Iteration 1

Section 1: Suggestions

1. **What features would you like to see in an English reading question-generating tool?** *(Check all that apply)*
   - o Adaptive difficulty levels based on student proficiency
   - o Diverse question types (e.g., multiple-choice, fill-in-the-blank, short answer)
   - o Integration of multimedia (e.g., images, audio) for context
   - o Ability to generate questions from user-uploaded texts
   - o Vocabulary and grammar analysis for targeted learning
   - o Other: _____

2. **What is your biggest suggestion for improving existing question-generating tools?** *(Select one)*
   - o Improve the naturalness and relevance of generated questions
   - o Allow customization of question difficulty and focus areas (e.g., grammar, inference, vocabulary)
   - o Provide explanations or answer keys for generated questions
   - o Other: _____

3. **Would you like the tool to support other question types (e.g., listening, writing)?** *(Select one)*
   - o Yes, especially listening and speaking questions
   - o Only reading comprehension is sufficient
   - o Maybe, if it doesn't complicate the tool

Section 2: Usage Frequency

4. **How many times per week do you need to prepare reading comprehension questions?** *(Select one)*
   - o 1-2 times per week
   - o 3-5 times per week
   - o Daily or almost daily

5. **How much time do you typically spend preparing questions each time?** *(Select one)*
   - o 30 minutes to 1 hour
   - o 1-2 hours
   - o More than 2 hours

6. **Would you be willing to use an AI tool to assist in question generation?** *(Select one)*
   - o Yes, if it saves time and improves quality
   - o Maybe, depending on the tool's reliability
   - o No, prefer manual creation
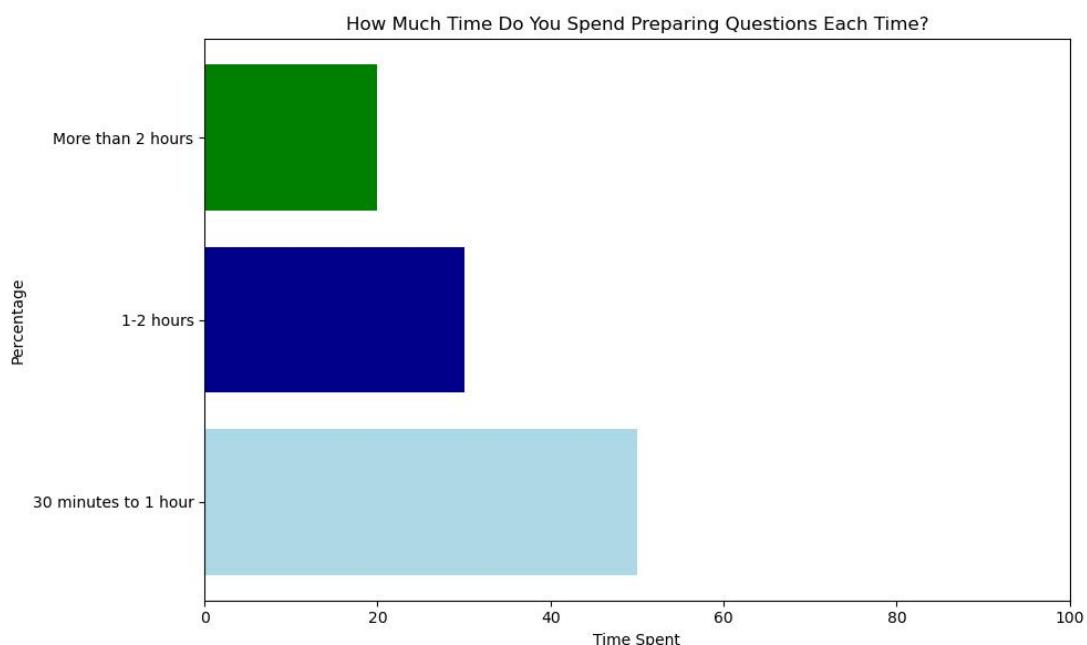
Section 3: Common Pain Points

7. **What is the biggest challenge you face when preparing questions?** *(Select one)*
   - o Lack of time to create high-quality questions
   - o Difficulty matching questions to student levels
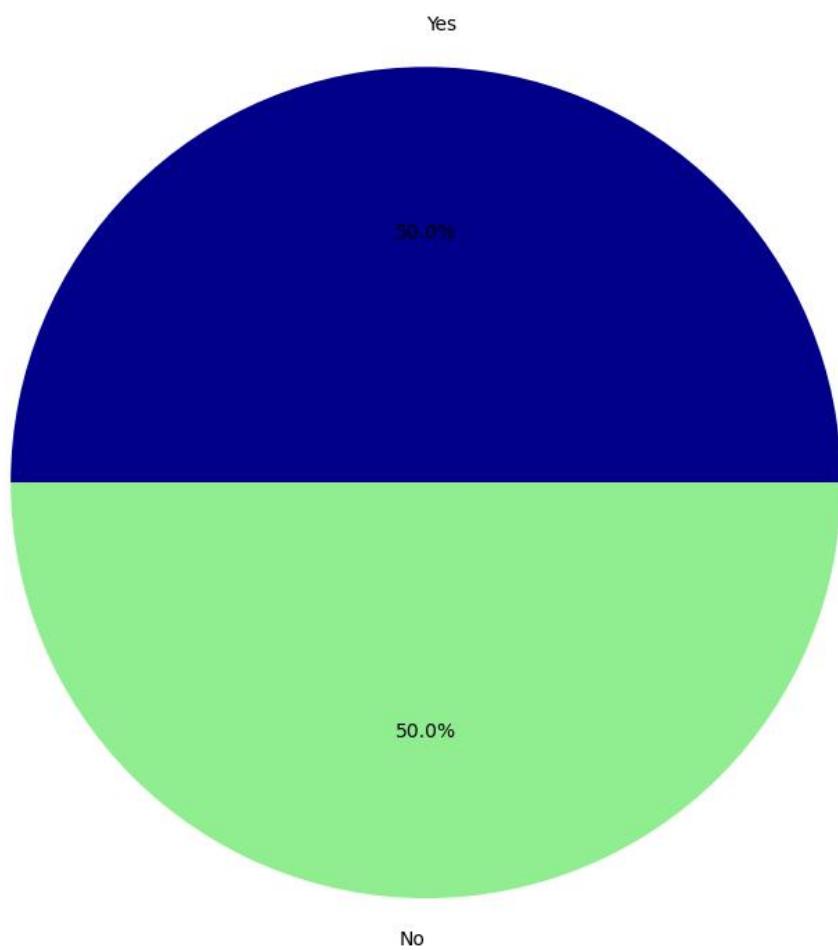
- o Insufficient resources or materials
- o Repetitive or low-quality questions from existing tools
- o Other: _____

8. **Do you find existing question resources inadequate for teaching needs?** *(Select one)*
   - o Yes, they lack variety or depth
   - o Sometimes, depending on the topic
   - o No, they are sufficient

9. **Have you encountered issues with question difficulty not matching student levels?** *(Select one)*
   - o Yes, often too easy or too hard
   - o Occasionally
   - o No, difficulty is usually appropriate

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Section 4: Experience with Similar Tools
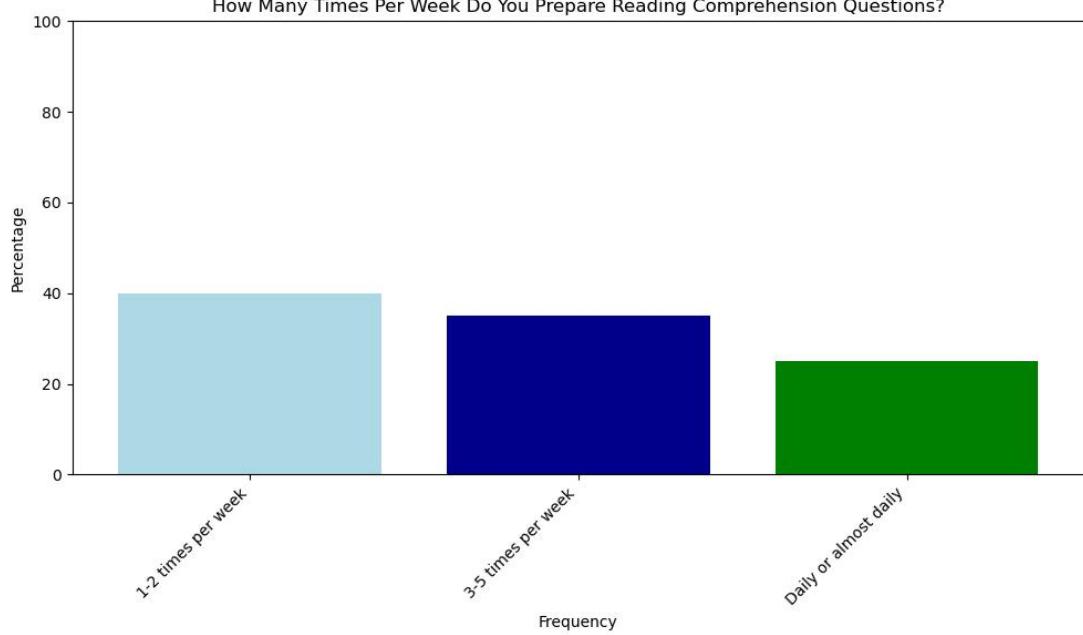
10. **Have you used similar question-generating tools? If yes, please list the tools.**
    - o Yes (Examples: _____)
    - o No

11. **Were you satisfied with the tools you used? If not, what were the main reasons?** *(Select one)*
    - o Satisfied but wanted more customization
    - o Dissatisfied due to repetitive or irrelevant questions
    - o Found the tools too complex or time-consuming
    - o Very satisfied with no major complaints

12. **Would you be willing to pay for a high-quality question-generating tool?** *(Select one)*
    - o Yes, if it significantly improves efficiency and quality
    - o Maybe, depending on the price and features
   - o No, prefer free tools

How Much Time Do You Spend Preparing Questions Each Time?

Have You Used Similar Question-Generating Tools?

Yes

50.0%

50.0%

No
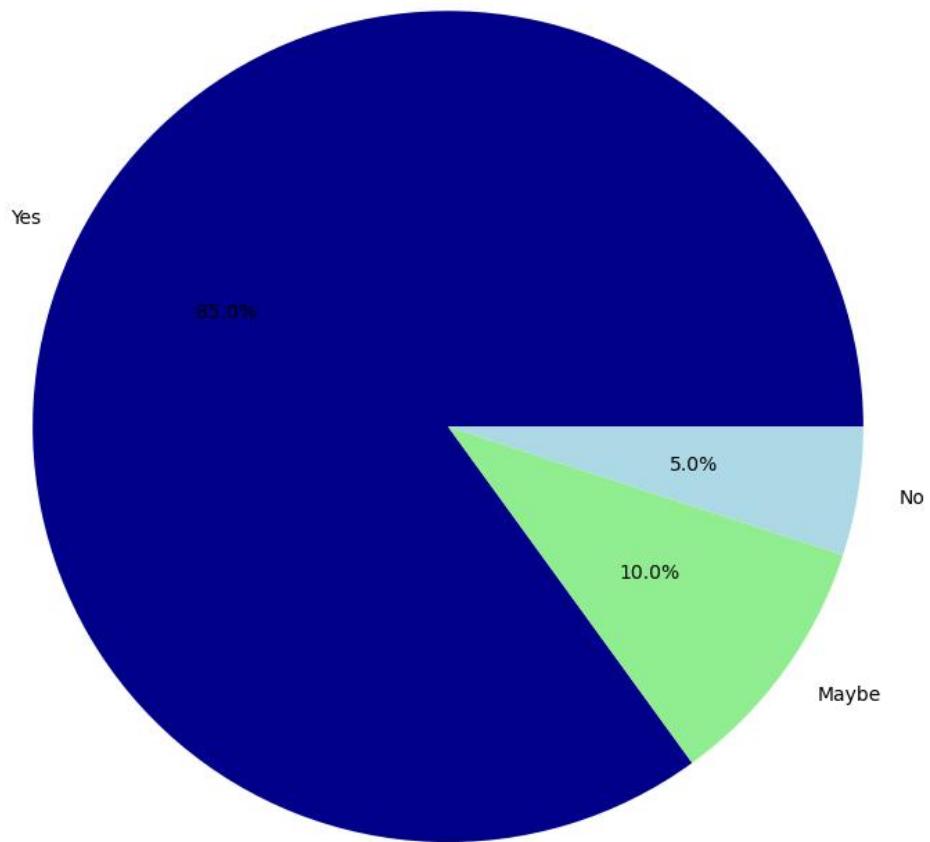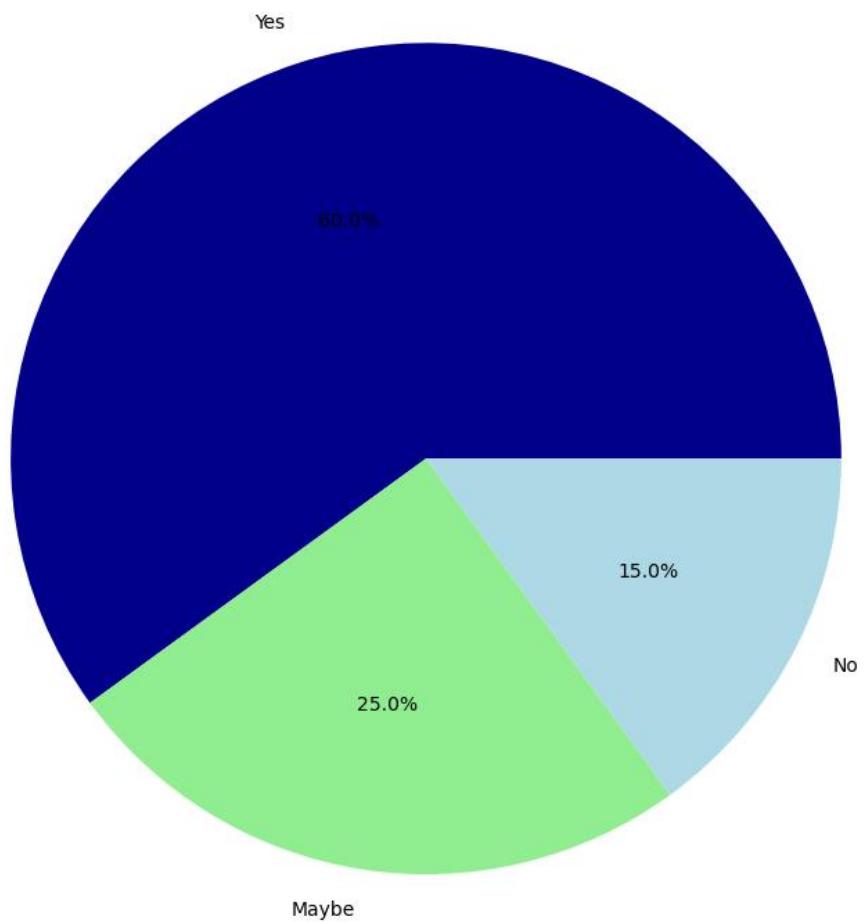
How Many Times Per Week Do You Prepare Reading Comprehension Questions?

Percentage

| Frequency	
1-2 times per week	40
3-5 times per week	35
Daily or almost daily	25
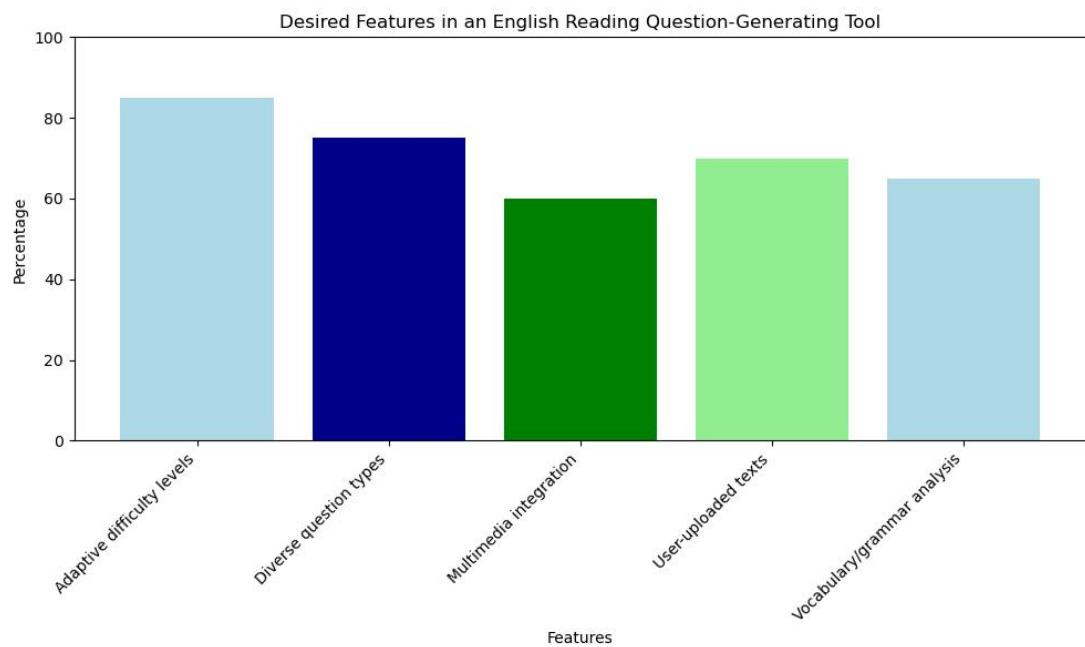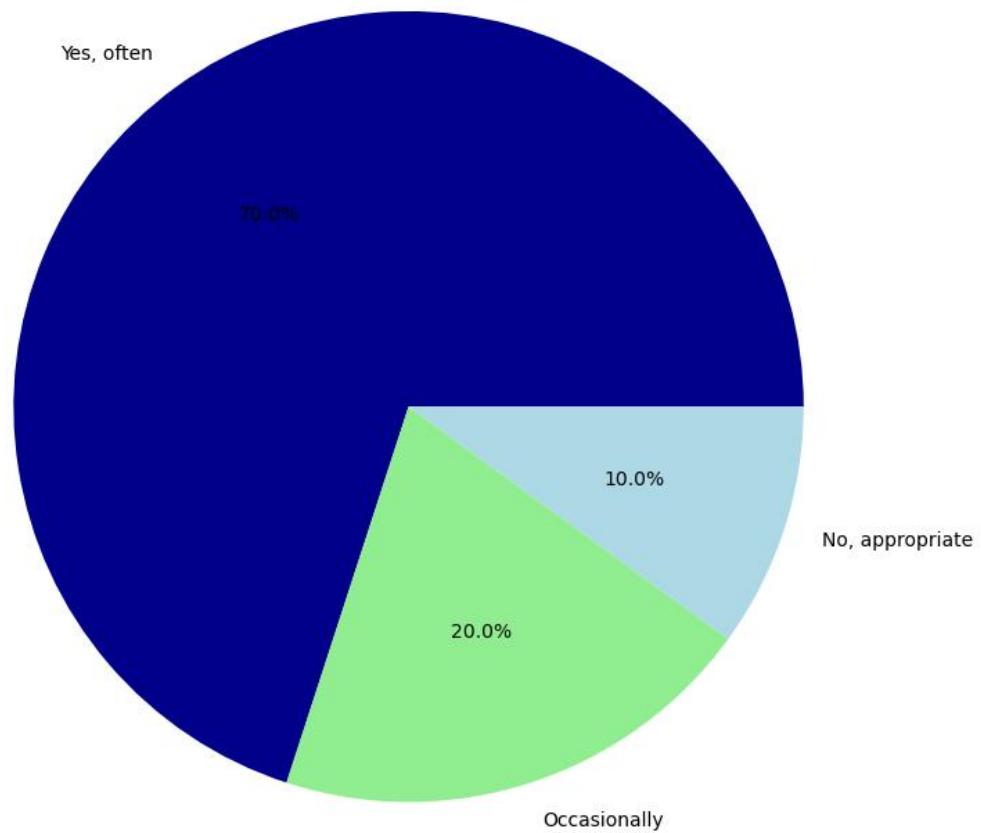
# Would You Be Willing to Use an AI Tool for Question Generation?

Yes
85.0%

No
5.0%

Maybe
10.0%

Would You Be Willing to Pay for a High-Quality Question-Generating Tool?

Yes — 60.0%

Maybe — 25.0%

No — 15.0%
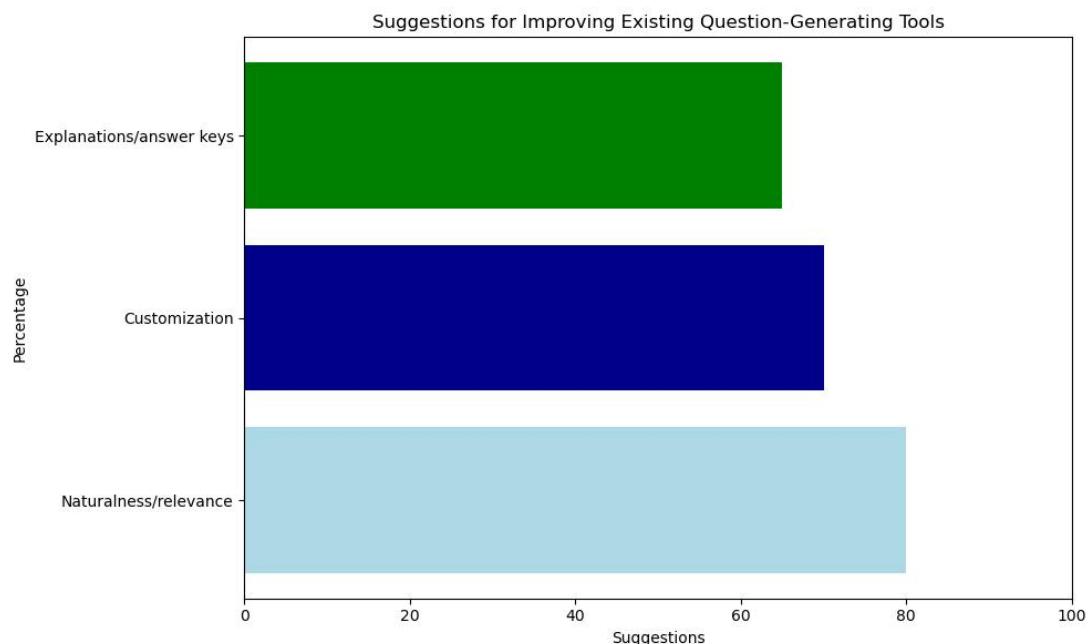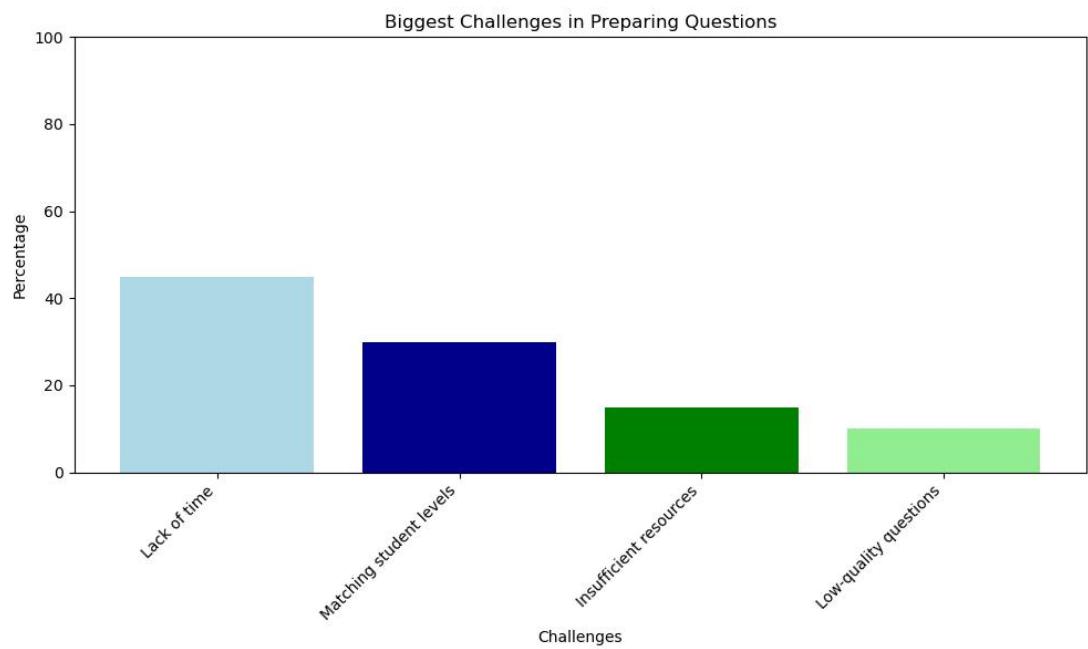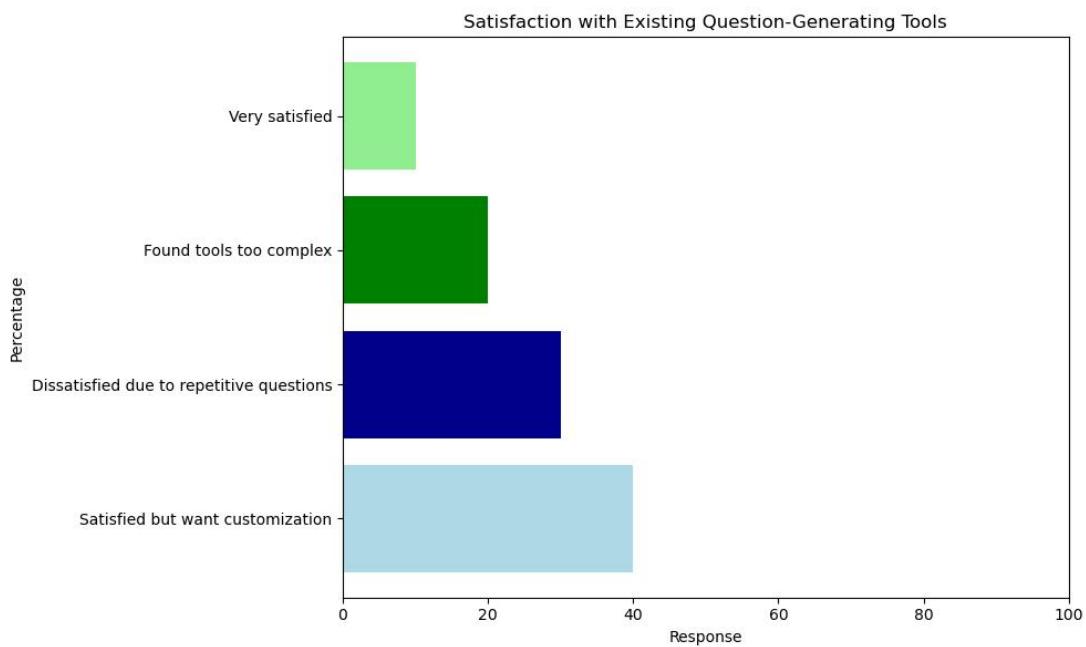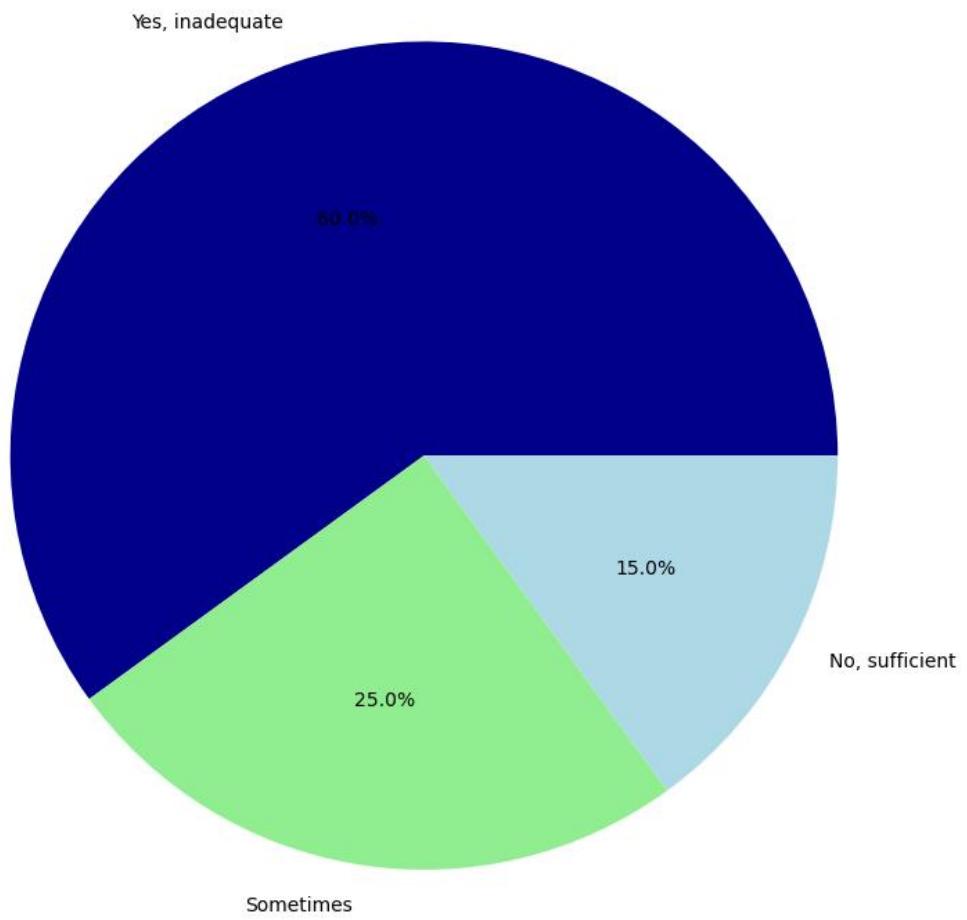
Do You Encounter Issues with Question Difficulty Matching Student Levels?

Yes, often 70.0%
No, appropriate 10.0%
Occasionally 20.0%

Desired Features in an English Reading Question-Generating Tool

Features: Adaptive difficulty levels, Diverse question types, Multimedia integration, User-uploaded texts, Vocabulary/grammar analysis

Biggest Challenges in Preparing Questions

Suggestions for Improving Existing Question-Generating Tools

Satisfaction with Existing Question-Generating Tools

Are Existing Question Resources Adequate for Teaching Needs?

We distributed **Questionnaire** to 30 English teachers in three rounds **(Offer a short version or a long version).** The most crucial finding was that most teachers believed the existing question - creation resources were insufficient and time - consuming. When asked about the functions they most expected from a question creation software, they mainly chose the ability to set different difficulty levels and various question types. Moreover, most teachers indicated that they would be willing to use AI to generate reading questions if the generated reading materials were accurate. Additionally, the vast majority of teachers had used similar generation software to create composition questions.

Iteration 2

1. Software Accessibility Feedback

(Check all that apply)

What accessibility improvements would you like to see?
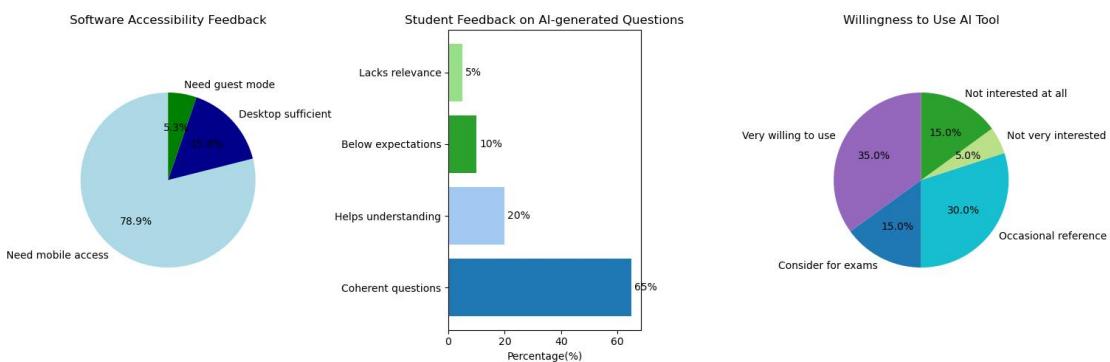
□ Need mobile access

□ Need guest mode

□ Desktop version is sufficient

□ Better navigation/interface

□ Other: _____

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2. Student Feedback on AI-Generated Questions

(Check all that apply)

How would you rate our AI-generated questions?

□ Lacks relevance to curriculum

□ Below expectations in quality

□ Helps student understanding

□ Questions are coherent and logical

□ Other: _____

Then we conducted a second questionnaire survey. Half of the respondents expressed their willingness to use our products based on this draft. We decided to develop a mobile application instead of a web - based version, as it is more convenient for teachers to use. In addition, we surveyed students' daily use of AI for question creation, and most students thought that the questions generated by AI were well - organized. Therefore, we designed an application with three interactive pages **referred from User journey map,** but it lacked corresponding functions at that time.

Iteration 3

1. Core Feature Needs

Which additional features would you find most useful?

□ Bookmarking feature

□ Browsing history tracker

□ Print/export function

□ Recommended/popular content

□ Other: _____

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2. Bookmarking Feature Improvements

(Select only one)

How should we enhance the bookmarking feature?

◯ Add custom tagging

◯ Enable priority setting

◯ Include expiration reminders

◯ Other: _____

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3. Browsing History Preferences

(Select only one)

Preferred history retention period:
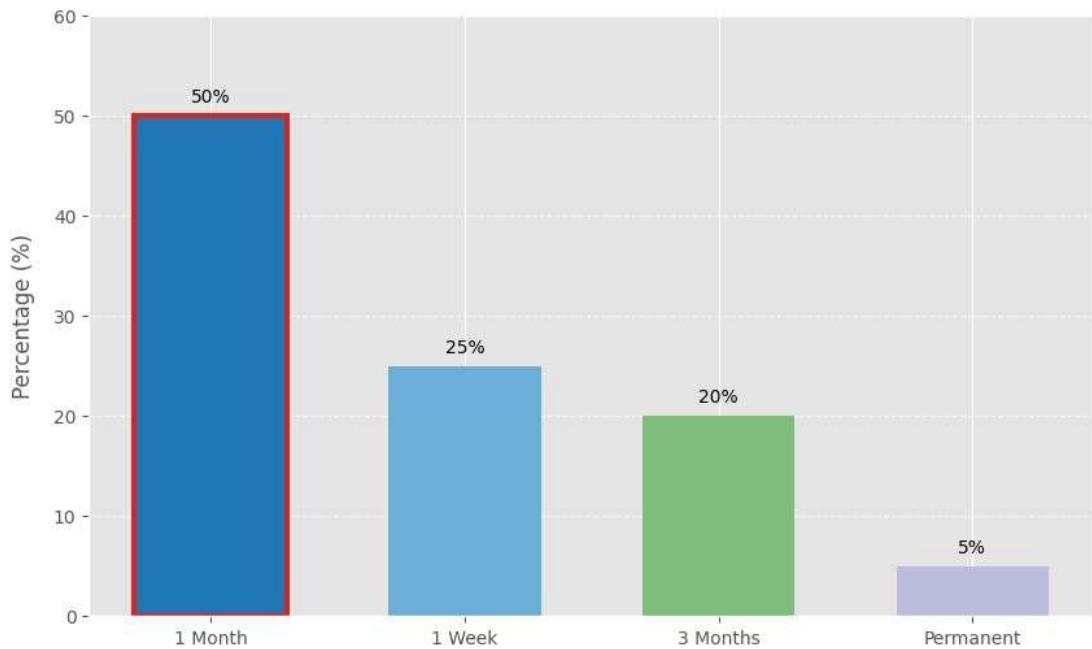
◯ Last 7 days

◯ Last 30 days

◯ Last 90 days

◯ Keep indefinitely

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4. Content Recommendation Criteria
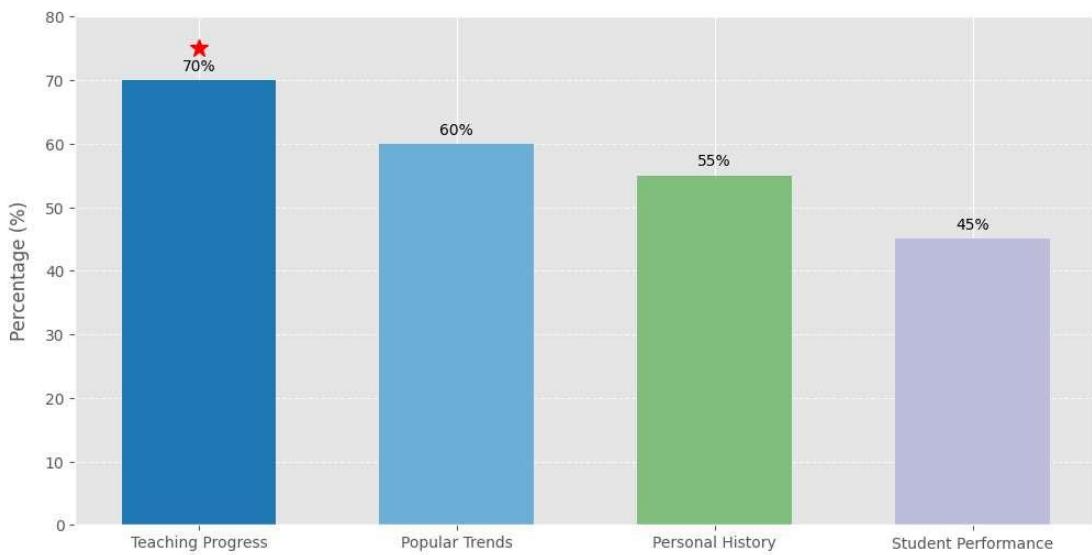
What factors should influence recommendations?

□ Personal browsing history

□ Popular trends among educators

□ Class average performance

□ Alignment with teaching schedule

□ Other: _____
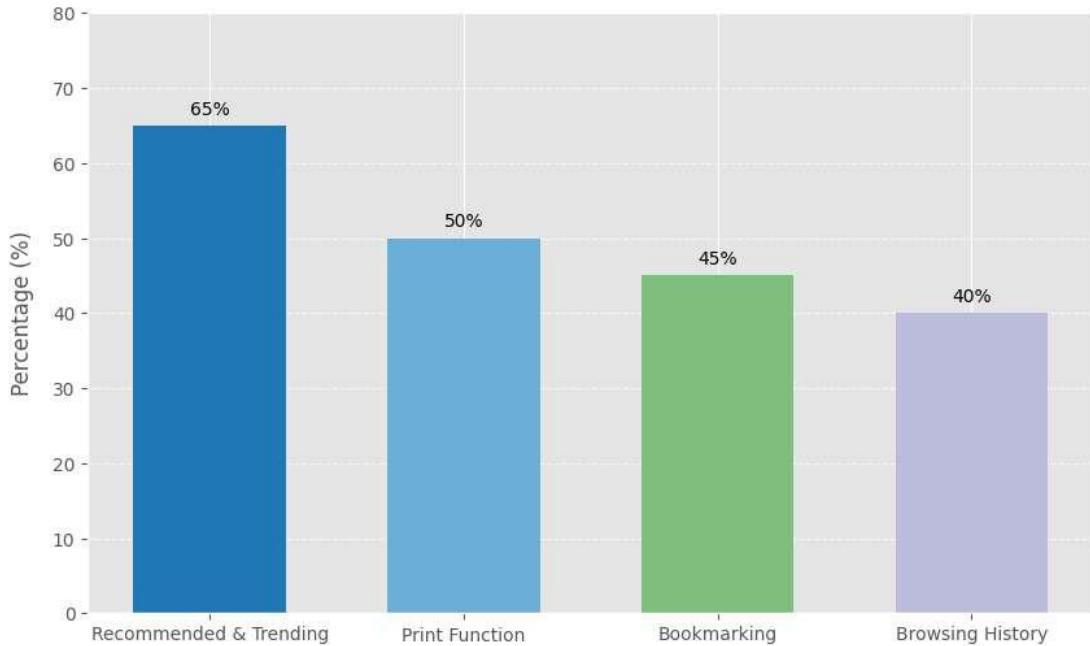
History Retention Preferences

1 Month	1 Week	3 Months	Permanent
50%	25%	20%	5%

Content Recommendation Criteria

Teaching Progress	Popular Trends	Personal History	Student Performance
70%	60%	55%	45%
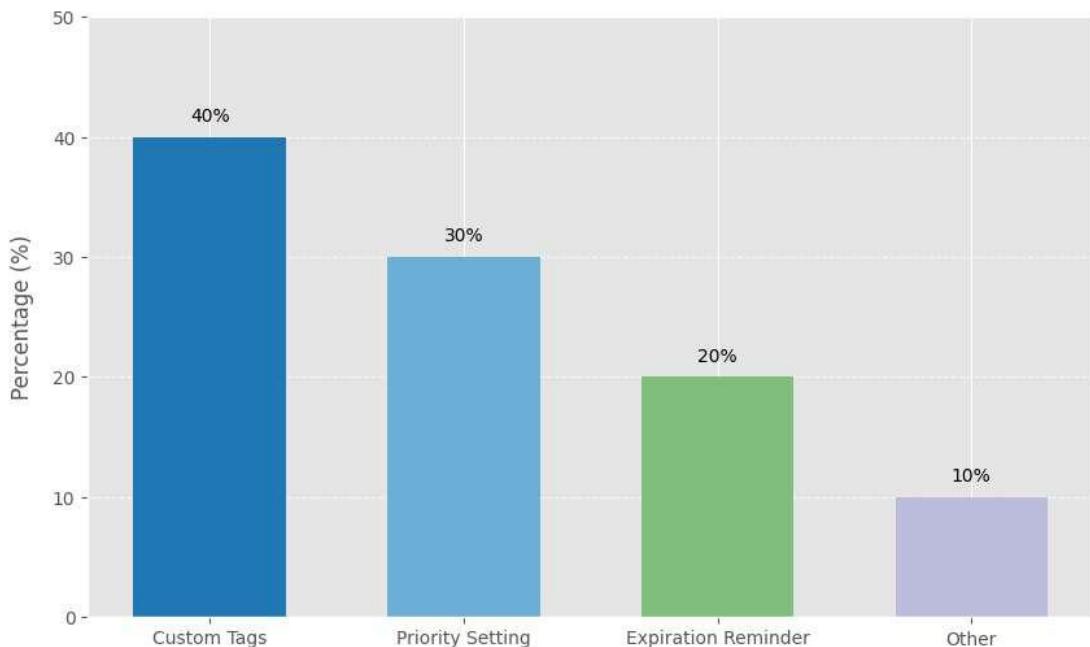
Most Requested Additional Features

Bookmark Feature Optimization

In the third iteration, through the questionnaire survey, we found that implementing functions such as printing, recommendation, favorites, and viewing history records were of the greatest importance. **We used Modao for the actual design, referring to the "My" page of Xiaohongshu, the interaction design of DeepSeek, the page design of Doubao, and the bookshelf design of Mint Reading., which shows Visibility , feedback, Constraints, Consistency(gray and white)**