| Dan Student | - | - | - | - | Score sheet |
| Jana Student | - | - | - | - | Score sheet |
| Mike Student | - | - | - | - | Score sheet |
| Newname Student | - | - | - | - | Score sheet |
| Quang Student | - | - | - | - | Score sheet |
| Sam Student | - | - | - | - | Score sheet |
| Sara Student | - | - | - | - | Score sheet |

Mc Graw Hill Education

connect2

?

 Help

×

 Back to Blackboard

Back

Assignment Title: Homework #1

Edit

Student Progress | Student Preview

< 1 of 4 >

Example

+

 Differentiated Resource

+

 Example

Convert Unit Rates

A passenger airplane travels at a rate of 510 miles per hour.

How many miles per minute is this?

Flight #826

Pittsburgh to Indianapolis

510 mph

Assignment Preview: This pages combined multiple Connect2 flows into a single accessible place, more appropriate for their positioning within Blackboard.

Connect2 Blackboard Integration: Instructor Dashboard

Go to Content Market

Open Learning Home

MCGRAW-HILL COURSEWARE

Intro to Biology

Medical Language

Hoefnagels' Essential Biology

View My Courseware

Add an Assignment

Edit My Content

ACCOUNT ACCESS

View my Account

Reset single sign on

Linked McGraw-Hill Account: Jane.instructor@nyu.edu

Unlinking will remove access to Connect assignments and prevent manual syncing with Blackboard. Sign in again to pair the accounts and restore access.

OVERALL CLASS AVERAGE

79%

Last Month 66%

0 - 59%

60 - 69%

70 - 79%

80 - 89%

90 - 100%

Jul 14, 2016 - Jul 21, 2016

DUE DATES: WEEK VIEW | LIST VIEW

July

SUN

17

MON

18

TUE

19

WED

20

THU

21

FRI

22

SAT

23

7/20/2016 12:56 PM

WED JUL 20

Chapter 1 - Eigenvalues and eigenvectors

88% Avg. Score

Homework

Open

19/20 Students Submitted

80% Grade Synced

OPEN LEARNING TOOLS

Insight

View analysis of your class performance.

Lecture Captures

Record lectures to capture the material for students both in and out of class.

GRADE SYNC

79 Percent

79 of 100 Assignments have been synced.

Sync

Last sync 08/01/16 3:00pm EST

GRADE SYNC

No assignments available for sync

Sync

Last sync 08/01/16 3:00pm EST

GRADE SYNC

79 Percent

Error Syncing. Please try again.

Sync

Last sync 08/01/16 3:00pm EST

SYNCING

GRADE SYNC

Syncing...

Sync

COMPLETE

GRADE SYNC

100 Percent

100 of 100 Assignments have been synced.

Sync

Instructor Dashboard: This page is a unique experience for Blackboard users using Connect2. It combines functionality and data from Connect2, recontextualized to fit into a dashboard format.

LS

30



Education



The design of the Blackboard integration is a work-in-progress, and continues while the initial Connect2 pilot is underway.



Thank You.