Introduction

- **Title:AI-Powered Tutor for Online Learning**

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- **Project background**: This research was initiated to address challenges in online learning platforms. Existing platforms often lack essential features such as personalized study plans, actionable feedback, and career preparation tools. This project aims to create a user-centered AI-Powered platform that enhances learning outcomes for students and provides intuitive tools for educators.

- **Research goals**:

❖ **For Users:**
- ➢ Simplify navigation and improve usability to reduce frustration and confusion.
- ➢ Provide actionable feedback and personalized study plans to enhance learning outcomes.
- ➢ Ensure features like dashboards, learning paths, and feedback systems are intuitive and valuable.

❖ **For the Business:**
- ➢ Increase user engagement and retention rates by improving platform usability.
- ➢ Ensure the AI-powered tutor addresses diverse learning needs to broaden market appeal.
- ➢ Identify features with the highest value to users to optimize resource allocation during development.

Research questions

- What are the main challenges students face with current online learning platforms?
- What motivates non-users to explore or avoid online learning platforms?
- How effective are current tools in helping educators track student progress?
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- Which features would enhance the overall user experience for students and teachers?
- What barriers do teachers face when adopting online teaching tools?

Note on Research Questions:

To ensure the research is efficient and targeted, we have designed detailed Google Forms for both students and educators. These forms are customized for participants who either use or do not use online learning platforms. This approach helps us gather specific insights from diverse groups without overwhelming them during live sessions.
By focusing live sessions on key exploratory questions, we aim to supplement the comprehensive data collected through the Google Forms. This strategy balances qualitative depth with quantitative breadth.

Research Setup and Guidelines

Pre-Study Preparation:

1. **Scenarios:** Define tasks like accessing dashboards, creating learning paths, and using feedback tools.
2. **Screening Questions:**
    - Are you a student or teacher?
    - Do you currently use online learning platforms?
    - What device(s) do you use for online learning?
3. **Pilot Tests:** Conduct 20-30 minute test sessions to ensure clarity and address issues with the setup before the main research.

Research Questions Form Links:

- **Students:** https://forms.gle/ZfRRALWGTP1L1WTv6
- **Teachers:** https://forms.gle/gKb18t7THqd9vuqF9

Key Performance Indicators (KPIs)

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- Task completion rates (e.g., navigating dashboards, creating learning paths).
- Time spent on tasks (e.g., finding resources, accessing feedback).
- Drop-off rates during usability testing.
- System Usability Scale (SUS) scores.

- Conversion rates for non-users trying the platform.

Methodology

- **Data Collection Methods**

  For this project, we propose using a combination of remote moderated research, unmoderated usability testing, and generative research. These methods ensure a balance between collecting qualitative and quantitative data while addressing challenges in conducting research primarily online. If in-person research is possible, campus-based surveys and quick usability feedback can be used to gather additional insights.

Primary Methods:

1. **Remote Moderated Research:**
   - **Why this method?** Usability testing via platforms like Google Meet or Zoom allows for real-time observation and guidance, providing immediate insights into user challenges.
   - **Process:** Researchers guide participants through specific tasks, observing behaviors and addressing usability issues on the spot
2. **Unmoderated Usability Testing:**
   - **Why this method?** Platforms like Maze or UserTesting enable independent task completion, capturing authentic user interactions and collecting quantitative data efficiently.
   - **Process:** Participants complete predefined tasks independently, with metrics such as task completion rates and time-on-task captured for analysis.
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3. **Generative Research:**
   - **Why this method?** Interviews and daily experience logs offer deep insights into user frustrations, motivations, and behaviors, which are critical for shaping design decisions.
   - **Process:** Conduct open-ended interviews and request participants to log their daily interactions with learning tools to identify recurring challenges.

Secondary Methods (if possible):

- **In-Person Research:** Short surveys or interviews conducted on campus to gather feedback from university students and teachers, allowing for contextual observations and additional insights.

Data Analysis Methods

- **Qualitative Analysis:**
  - Thematic analysis of interview responses and experience logs to identify patterns and themes.

- **Quantitative Analysis:**
  - Metrics such as task success rates, time-on-task, and user error rates analyzed to identify usability bottlenecks.

Participants

Characteristics:

1. **Students:**
   - **Age: 18-30 years.**
   - **Usage: Active users and non-users of online learning platforms.**
   - **Geographic Location: University and college students globally.**
2. **Teachers:**
   - **Age: 25-50 years.**
   - **Usage: Educators using online platforms or traditional classroom methods.**
   - **Geographic Location: Global educators.**

Sample Size:

- **Total: 30-50 participants (students and teachers).**

Why These Participants?

1. Relevance to the Problem: These participants represent the core users of online learning platforms, ensuring their feedback directly informs platform design.
2. Diversity: Including students and educators ensures a balanced perspective from both users and content creators.
3. Real-World Insights: A mix of active users and non-users allows the study to address both usability and adoption challenges.

Script

Introduction

1. "Thank you for joining this session. Today, we'll explore your experience with online learning platforms to identify areas for improvement."
2. "There are no right or wrong answers; your honest feedback is valuable and will help improve the platform."

3. "Do you have any questions before we begin?

General Questions

1. What is your biggest challenge in teaching,whether online or traditional?
2. If we were to design an AI_powered Tutor platform, what would you prioritize as the most essential feature?
3. What are your thoughts or experiences with online learning platforms? Please share any challenges, preferences, or reasons for using or not using them.

Task-Specific Questions

1. Before Starting a Task:
    - "What are your initial impressions of the interface?"
    - "What do you expect to find on this screen?"
2. During the Task:
    - "Can you walk me through how you would complete this task?"
    - "How easy or difficult is it to navigate this feature?"
3. After Completing the Task:
    - "Was the task easier or harder than you expected? Why?"
    - "What would make this process smoother for you?"

Closing Questions

1. "Do you have any suggestions for improving the platform based on your experience today?"
2. "Is there anything else you'd like to share that we haven't covered?"
3. "Thank you for your time and valuable insights."