bakpak

Brief

TEAM

Tristan Bedell
Case study, pitch, UI

Stephen Smith
Animations, storyboards, script

ABOUT

Bakpak is a device and app that tackles issues in the classroom that typically go unnoticed. These problems are usually seen as minor inconveninces that don't need to be addressed, such as pacing and not knowing when to ask for help. However, with time, these little problems can add up to a number of bad habits, both in and out of the classroom.

Student–teacher communication is crucial to learning. Teachers exhaust themselves by craning their neck towards every student who needs help, and there are often a large number of students who are too afraid to ask for help in the first place.

How does one bridge the gap and create a more affective way of communicating in the classroom? Well that's what we're here to find out.

Challenge

CREATE A DEVICE THAT:

1. Promotes a more effective way of communicating between teachers and students within the classroom.

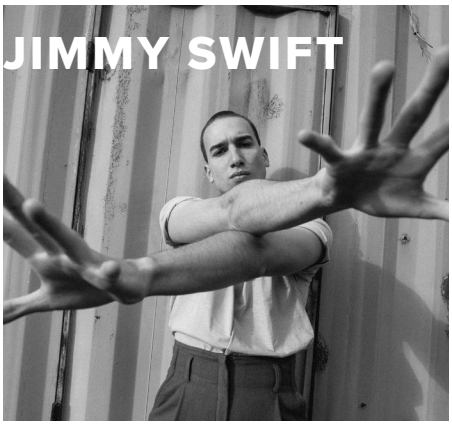
2. Provides students with a broader range of resources & material via an online database.

3. Reduces waste by storing textbooks, notes, & other classroom necessities all within a readily accessible device.

The User

Bakpak's target audience consists of students in the later years of their education. Teachers have free reign to use Bakpak as they see fit, but it would be most beneficial for students and teachers from a High School to College range, seeing as these are the students who have the most responsibility.

EXAMPLE USER



+ 17 Years Old

+ Socialist

+ Junior in highschool

+ Wannabe problem child but secretly wants to impress his parents with his good grades and chipper attitude

And so, our solution:

An A.R display that promotes positive and well informed decisions when teaching, eliminates the anxiety of students who feel too afraid to ask for help, and provides both students and teachers all resources they could possibly need at the touch of a button.

The Technology

Bakpak uses laser projection technology in combination with augmented reality to display interactive holograms in front of every student. This display can then be controlled and manipulated at the hand of the teacher via an iPad or any other compatible device.

Having the central control point exist as an app lets the teacher discreetly help students that may be struggling more than others, as to not single them out in front of the class. Additionally, teachers can monitor the class as a whole, track progress, assign projects, distribute papers, and cycle through lectures without having to pause.

Assumptions

1. Technology will not distract students while learning

2. Students who have a hard time speaking up in class will be comfortable silently submitting their answers

3. An anonymous option allows students to voice concerns they otherwise would not

4. Instructors becoming more aware of students understanding will allow them to teach at the optimal pace for the class

5. Students, teachers, and families are comfortable with AR/AI technology in a classroom

Research

SURVEY HIGHLIGHTS

53% of students prefer online documents over physical handouts.

87% of students have refrained from asking questions due to shame.

98% of students have experienced an instructor that teaches too quickly or slowly for the class.

FINDINGS

Stephen and I figured that the quickest and most effective way of getting valid opinions of people was to post surveys on a variety of subreddits. These included **r/education, r/teachers,** and **r/studentproblems.** The results were good, considering we got 50 responses in a couple of days.

We gave those being surveyed the ability to write some of their own answers, in order to accurately describe problems that they've faced while receiving an education, as well as the option to provide any solutions that they thought would be beneficial. A few solutions that stood out were:

"Closer interaction between professor (not TA) and student. Technology should be able to facilitate interaction."

" Being able to ask a question not in front of the class, whether that is through a question jar or an email."

"Instructors should pause lecture periodically to ask if anyone has questions. It's surprising how many instructors plow through lecture and wonder why students don't well on exams or understand the material."

We chose to highlight these three problems because they aligned the most with our original concepts, and confirmed the fact that we aren't the only ones who felt a certain way.

Research CONT'D

OTHER QUESTIONS

1. How open are you to the idea of using smart technology (augmented reality platforms, artificial intelligence) in classrooms at schools?

55% open
40% somewhat
5% no opinion

2. In your experience, if you had a question for an instructor or trouble understanding a concept, was it easy for you to obtain immediate help?

28% often
49% sometimes
23% rarely

3. Would you feel more comfortable expressing confusion to an instructor out loud or via an anonymous submission?

63% anon
37% out loud

4. Which form of note taking do you find to be the most beneficial?

59% by hand
26% keyboard
15% touchscreen

OTHER SUGGESTIONS

"Less talking at the students, more talking with them. Conversations over long lectures."

"More collaborative? Or to have a sense of collaboration. I think this makes it more comfortable, more on equal ground."

"More discussion between students/teacher of possible. Definitely more respect on both sides."

"Let us take notes on the computer, some professors still insist on paper and pen methods which aren't nearly as efficient. Having access to their lectures so that we don't have to get it all the first time"

"It would be nice if teachers posted q&a discussions more because they've helped me a in my classes when I dont have time to go to office hours."

"All visual aids available online to review after lecture, including lecture slides/notes along with additional learning resource to enhance knowledge/understanding of the topic."

" I think student/teacher interaction would be much more question/answer based."

"More attention to students, whether or not that includes classrooms with fewer students or more teachers inside of 1 classroom."

Competition

Socrative
APP

Students share their understanding by answering formative assessment questions in a variety of formats: quizzes, quick question polls, exit tickets and space races.

Google Classroom
COMPUTER PROGRAM/APP

Allows students to post questions & receive answers from their teachers and fellow students. Teachers can post questions and materials to learn at home or on the go.

SelfCAD
COMPUTER PROGRAM

Cloud-based 3D CAD software package for students that provides them with real life tools and can give students a hands on approach to engineering and industrial design related fields.

SeeSaw
APP

Enables students to document, showcase and reflect on what they are learning at school. Work can be made accessible to parents as well, and help students flesh out and problems.

3DBear
A.R / APP

Users can build and share scenes using 3D models with this app's object library or content imported from Thingiverse. Teachers create and assign lessons through a web-based dashboard, and students use the app to create scenes.

Khan Academy
COMPUTER PROGRAM

Non-profit educational organization that produces short lessons in the form of videos. Its website also includes supplementary practice exercises and materials for educators.

Priorities

1 Promote communication

2 Create structure

3 Reduce waste

90

Develop a specialized learning program for students and teachers that will eliminate academic barriers and involve students more inclusively.

10

Create a waste-free, organized hub for all classroom materials.

Goals

For the Business

+ Creating a checkpoint system for teachers and students in order to track class progress, provide/receive feedback, and help those that're behind.

+ Providing an online database that serves as a file sharing platform for students to keep all of their supplies.

+ Generally making education an easier and less anxiety inducing experience for everyone involved.

For the Student

+ Know that they can shamelessly ask for help whenever they need it.

+ Experience little to no stress when needing to access files such as notes, previous lectures, or textbooks relating to their courses.

+ Be able to ask important questions relevant to the lessons being taught, in a non-interruptive manner.

For the Brand

+ Making a simple, yet beautiful interface that is effortless to navigate.

+ Color coding classes to organize and create cohesion.

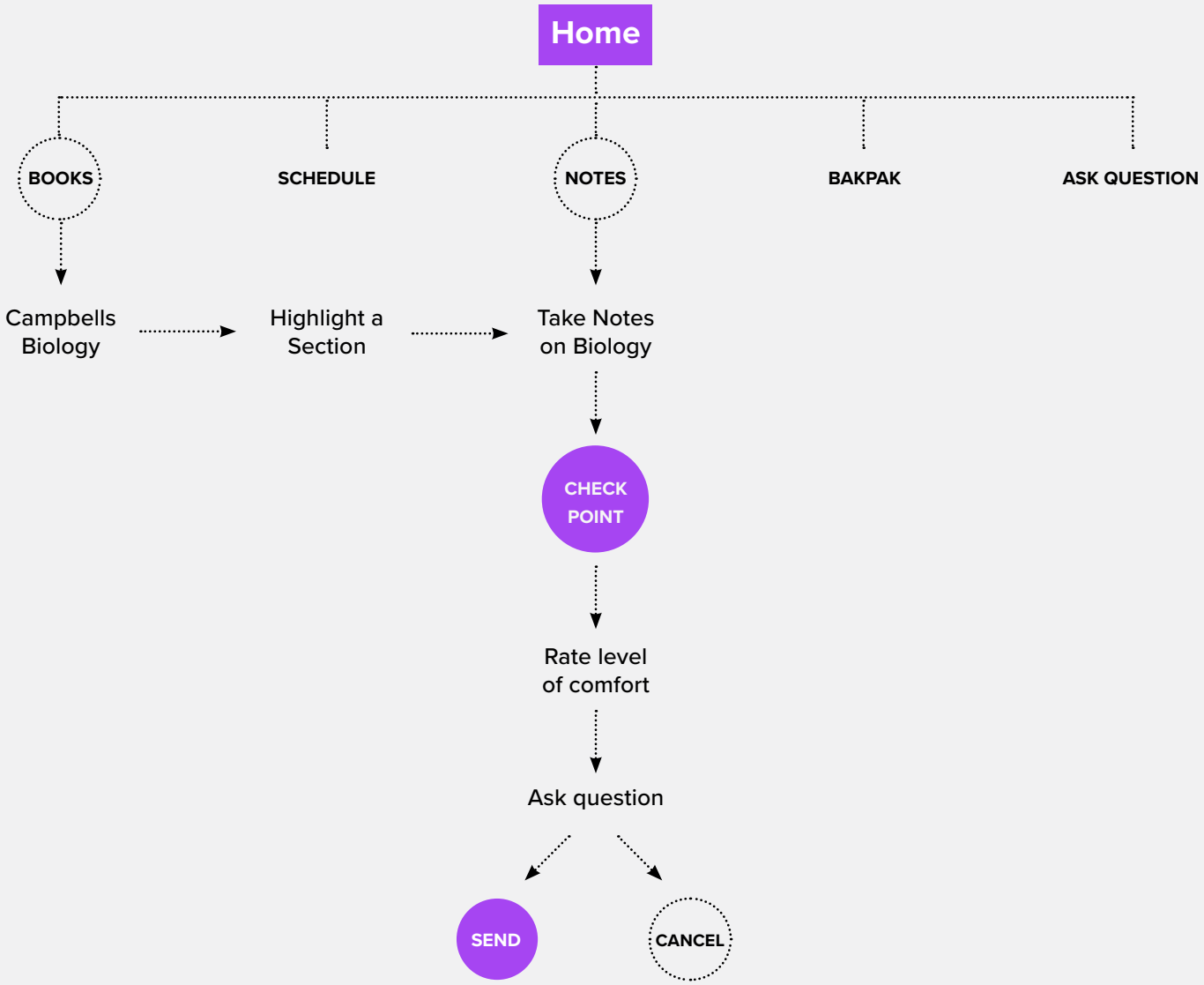
+ Having an interface that can be used easily both in the classroom and at home, depending on user needs.

For the Teacher

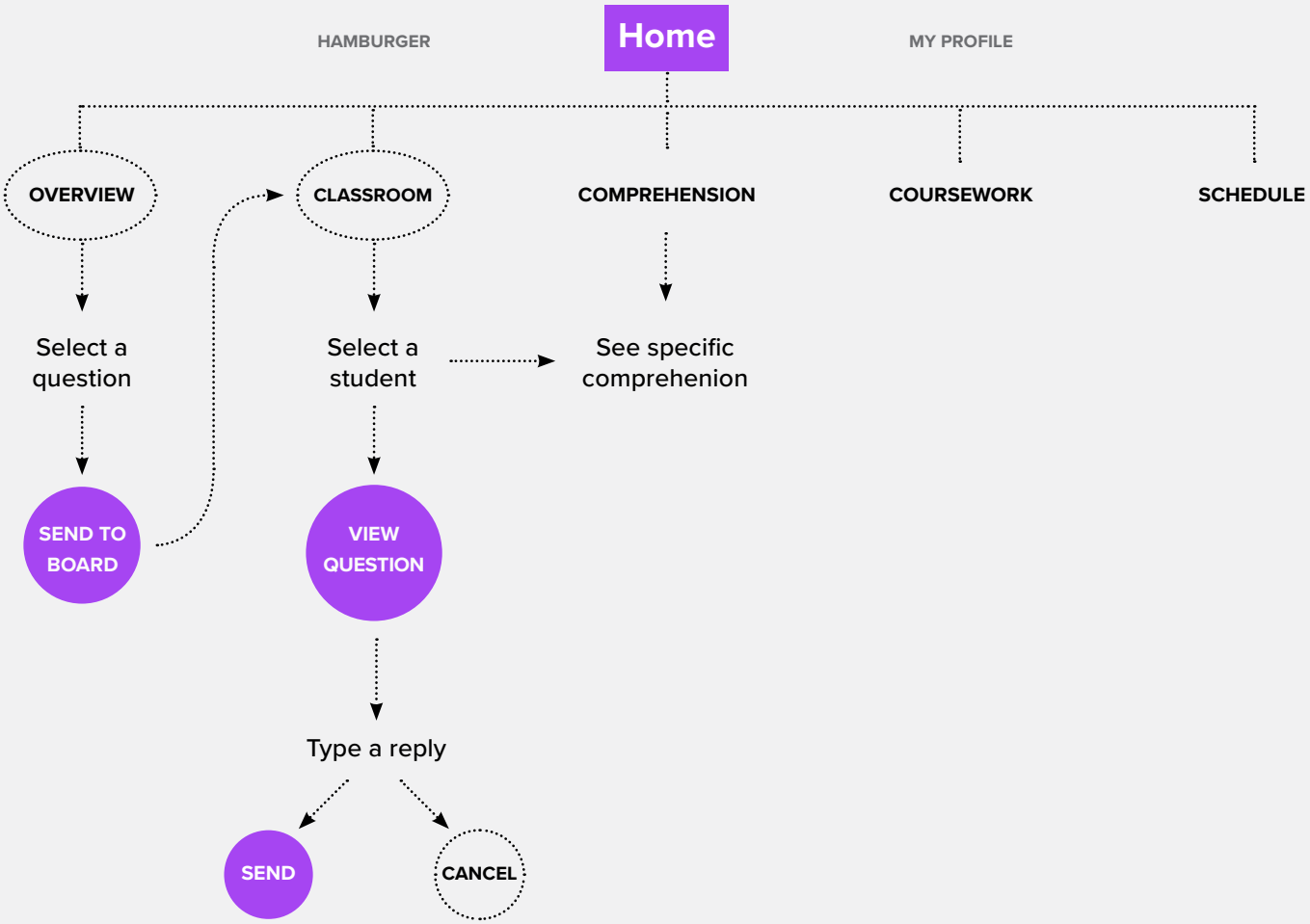
+ Monitor student activity and give confidence in their teaching ability by knowing exactly how their class is feeling at the time.

+ Spark highly engaging discussions amongst the class by choosing from the most relevant questions students have during lessons.

User Flow / STUDENT A.R



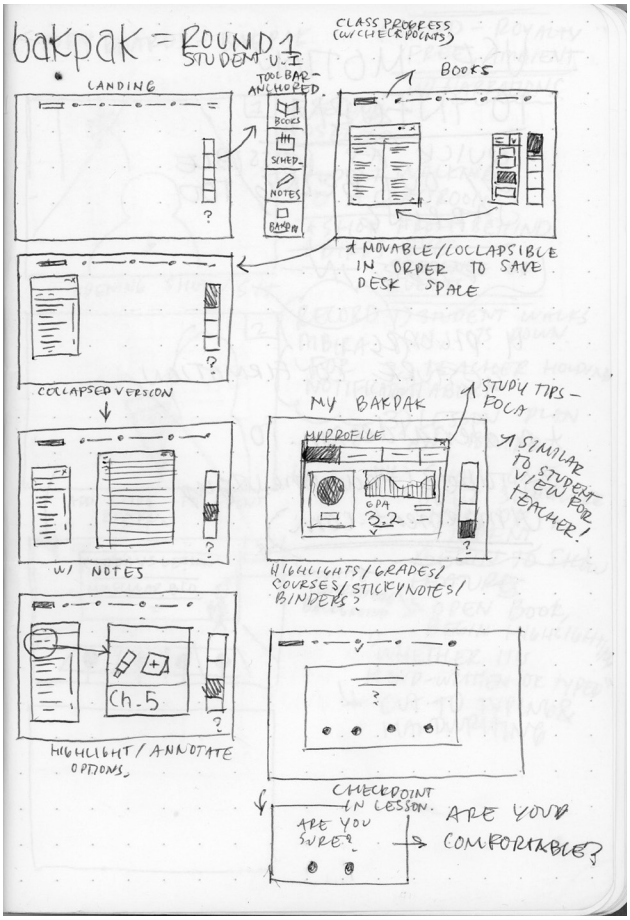
User Flow / TEACHER'S APP



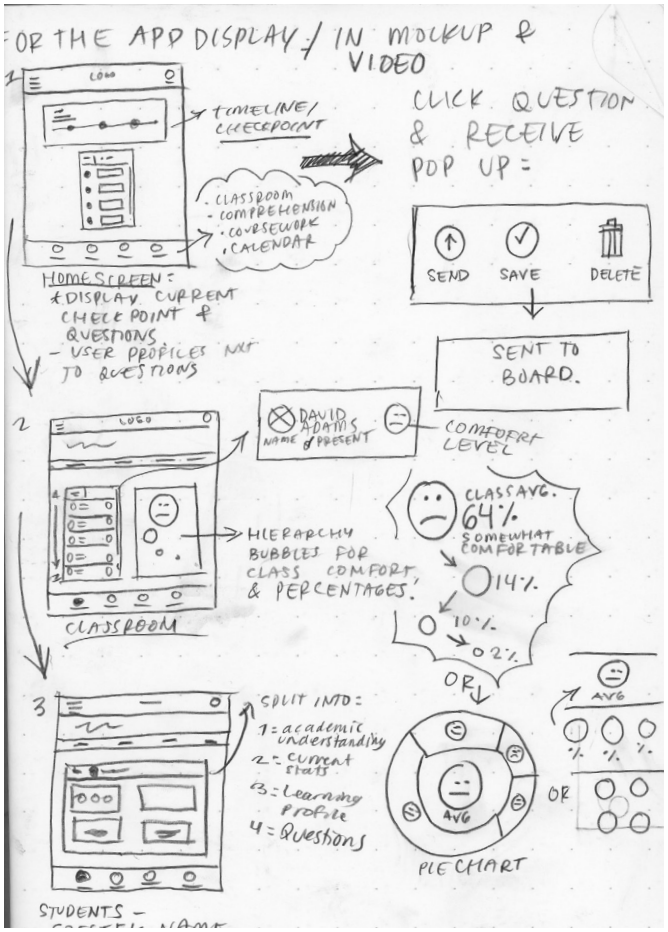
From there came the prototypes.

Wireframes

STUDENT UI

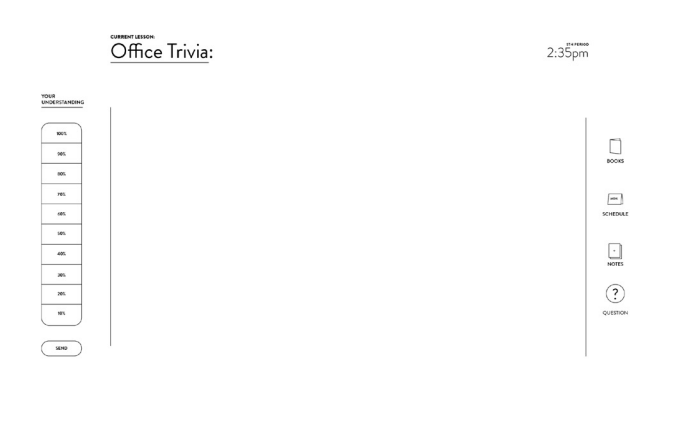


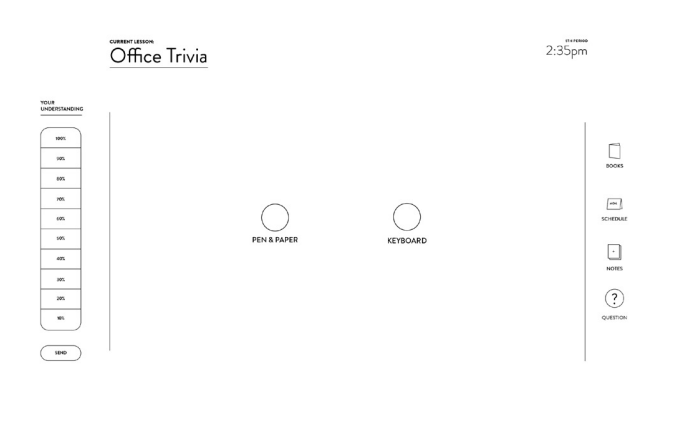
TEACHER UI

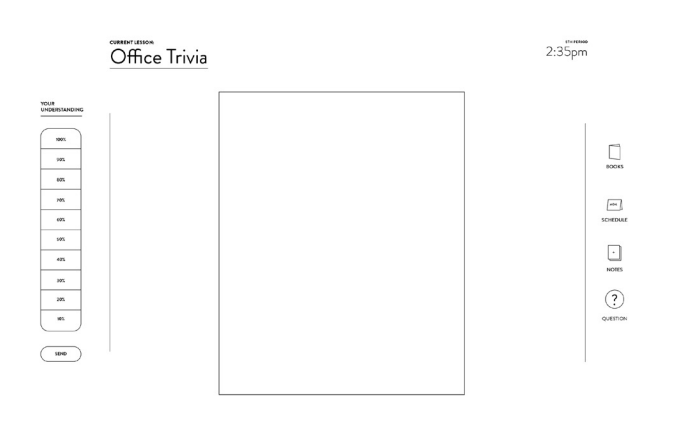


Paper Prototypes

STUDENT UI

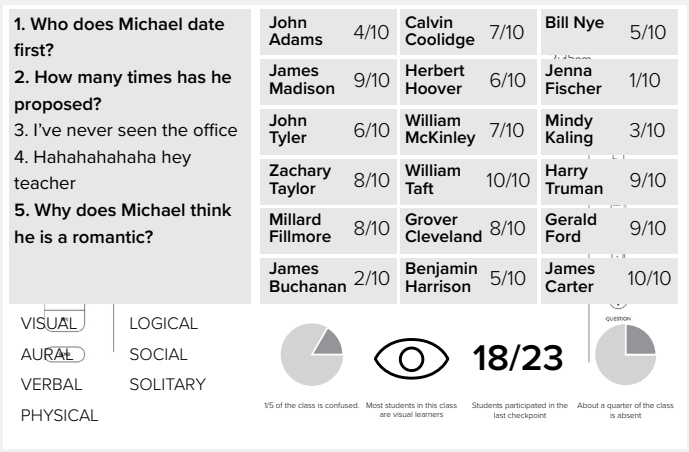


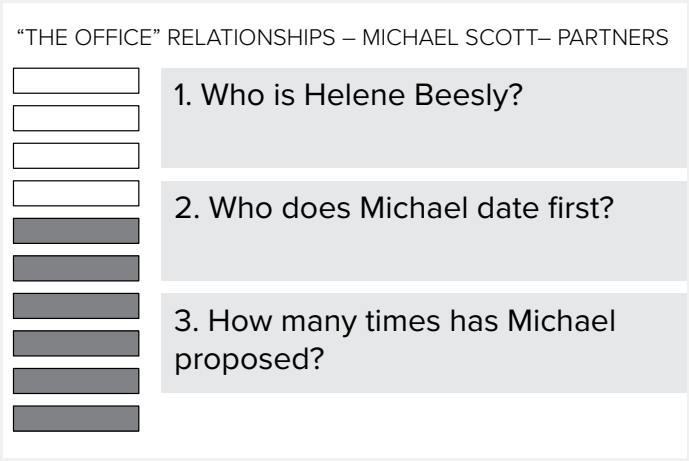


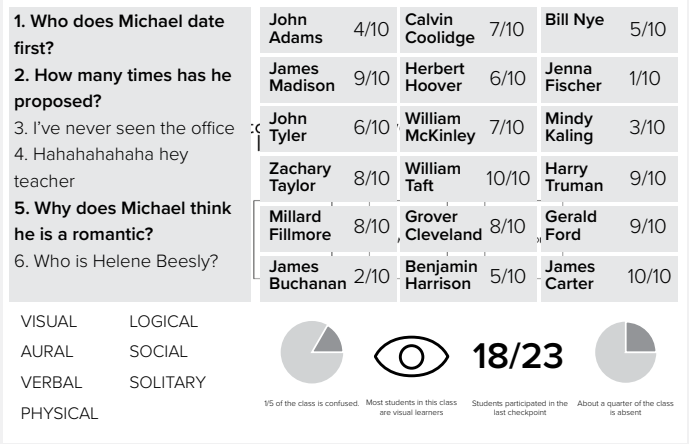


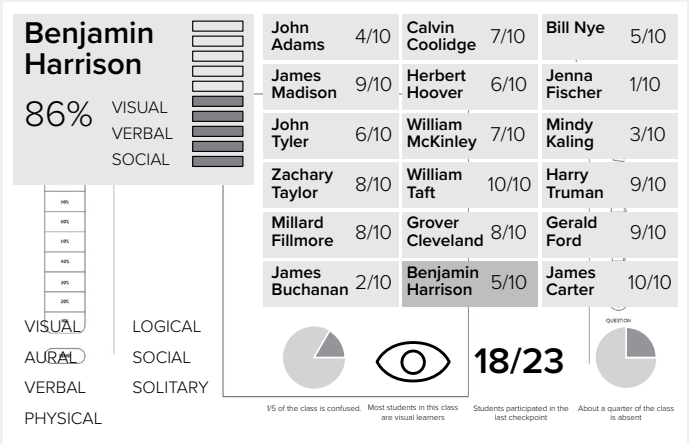
Paper Prototypes

TEACHER UI

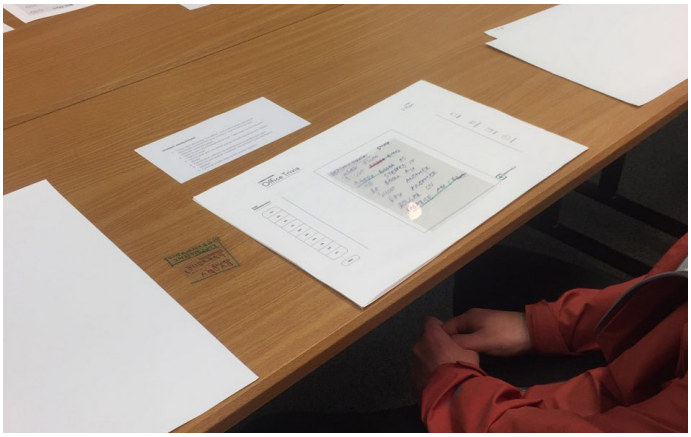


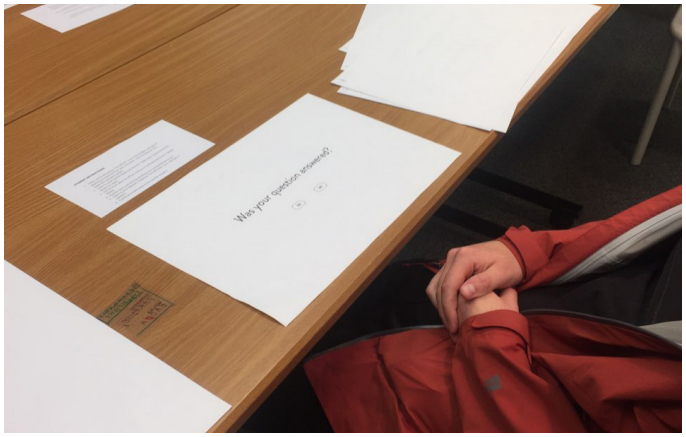


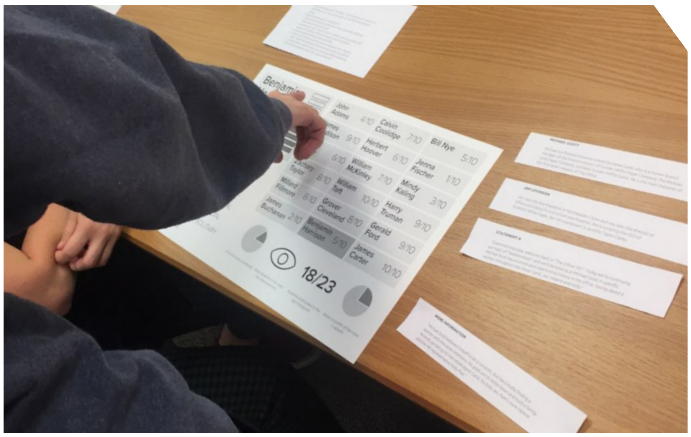


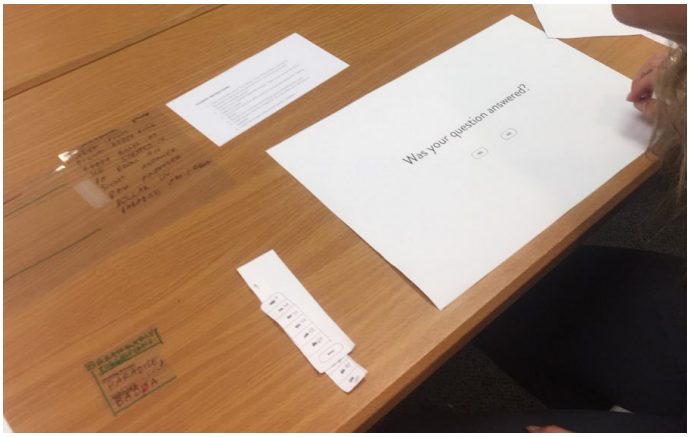


User Testing





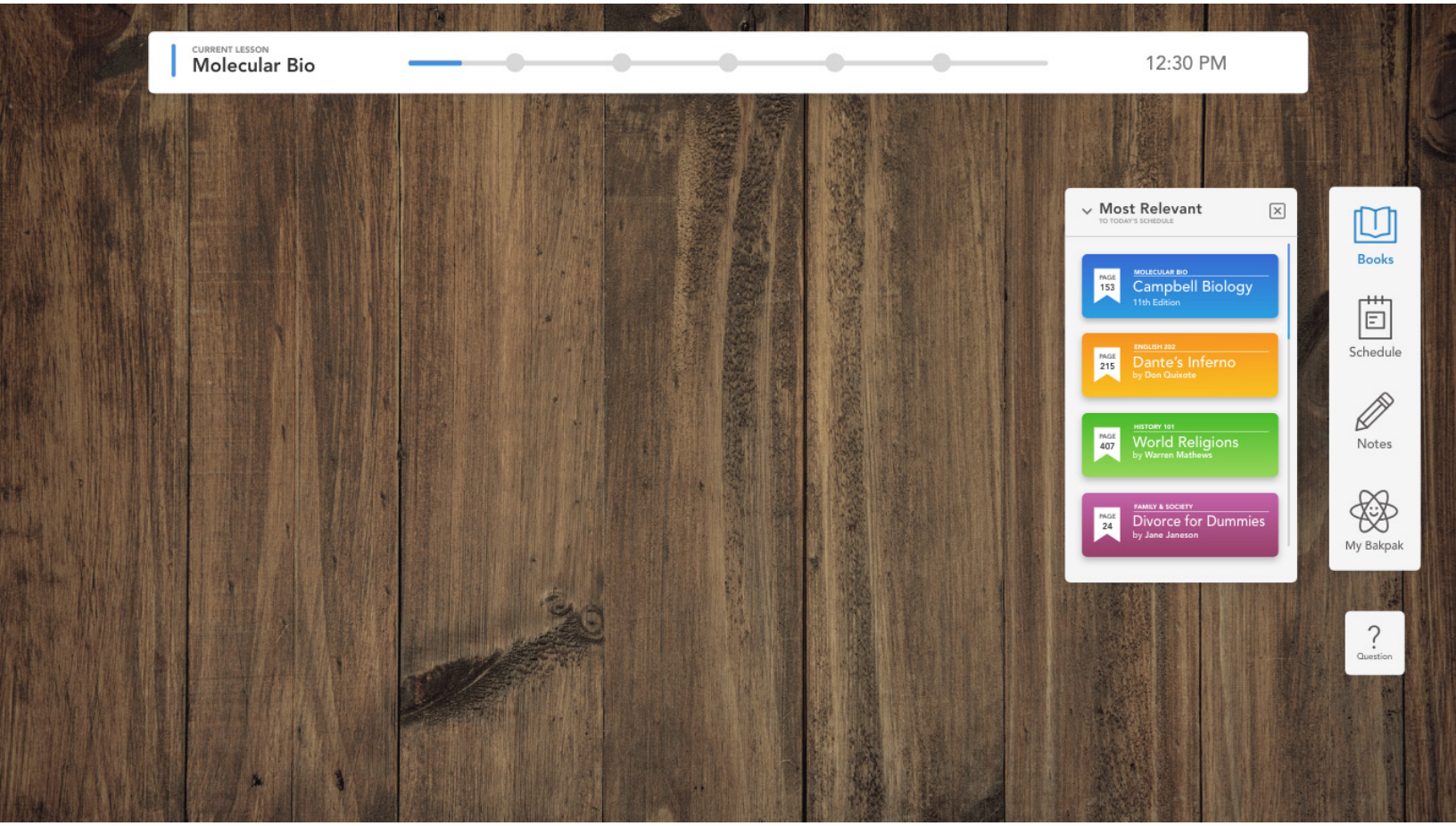




After testing our paper prototypes on a few people, we concluded that our UI was what some would call a disaster. The concept was there, but it hadn't yet been realized. Feedback was given, and so began the hifi prototypes.

Prototype

STUDENT



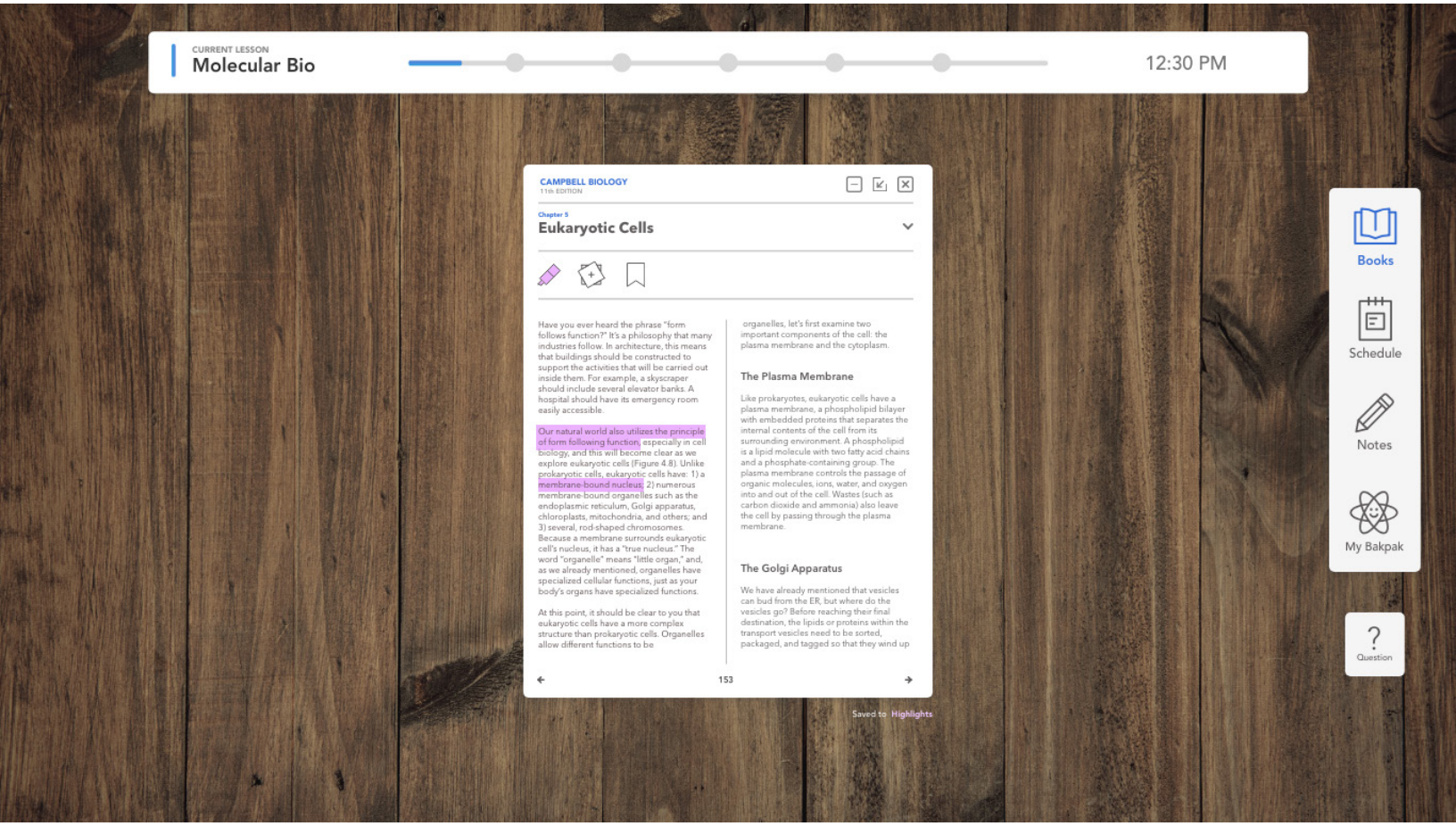
BOOKS

The books feature–one of many resources for students–allows for the quick and non interruptive cycle between course materials.

Storing all class resources on a cloud - based device allows for waste reduction, permanent storage, and faster learning.

Prototype

STUDENT



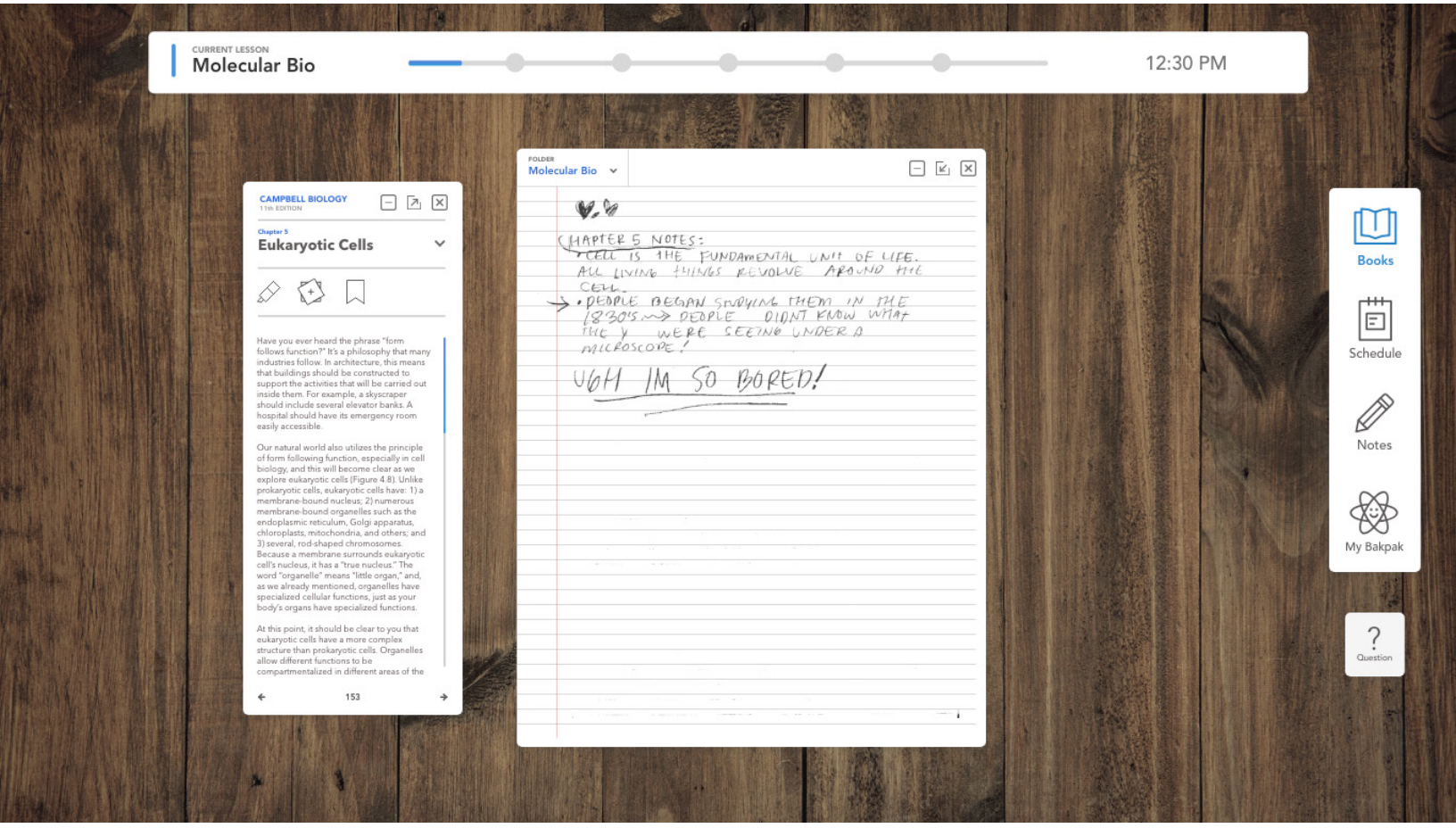
BOOKS - HIGHLIGHT FEATURE

Once opened, the students are presented with the option to highlight, write annotations, or bookmark important sections.

These interactions are then logged into the memory of an online database for students to refer back to.

Prototype

STUDENT



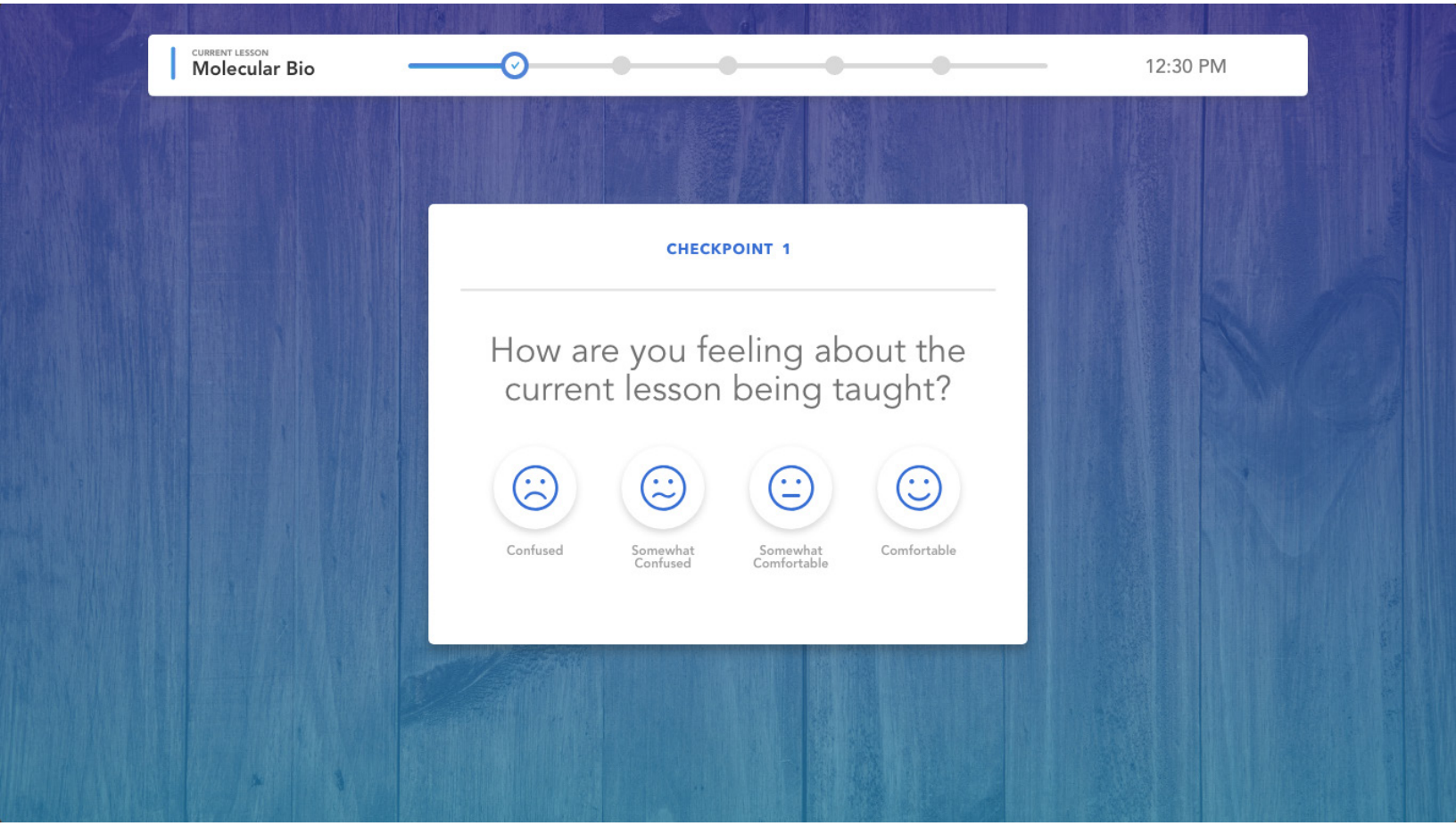
BOOKS - SIZING & NOTES

To help optimize a learning space, students are able to condense features to their personal preference and move them freely throughout their desk.

They are then able to take notes, handwritten or typed, which are autosaved to seperate folders relating to each class.

Prototype

STUDENT



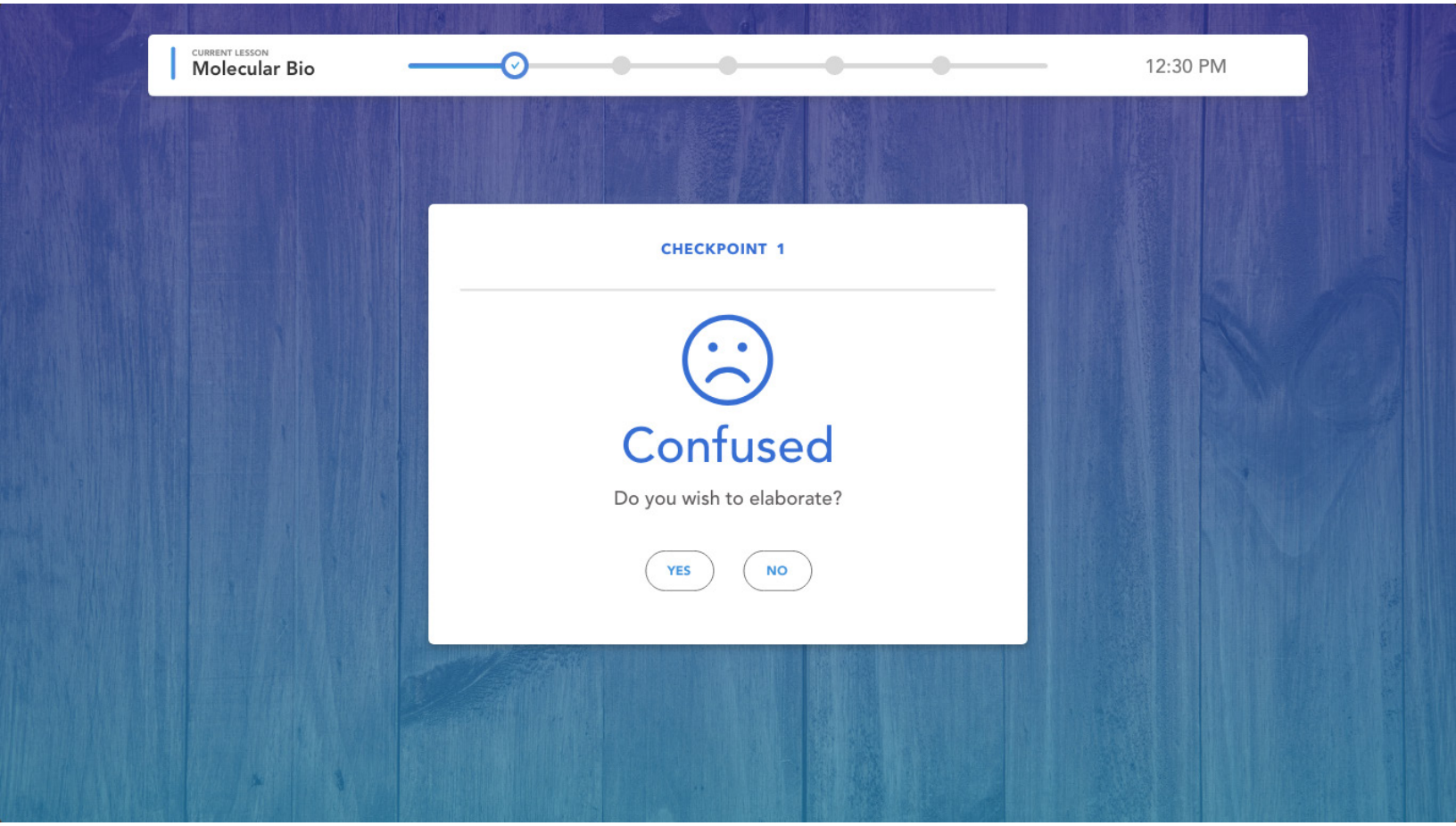
CHECKPOINT - COMPREHENSION

During any given school day, the teacher can set out a series of check points at certain parts of a lesson to track student progress and comfortability.

Students then have the choice of selecting "confused" through "comfortable", which notifies the teacher privately. This ensures that all students feel heard.

Prototype

STUDENT



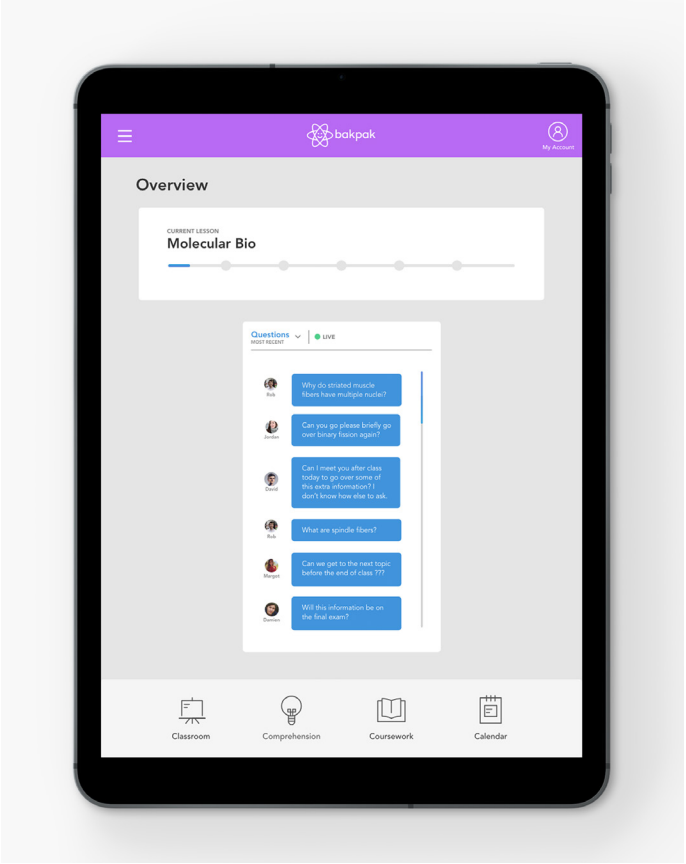
CHECKPOINT - QUESTIONS

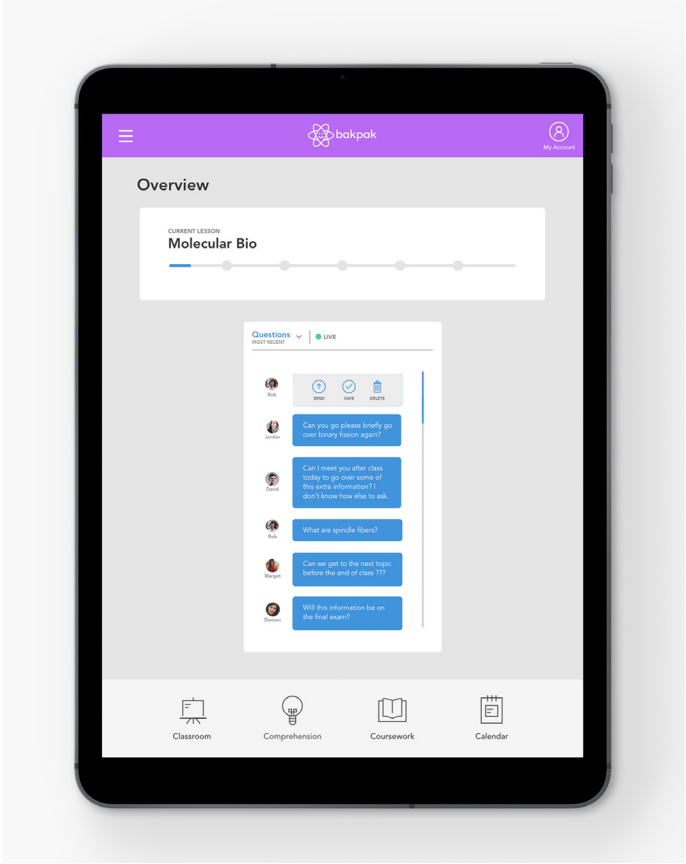
Students are then given the option to elaborate and ask any unanswered questions they might feel too ashamed to ask out loud or in person.

Teachers are immediately notified when these questions are sent, and can keep tabs on which students are struggling more than others.

Prototype

TEACHER





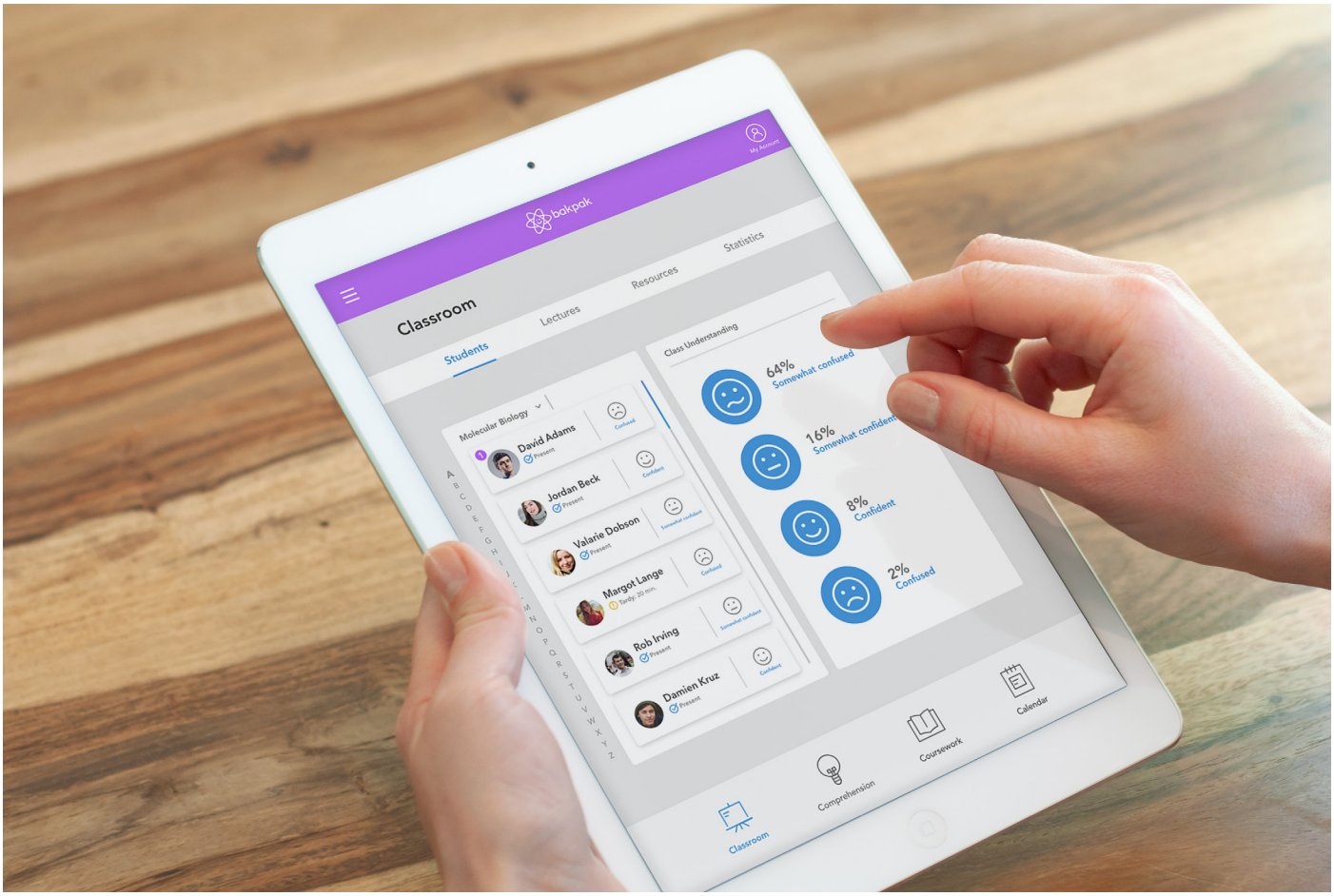
HOMESCREEN

On the home screen, the teacher is able to see a basic overview of the current class or lecture. Teachers are able to view a live feed of questions, as well as the checkpoint status.

Teachers have the ability to select questions they feel might be most relevant to the course material, delete those that are disruptive, and send them to the board for the class to see.

Prototype

TEACHER



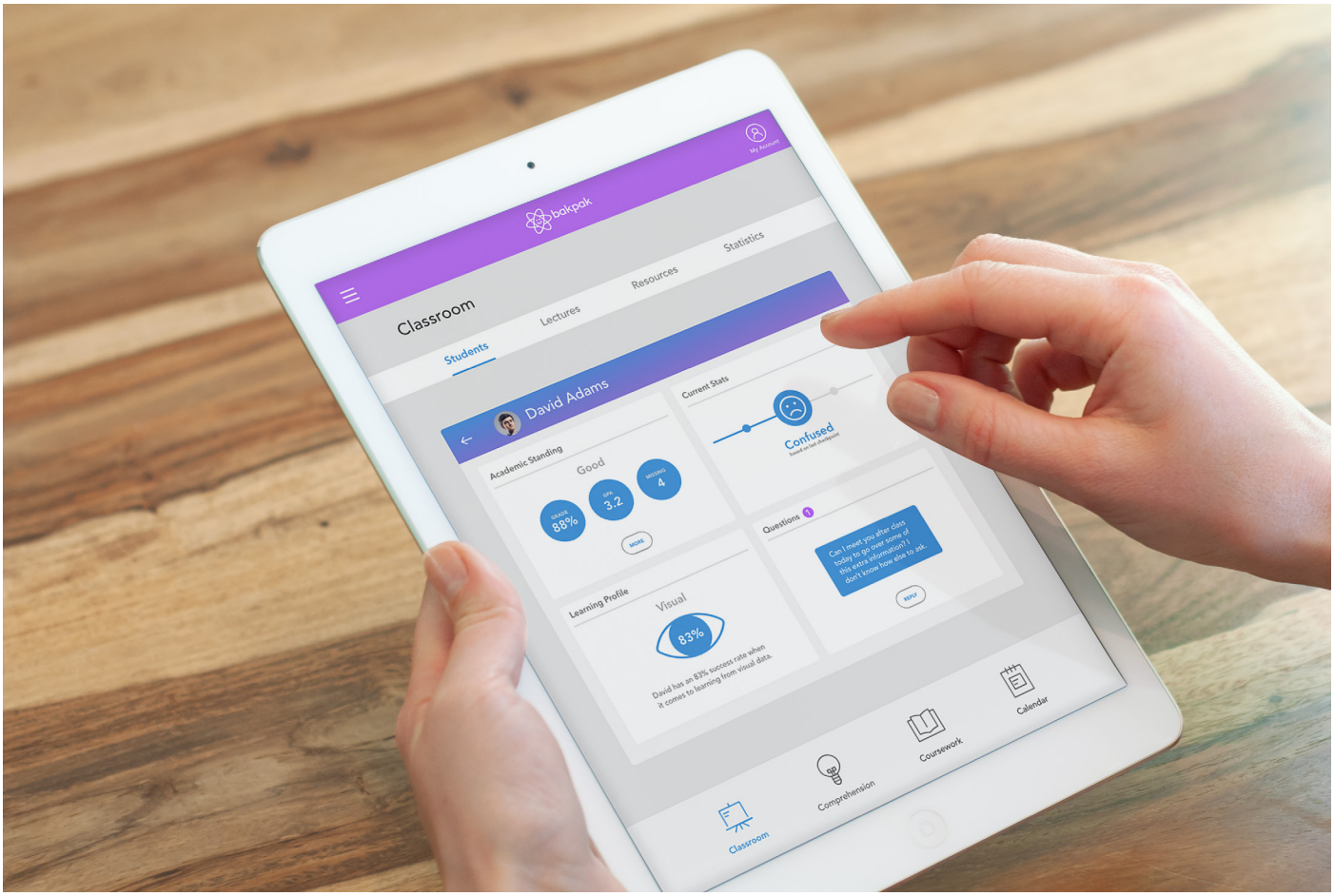
CLASSROOM

The teacher can navigate through specific student profiles and know who's feeling what, as well as get a read on the overall class experience.

If students have any personal or unanswered questions, their profiles will display notification bubbles.

Prototype

TEACHER



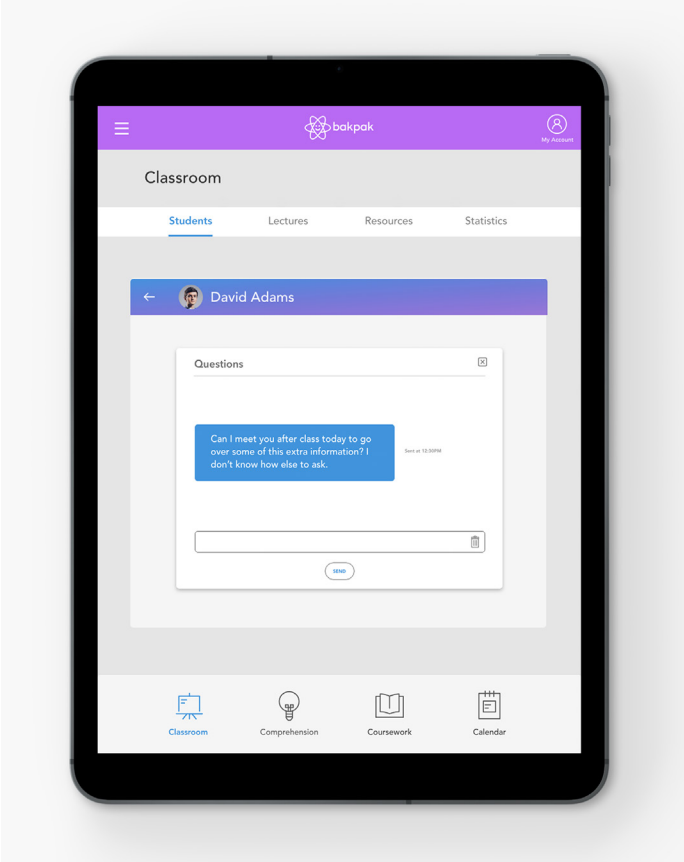
STUDENT PROFILE

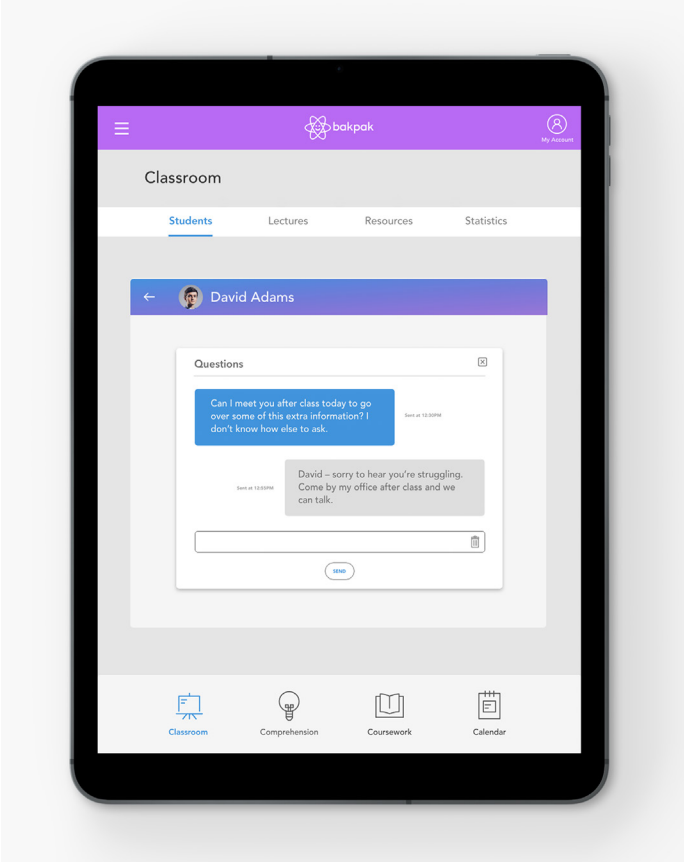
If a teacher feels unsure about a student– whether that be their learning style, their comprehension, or a question they might have – they are able to easily view data to gather a better understanding.

This feature aims to bridge the gap of miscommunication in the classroom, which can help everyone go to sleep at night.

Prototype

TEACHER





MESSAGING

From the notification on the student's user profile, the teacher is then able to discreetly provide any additional help via messaging, even if it's something as simple as listing office hours.

This feature is intended on encouraging more dialogue between students and their teachers, and if used correctly, could greatly advantage both parties.

Takeaway

CHALLENGES

Designing the interface for two products at once presents a lot of challenges. There are little details that perhaps don't always carry over from one user interface to the other.

When a million ideas come storming in, it's difficult to refine and decide what needs to actually get shown. There are always artboards that get built that don't need to. It's just a part of the process, I suppose.

Part of this project feels like it's so close to being there, but just missing a few elements that would really make it feel 100% legitimate. Case and point, Stephen and I didn't really consider the fact that not everyone is going to neccesarily want a pair of VR glasses to attend school.

FINAL REFLECTION

While Stephen and I hit a few road bumps on the way with merging both the student and teacher UI, I think that we resulted in a beautiful looking product. Not only that, but it's a product that we'd both want to use, and in asking around; others would too.

An education is a sacred thing that shouldn't be taken for granted. An unengaged class means an unengaged teacher means an uninspired enivronment.

Bakpak is here to change that.

Launch date to be determined.