
EKG

Engage, Know, Grow

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Problem

- Teachers struggle to develop meaningful connections with students.
- Consequences:
 - Difficult to engage students effectively.
 - Lower trust.
 - Reduced motivation.
 - Less effective learning environments.



Solution:

Target: Grades 6th-12th

What it does: collects both static and dynamic student information to be shared with teachers and offers suggested activities to improve teacher & student relationships.

How it does it: uses truth/dare, 2 truths/lie, and AI generated improv games to collect information about students.



Outline:

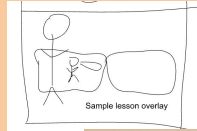
- Initial Sketches
- Selected Interface
- Low-Fi Prototype:
 - Construction
 - Task Flows
- Testing Methodology

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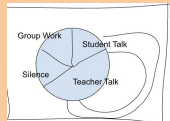
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Initial Sketches:

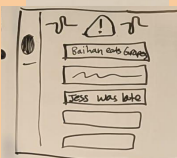
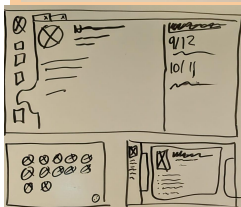
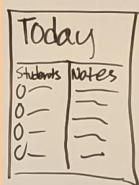
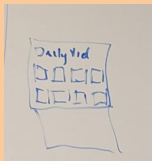
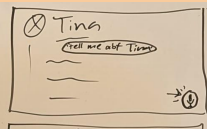
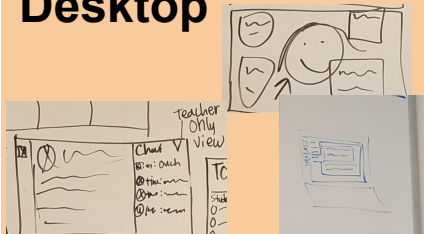
AR/VR



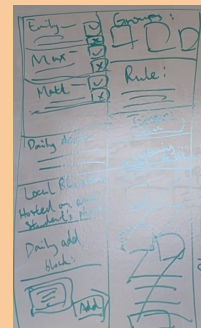
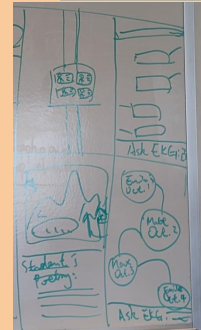
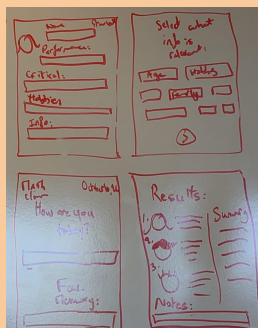
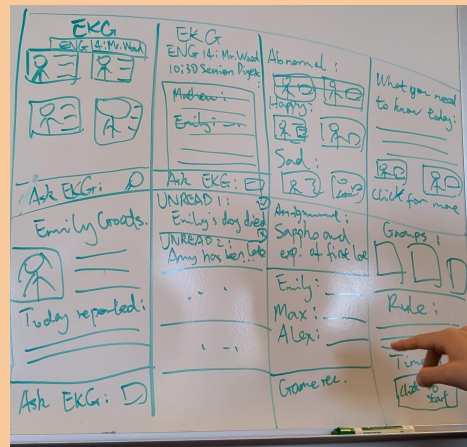
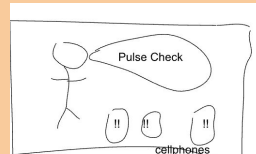
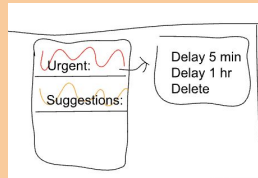
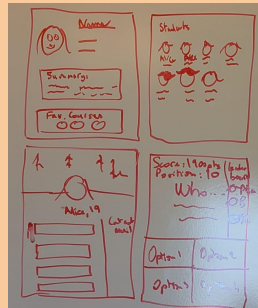
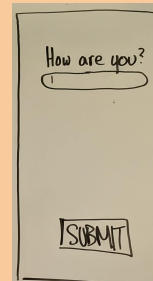
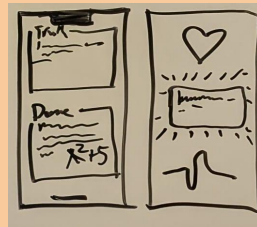
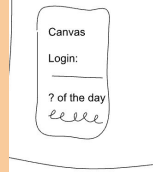
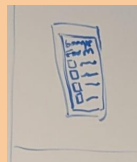
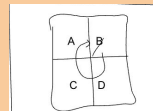
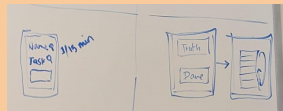
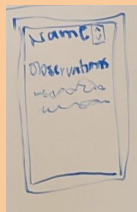
Wearable



Desktop

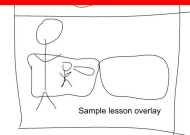


Mobile

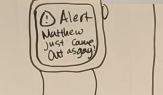
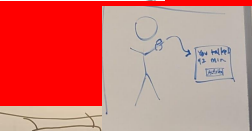
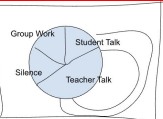


Concept Sketches

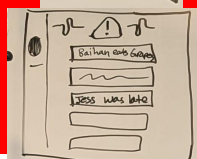
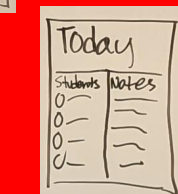
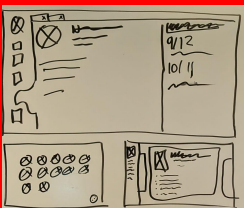
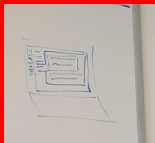
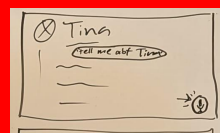
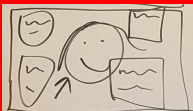
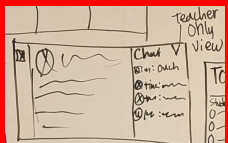
AR/VR



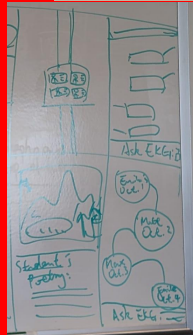
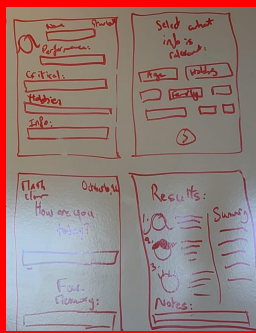
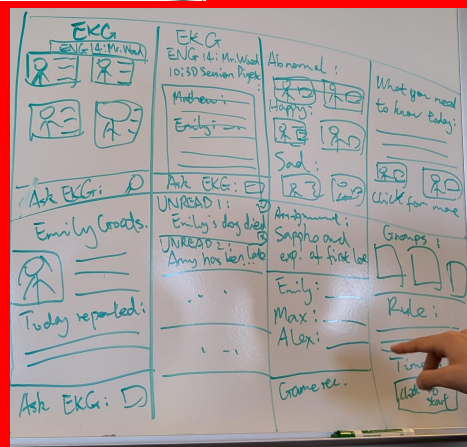
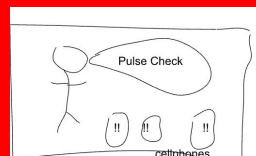
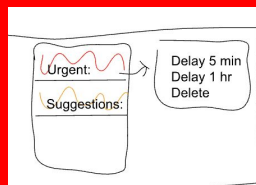
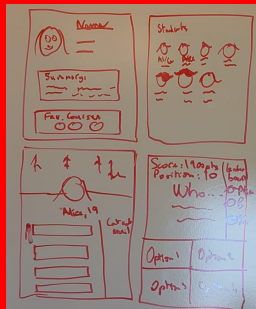
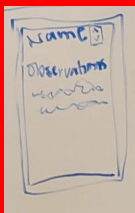
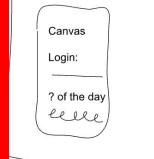
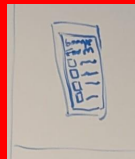
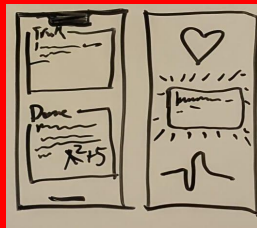
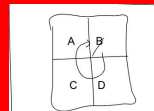
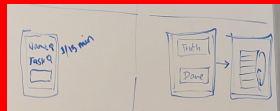
Wearable



Desktop



Mobile

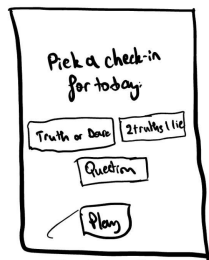


Initial Sketches

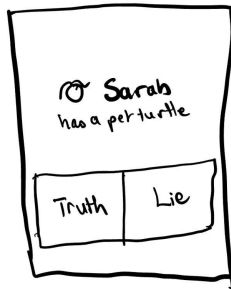
- Mobile



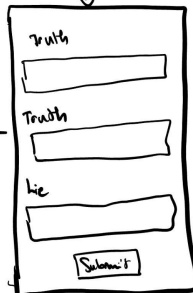
Teacherscreen



Teacher Screen

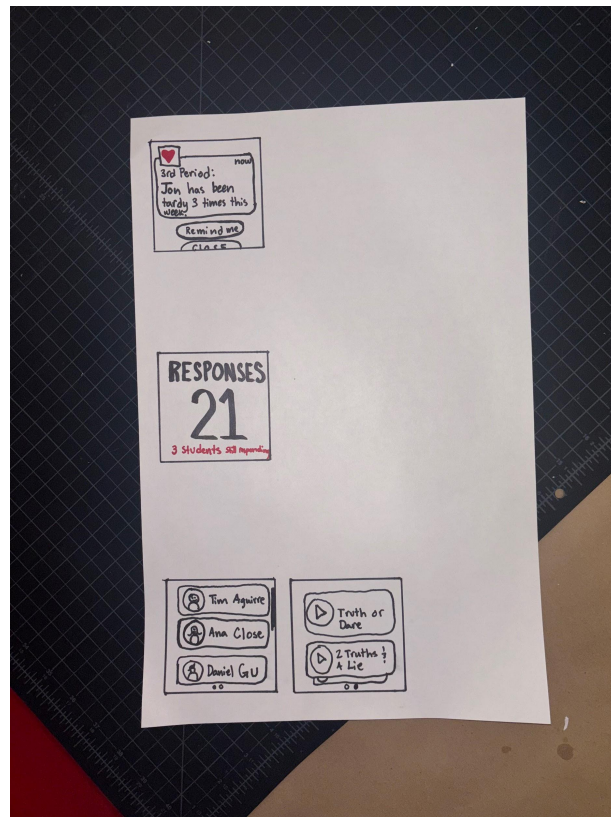


Student Screen



Student Screen

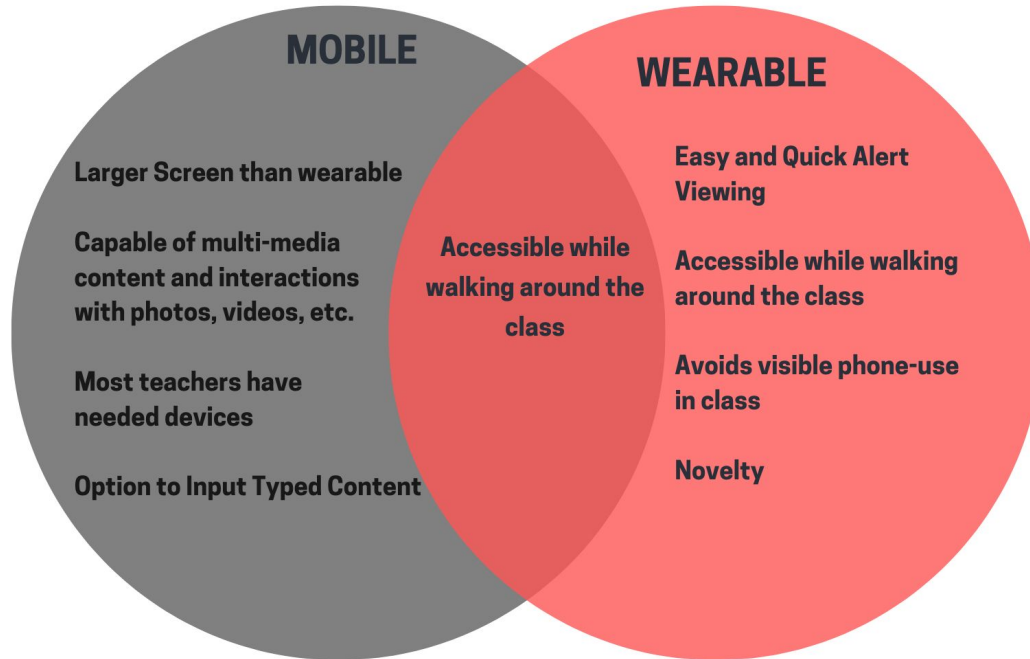
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Outline:

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- **Selected Interface**
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Two Realizations:



Why Mobile?

- Importance of accessibility.
- No additional cost to schools.
- Doesn't expand the digital divide.
- Support both input and output of information.
- Android/Apple mobile compatibility (CS147L).

Outline:

- Initial Sketches
- Selected Interface
- **Low-Fi Prototype:**
 - **Construction**
 - **Task Flows**
- Testing Methodology

Low-fi prototype construction

- Building it:

- We sketched a prototype using Procreate and took screenshots of each screen.
- We included the 4 main tasks that we want a teacher to be able to perform.

- Operating it:

- We provided participants with the necessary screens.
- Then, we gave them a task and observed as they tried to accomplish it.



Low-fi prototype: 3 Task flows

Scenario: You are a new 9th grade teacher and it is two weeks into school, you are concerned about getting to know your students especially the more shy students so you can help them learn. You teach 5 periods each with 30 kids in them. Another teacher on campus suggested this app to you because the district uses it so it already has a lot of info.

- a. Simple, moderate, and complex
- b. Complete and clear with use of captions, labels, transitions, and annotations as required (can use a different color if helpful)

Low-fi prototype: 4 Task flows

Scenario:

You are a new 9th grade teacher.

It is two weeks into school.

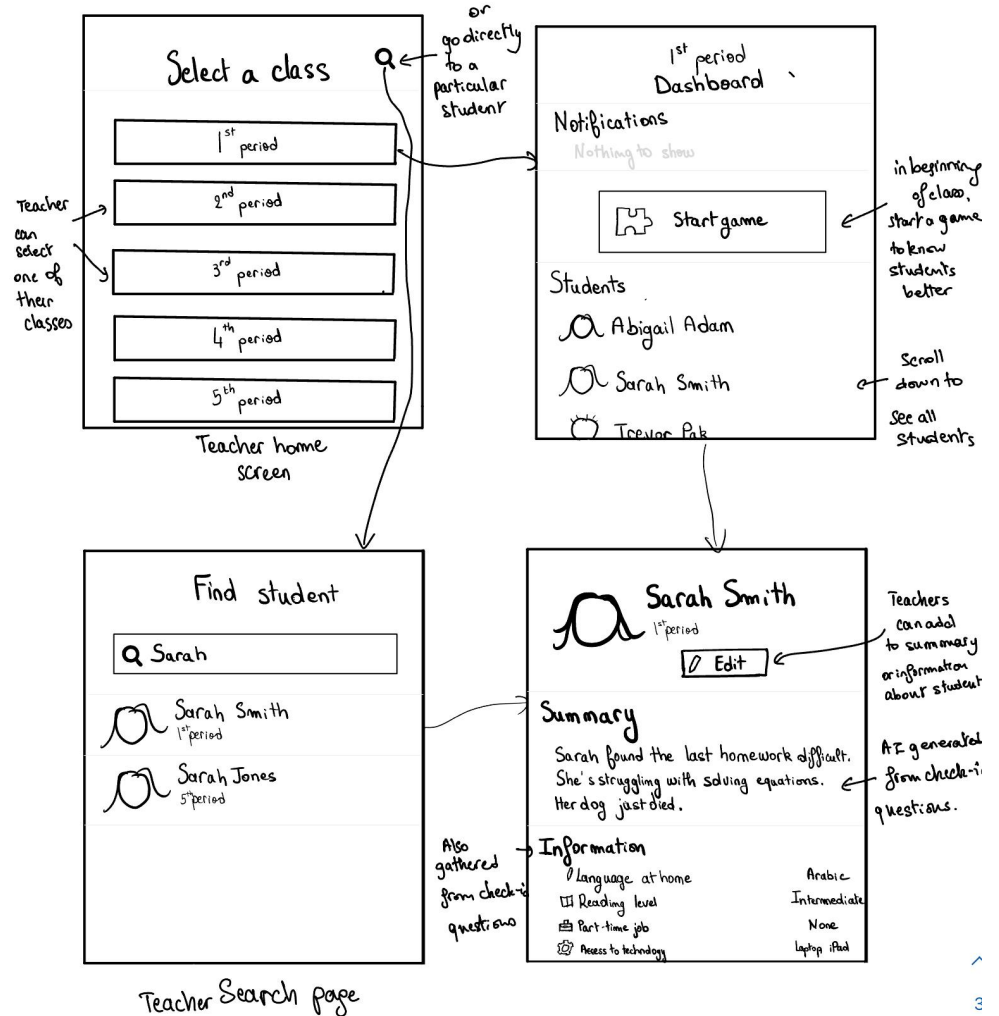
You are concerned about getting to know your students, **especially** the more shy students.

You want to help your students learn.

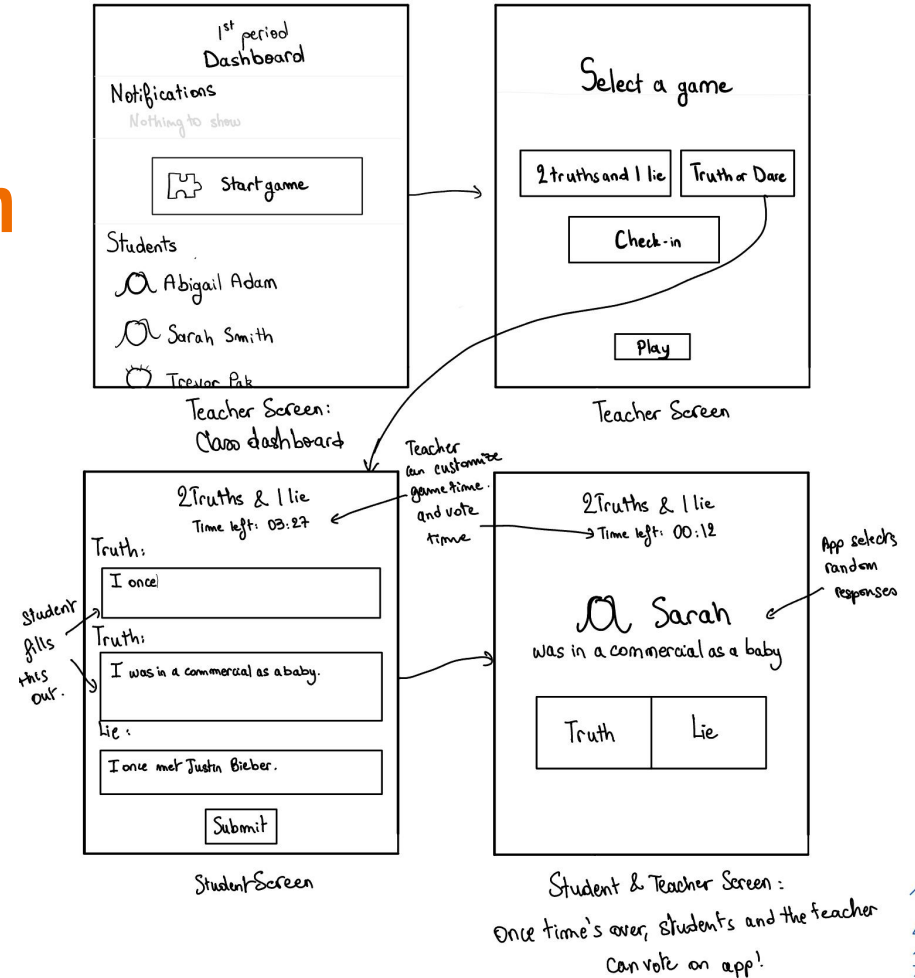
You teach 5 periods each with 30 kids in them.

Another teacher on campus **suggested this app to you** because the district uses it so it already has a lot of info.

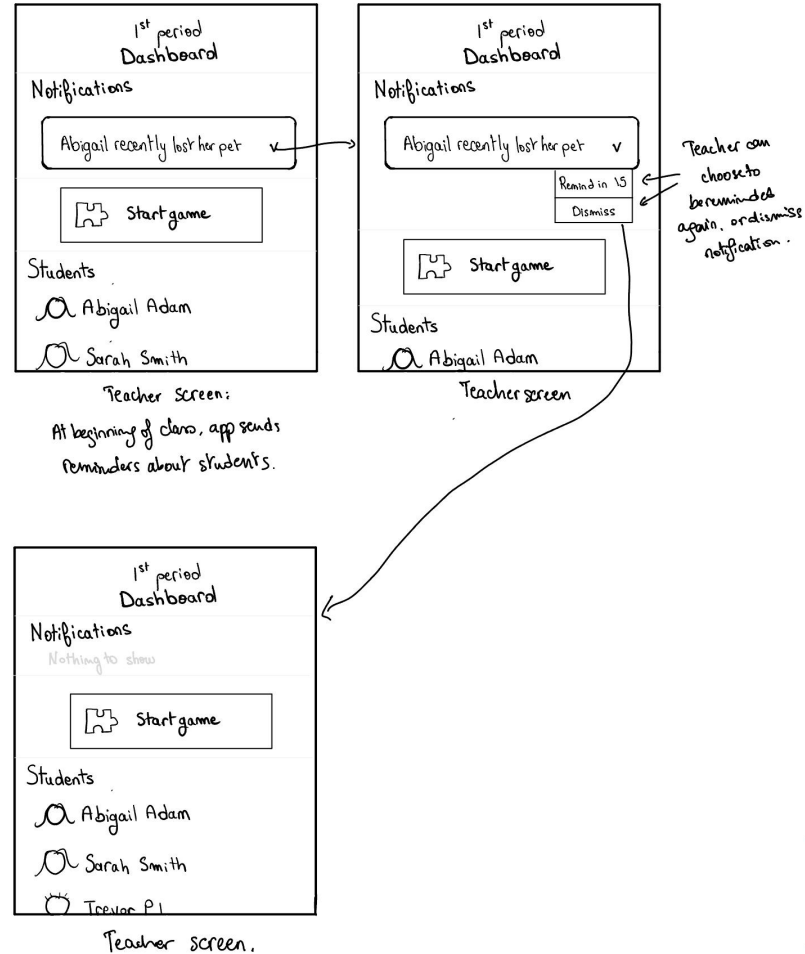
Simple: Teacher views student information



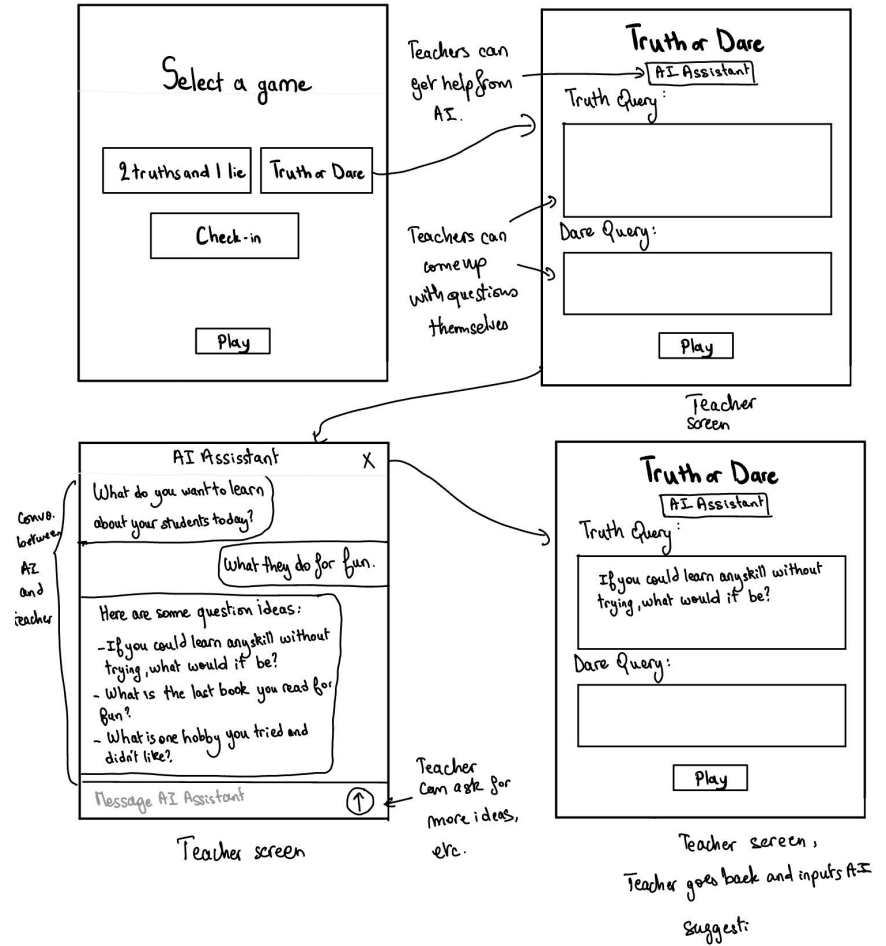
Simple: Teacher runs a game to collect student information



Moderate: Teacher receives AI generated alerts about students



Complex: Teacher codesigns a game with an AI chat bot



Outline:

- Initial Sketches
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- Low-Fi Prototype:
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- **Testing**

Testing methodology

Participants:

- Kathleen, a singing teacher
- Rose, a teaching assistant
- Derek, Math and computer science teacher
- Mary, English teacher.
- Recruitment and compensation:
 - All recruited in person/over email, not compensated.

Environment:

- Tested in person, environment with clear lighting.
- Gave them the screens, and described their role + task.

Goals:

- **Discoverable:** Is the order of the screens logical?
- **Efficient:** Is it easy and quick enough to use in a class setting?
- **Intuitive:** Do the tasks make sense?

Testing results: Kathleen

- Kathleen was **looking for a “Back” button frequently**
- Kathleen was able to **launch a game of Two Truth One Lie with ease** and little confusion on what to click on and what things mean.
- Kathleen found the button “Remind in 15” useles.
- Kathleen was a little confused about how the notifications work: **“Is the info from the notification collected from the game I just played? If so, why am I seeing a notification about it later on?”**
- Kathleen pointed out a good problem - **if “custom game” is offline, how does the database get updated? The teacher manually type new information in for each student?**

Testing results: Rose

- **Was a bit confused as to when the notifications were generated.**
“Would this be right after the game? After class? ”
- Found the UI navigable and was able to accomplish the tasks.

Testing results: Derek

Quotes:

- **“Why on earth would I want to be reminded in 15 minutes?”**
- **“Heaven knows I’m not coming up with dares for 9th graders!”**
- “Why would I click on Abigail for anything other than to see the notification?”

Other:

- **Had trouble trusting the source of the summary info.**
- Pointed out that academic statements need to have labels of what class they pertain to
- **Didn’t initially see the search button, or recognize the ability to scroll**

Testing results: Mary

- **Needed clarity on how they help them understand students better and how to use the information effectively.**
- Would appreciate more direct ways to search or sort students, especially when looking for specific personal details.
- “If I’m using this in class, I need it to be quick and actionable. How do these personal details translate to teaching strategies?”
- **UI was generally navigable.** No new insights beyond back buttons and scroll indicators

Results Overview: Process and Bottom Line Data

- **Navigation Issues:** Users consistently seek clearer navigation cues, suggesting a disconnect between the platform's design and user expectations.
- **Feature Evaluation:** While primary features like game launching are well-received, secondary features such as reminders are seen as unnecessary, highlighting a misalignment with user needs.
- **Information Transparency:** There is notable confusion around the relevance and timing of notifications, signaling a need for more intuitive information delivery systems.

Results Overview: Observations and Goals

Other Relevant Observations

- **Offline Functionality Concerns:** questions arise about how the platform handles data updates when offline.
- **Application of Data:** Users express a need for clearer and more direct ways to apply gathered student data to teaching strategies.

Achievement of Usability Goals

- The platform is generally navigable but lacks clear cues that align with user expectations.
- There is a significant need to enhance how information is presented and explained to ensure it is understood and utilized effectively by the users.

Discussion: Implications

- **Navigational Challenges:** The need for clearer navigation cues like a "Back" button suggests that users may struggle with the platform's overall flow.
- **Feature Relevance:** The mixed reception of features such as "Remind in 15" indicates that some elements may not align with the user's actual needs or workflow.
- **Information Clarity:** Confusion over notifications and data updates points to a need for clearer communication and demonstration of data relevance and timing.

Discussion: Design Next Steps

- **Enhance Navigation:** Introduce more intuitive back-navigation options and visible scroll indicators.
- **Streamline Features:** Evaluate the utility of less-used features, considering removal or modification to align more closely with user needs.
- **Improve Information Delivery:** Redesign notification systems to be more timely and relevant, and ensure that all informational outputs are clear and directly useful.

Discussion: What Testing Couldn't Reveal

- **Long-Term Usability:** The tests might not have captured long-term engagement issues or the adaptability of users over time with the platform.
- **Comprehensive Data Usage:** It's unclear how effectively teachers can implement the collected data into varied educational strategies beyond the immediate suggestions provided.
- **Broader User Experience:** The feedback may not fully represent all user groups or contexts, possibly overlooking some nuances in different educational settings or among diverse user demographics.

Appendix

Appendix - Interface Pros and Cons

Mobile App

Pros:

- Most teachers have needed devices
- Larger Screen than wearable
- Accessible while walking around the class
- Capable of multi-media content and interactions with photos, videos, etc.
- Quicker access to sharing on social media

Cons:

- Encourages phone-use in class
- Relatively small screen for data analysis

Wearable

Pros:

- Easy and Quick Alert Viewing
- Accessible while walking around the class
- Avoids visible phone-use in class
- Novelty

Cons:

- Would require additional devices for some teachers
- Smaller Screen than mobile
- Cannot type effectively, so more for passive reception of information: limited interaction with AI to generate games/ask questions about alerts

Baihan's Test

- Baihan tested the prototype on his voice teacher, Kathleen, an experienced singer and teacher who teaches 1 on 1 lessons as well as studio singing classes (10-15 students)
- Kathleen was looking for a "Back" button frequently
- Kathleen was able to launch a game of Two Truth One Lie with ease and little confusion on what to click on and what things mean.
- Kathleen found the button "Remind in 15" useless.
- Kathleen was a little confused about how the notifications work: "Is the info from the notification collected from the game I just played? If so, why am I seeing a notification about it later on?"
- Kathleen pointed out a good problem - if "custom game" is offline, how does the database get updated? The teacher manually type new information in for each student???
- Kathleen in general liked the concept of the app and validated the problem of teachers not knowing students on a personal level.
- She liked the two game ideas we have built in and thinks they are good attendance checks.

Matthew's Test

Test 1- Math & Computer Science Teacher

Insights:

- 4-We need to provide more instruction for new users.
- 3-We need to create a flow that determines what is worth saving and/or alerting on.
- 3-Need for back buttons.

Quotes:

- 3-"Why on earth would I want to be reminded in 15 minutes?"
- 3-"Heaven knows I'm not coming up with dares for 9th graders!"
- 3-"Why would I click on Abigail for anything other than to see the notification?"

Other:

- 2-Had trouble trusting the source of the summary info.
- 1-Pointed out that academic statements need to have labels of what class they pertain to
- 1-"I'm strongly of the belief that all search boxes should be fuzzy find. I'm aware you can't tell right now but still"
- 2-Didn't initially see the search button, or recognize the ability to scroll
- 0-Both Abigail and Sarah's pets died according to the Lo-fi prototype

Jessica's Test

The games are an interesting concept, but teachers need clarity on how they help them understand students better and how to use the information effectively.

Users would appreciate more direct ways to search or sort students, especially when looking for specific personal details.

“If I’m using this in class, I need it to be quick and actionable. How do these personal details translate to teaching strategies?”

UI was generally navigable. No new insights beyond back buttons and scroll indicators

Oumnia's Test

- Rose first asked if the students names would be organized alphabetically: "Would be a pain to have to scroll down each time through 30+ students just to find one."
- "Could I search for a student in the 1st grade dashboard instead of having to go back to the page that has all the dashboards?"
- "What could the AI assistant do?" -> when i compared it to chatgpt it was intuitive to her, however she is younger than most teachers would be.
- "How's this information processed and when am i receiving it back?"
- She didn't see the point of having to be reminded in 15 minutes, instead wants to be able to save the notifications otherwise she'll forget.

