Test Plan and Discussion Guide

**Goals**
The goal of this usability study is to gather insight about users’ experience with and impressions of our prototype, which included the flows of viewing student profiles, analyzing lesson materials, and sending feedback and progress reports. Specifically, we wanted to get feedback that can help us test if the overall website is easy to use, improve navigation through the feedback form, and make the UI of the content analyzer more intuitive.

**Methodology**
We conducted the usability study over Zoom, and our medium-fi prototype was made in Figma. We sent the link to our Figma prototype to our participants. Participants shared their screen and went through the prompts to test our tasks. We asked questions and also had participants talk aloud as they went through the process.

**Target Participants**
Our target users are secondary education teachers who teach “mainstream” classes (e.g. science, history, English, and more). These teachers do not have specialized training in ESL but have previously had ESL students in their classroom. Overall, this group consists of non-ESL teachers in secondary education. Our test participants come from this background.

Specifically, we have three participants:
- Tim, a high school science teacher in Boston, MA
- Andy, a high school teacher in San Diego, CA
- Ammar, a tutor for high school ESL students in various subjects

**Recruiting Strategy**
Our recruiting strategy was to use the connections of our contacts to find other people who are in our target participant group.

**Discussion Guide**
1. **Introduction**
   - My name is _________.
   - Today, I want to get your feedback on a prototype of a website that helps equip teachers with academic and cultural resources so that they can support ESL students to their fullest potential.
   - I would love for you to try out this website and share your thoughts about it.
   - As you do the tasks, please talk out loud and share your impressions, thoughts, questions, and points of confusion. There are no right or wrong answers!
   - Based on your feedback, we hope to improve the website and its experience, so feel free to be honest in your comments and criticisms as it will be really helpful for us!
Do you have any questions before we get started?

2. Background
   Let’s get started with some background questions first.
   - In what capacity do you teach or work with ESL students? For how long?
   - What subjects have you taught them?
   - What are the grades/ages of these students?
   - What teaching tools or platforms do you currently use?

Let’s get started with the prototype!
   - I’m going to show you a prototype of a website that helps equip teachers with academic and cultural resources.
   - Note that it is a prototype, so not all actions will work.
   - I will give you some scenarios and things to do.
   - For all the tasks, you are a middle school science teacher (Chloe Thai).

3. Task 1 (Easy): View student profile
   - **Context**
     - You have a new student joining your class tomorrow. The student has moved abroad from the Philippines, where this is his first time in the United States. You want to find more information about him so that you can help him adjust.
   - **Prompt**
     - View the student profile for “Matthew Tan.”
   - **First Impressions**
     - **Homepage**
       - What do you think is going on here?
     - **Topbar**
       - What is happening in the top area?
       - What do you think “Student” does?
       - What do you think “Analyze” does?
     - **Student Cards**
       - What is happening in the main section?
       - How is the information organized?
       - How does it feel
     - What is your overall impression?
     - What would you do next?
   - **Specific Areas**
     - **Class page** (let the subject find this intermediary page on their own)
       - <After navigating to class page> What did that button do?
       - What do you see?
     - **Student profile**
       - What type of information is available?
       - How would you describe the hierarchy/priority of information?
What does “About” contain?
What does “Contacts” contain?
How helpful is this information?
How is this information conveyed?

- **Wrap-Up**
  - What did you think about the Student Profiles?
  - Was the information useful?
  - Was there any information missing?
  - **Transition to Task 3**
    - What do you think “Grades/Progress” does?

4. **Task 2 (Medium):** Analyze teacher’s lesson materials and get suggestions on difficult vocabulary terms and cultural connections.

  **Analyzer**

  - **Context:** You will be giving a lesson on volcanoes for your class tomorrow. There are several ESL students with one recently immigrating from Peru and beginner proficiency in English. You want to ensure that your lesson is accessible to your ESL students by finding difficult vocabulary terms and helping make cultural connections to the materials.

  - **Prompt:** Analyze tomorrow’s lesson on volcanoes to get difficult vocabulary terms and cultural connections.

  - **First Impressions** (Navigating after Task 3)
    - **Analyze**
      - Where would you go to get lesson suggestions?
      - <Before clicking the Analyze button> What do you think will happen?
      - <After successfully clicking Analyze and navigating to the upload process> How was this transition? Does it make sense?

  - **Specific Areas**
    - **Upload**
      - <If they click upload new material> What happened? Does this make sense
      - <If they click upload existing material> How does the Select Existing Material feel?
      - What are the two choices? Do they make sense?
    - **Lesson Suggestions**
      - <After AI algorithm finishes running> What do you see?
      - How is this information conveyed? How does it feel?
      - <Before toggling feature views> What do you think will happen?
      - <After toggling feature views> Did this help you in understanding lesson suggestions?
        - Is this feature useful?

  - **Wrap-Up**
    - How was the process of analyzing a lesson?
How were the suggestions?
- Is there any other content that would be useful?
- What did you think about the layout?

How did you feel? Was it intuitive and understandable?
- Is there a small change that could make a large impact in improvement?

5. Task 3 (Complex): Send feedback and progress report to students and additional contacts (parents and teachers)

- Context
  - Matthew, the new ESL student from the Philippines, has been in your class for one month now, and you want to send some feedback to his teachers and parents.

- Prompt
  - Send Matthew’s feedback and progress report to Teacher #1 and his parent’s email address.

- First Impressions
  - Where would you go to send feedback and progress reports for Matthew?

- Specific Areas
  - Grades/Progress Page
    - What are your overall thoughts about this page?
    - Do the bars make sense and seem useful to you?
    - Are the strengths and areas for improvement sections useful for you?
    - Before clicking the Create Feedback Form button> What do you think will happen?
  - Go ahead and click the button (now at Form Page #1)
    - After successfully clicking Create Feedback Form button> How was this transition?
    - What are your overall thoughts and feelings about this page?
    - Does this page make sense?
    - What confuses you about this page?
    - What is your understanding of the bottom progress bar?
  - Go ahead and move on to the next page (now at Add Custom Feedback Page)
    - What are your overall thoughts and feelings about this page?
    - Does this page make sense?
    - What confuses you about this page?
    - Go ahead and do what you think you should on this page.
  - Now at the Preview Page
    - What are your overall thoughts and feelings about this page?
    - What do you think the point of this page is?
    - Does this page make sense?
    - What confuses you about this page?
    - Go ahead and do what you think you should on this page.
○ **Now at the Send to Page**
  ■ What are your overall thoughts and feelings about this page?
  ■ Does this page make sense?
  ■ What confuses you about this page?
  ■ Go ahead and do what you think you should on this page (send to Teacher #1 and parent’s email).

○ **Now at the Report Sent Page**
  ■ What are your overall thoughts and feelings about this page?
  ■ What confuses you about this page?

● **Wrap-Up**
  ○ How was the overall process of sending feedback and progress?
  ○ How did you feel? Was it intuitive and understandable?
  ○ At what part were you the most confused, if any?
  ○ What can be done to make the feedback form more intuitive/easy to navigate through?
  ○ Was information would you like to see added or removed from the feedback form?

6. **Conclusion Wrap-Up**
   ● What are your overall impressions of the website?
   ● What features or interfaces did you like the most?
   ● What features or interfaces did you like the least?
   ● What were the confusing or unintuitive parts of this process?
   ● Do you think this website is useful for teachers?
   ● What would enable you to use this website for your class?
   ● Any other thoughts/comments you’d like to share?
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Summary of Detailed Results

Participants
3 participants with teaching backgrounds with ESL students:
- Tim, a high school science teacher in Boston, MA
- Andy, a high school teacher in San Diego, CA
- Ammar, a tutor for high school ESL students in various subjects

Summary
- Users liked the clean and simple style of the UI. They found it easy-to-use and easy to navigate.
- **Top bar**: The name “Content Analyzer” for Task 2 was confusing for users, where it did seem to give enough signal.
- **Task 2**: All users liked the current features, but wanted more functionality.
- **Task 3**: All users found the feedback form helpful, but were confused about the order of steps in creating the feedback form.

Homepage
Pros
- **Style**: Users praised the clean and sleek style and UI. They all found it was easy to navigate.
- **Top Bar**: Easy and clear to use.
- **Student Cards**: Simple but has useful information such as name, grade, and photo.

Cons
- **Top Bar**
  - One user was confused by the “Students” tabs and its linked contents.
  - All users did not know the functionality of the “Content Analyzer” section just based on its name.
- **Student Cards**: One user was confused by the “View All” section, where they thought this was all students, not students per class.

Quotes
- Tim: “I like how easy and slick the process is. The interface reminds of Google classroom.”

Recommended Solutions
- Rename “Content Analyzer” to a more instructive name.
- Rename “View All” with “View Students in Class.”
- Add a progress tracker in the top bar to help clarify navigation (e.g. “Students > Profile”)

Task 1 (Simple): View student profile
Pros
- **Navigation**
○ Straightforward navigation process.
○ All users like the hierarchy of information with the side tabs.

● **About**
  ○ All users found that the information was helpful and relevant.

● **Contacts**
  ○ Having teacher information and student schedules was very useful.

**Cons**

● **About**
  ○ All users proposed additional information that could be useful, such additional cultural norms, levels of English proficiency based on states, length of residency in US, and hobbies and interests.
  ○ One user said an “Edit” feature would be helpful to add new information and share with other teachers

● **Contacts**
  ○ One user suggested adding functionality to contact parents, teachers, and groups of contacts through this page.
  ○ One user suggested adding the full names to the page.

**Quotes**

● Tim: “All this information is super useful, but I’d like to edit or have more information. In Massachusetts, there’s specific codes for the level of language proficiency.”
● Ammar: “I like the basic facts, but you can add hobbies/interests and more detailed factors.”

**Recommended Solutions**

● Enabling teachers to edit information on these student profiles.
● Adding additional information in the “About” section.
● Adding functionality to the “Contacts” section so teachers can reach out to relevant contacts.
● Have a section to show class progress

**Task 2 (Medium):** Analyze teacher’s lesson materials and get suggestions on difficult vocabulary terms and cultural connections.

**Pros**

● **Upload:**
  ○ Simple, straightforward, and familiar process.
  ○ Since the users had the volcano prompt, they knew which file to select. One user was a user about the actual upload process.

● **Suggestions:**
  ○ All users were in awe of using AI in analyzing and providing suggestions for the content. They all liked the concept of the features.

**Cons**

● **Navigation:** All users were confused by the header in the top bar on the meaning of “Content Analyzer.” By explaining the task, they were then able to quickly execute.
Functionality: Functionality is limited, where multiple options are not selectable due to priority on task development. One user was curious and wanted to see the file upload process with possible drag and drop options.

Upload: Could display information more compactly.

Suggestions:
- Two users were confused where the AI was actually being used.
- Vocabulary terms—Users thought more information beyond translations could be useful in teaching.
- Two users thought having more suggestions on how to teach the content would be useful.
- Feedback received to make the suggestions stand out in distinction with the reading.

Quotes
- Ammar: “It’s easy-to-understand and makes sense once you enter the interface.”
- Ammar: “I think pulling out the terms is useful, but I also want suggestions on how to teach these terms”
- Andy: “I love the cultural connections, but where is the AI?”

Recommended Solutions
- Adding additional suggestions
  - Add more information beyond translations, such as associated words, definitions, and ways to teach terminology to ESL students.
  - Analyzing the material and output its general reading level in relation to the students’ reading levels. The feature could then give specific suggestions for ESL students, advanced students, and other subgroups to make the content more accessible and engaging.
- Change layout for suggestions.

Task 3 (Complex): Send feedback and progress report to students and additional contacts (parents and teachers)

Pros
- Navigation: Users liked how it was in the student profile to quickly access the data.
- Student Grades:
  - Liked the information and thought it was helpful.
  - Strengths and Weaknesses were very useful sections for teachers.
- Progress Report:
  - Suggested Feedback—Useful to have suggested feedback.
  - Custom Feedback—All users liked the custom feedback option on top of the suggestions.
  - Send—Easy and simple to select.

Cons
- Progress Report:
Custom Feedback Page—One user wanted to be able to look at the previous suggestions and materials, yet the custom feedback option was on its own page.

Send—One user wasn’t sure how the information will be sent and presented, such as sending the report to a phone number.

All users were confused about where the AI came in.

Two users were unclear about the steps in creating the feedback form, like how to select strengths and areas of improvement, when to select recipients, and how to add custom feedback.

Two users were curious about overall class progress

Quotes

- Tim: “Where does the initial feedback come back from?”
- Tim: “I’m curious what are all the categories that match to icons. Can I filter the categories?”
- Ammar: “I want to choose the people I’m sending this to first because that changes what I write and include”
- Andy: “I’d prefer no more than three clicks of steps.”
- Ammar: “It would be cool to see overall class progress and improvement”

Recommended Solutions

- Could provide class statistics
- Allow users to select the AI-generated feedback to put on the form.
- Consolidate the form to clarify its steps.