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LEARN4ALL: AI-POWERED MULTILINGUAL LEARNING PLATFORM

Computer Science

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ABSTRACT

The increasing use of digital learning platforms has created a growing demand for effective and accessible educational solutions. However, most existing systems present content in complex and technical language, making it difficult for many learners to understand. This paper proposes Learn4All, an AI-based intelligent learning system designed to improve learner understanding and engagement. The system uses Natural Language Processing (NLP) techniques to simplify complex educational content into easy-to-understand text. It also integrates voice narration to support auditory learners and enhance accessibility for users with reading difficulties. In addition, the system provides multilingual support, allowing learners to access content in their preferred language. An interactive quiz module is included to enable self-assessment and improve knowledge retention. The system is implemented using Python-based technologies and processes educational content in various formats. The proposed solution reduces learning complexity, increases engagement, and provides an inclusive learning experience.

KEYWORDS

NLP, Content Simplization, Voice Narration, Multilingual Learning, Quiz Generation, Educational Technology, AI-Based Learning.

INTRODUCTION

The rapid growth of digital learning platforms has increased access to educational content, but much of it remains complex and difficult to understand, especially for beginners and non-native learners. Most systems rely on text-based learning and lack multilingual and audio support, which limits accessibility and reduces engagement.To address this, this paper proposes Learn4All, an AI-based system that uses Natural Language Processing (NLP) to simplify content, along with voice narration, multilingual support, and interactive quizzes to improve understanding and engagement.

Related Works

Existing learning systems mainly focus on content delivery rather than improving understanding, often presenting complex information without effective simplification.

Traditional methods like text summarization reduce length but do not enhance clarity, while multimedia systems lack adaptability. Although advancements in Natural Language Processing (NLP) and voice-based learning have improved accessibility, they are often resource-intensive or not well integrated. These limitations highlight the need for a simple and unified system combining NLP, voice support, and interactive learning.

Proposed System

The proposed system, Learn4All, is designed to provide an intelligent and user-friendly learning experience by integrating multiple features into a single platform.

The system performs the following functions:

- Simplifies complex educational content using NLP
- Converts text into audio using voice narration
- Supports multilingual learning
- Generates quizzes for self-assessment.

Users can upload learning materials such as text, documents, or video transcripts. The system processes the content and provides simplified text, audio output, and quiz questions, enabling learners to understand and engage with the content more effectively.

METHODOLOGY

The system follows a step-by-step process:

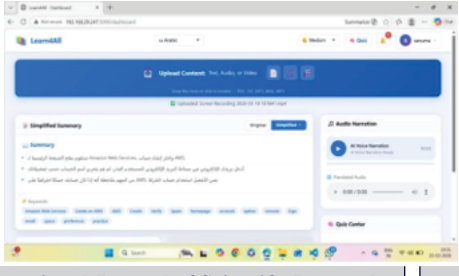
1. **Data Input**
   Users upload educational content such as text, documents, or transcripts.
2. **Data Preprocessing**
   - Convert text to lowercase
   - Remove unnecessary symbols
   - Prepare text for processing
3. **Content Simplification (NLP)**
   - Analyze sentence structure
   - Extract key information
   - Simplify complex sentences
4. **Voice Narration**
   - Convert simplified text into speech
   - Provide audio output
5. **Multilingual Translation**
   - Translate content into the selected language
   - Improve accessibility
6. **Quiz Generation**
   - Generate multiple-choice questions
   - Provide instant feedback
7. **Final Output**
   - Simplified text
   - Audio narration
   - Interactive quiz

RESULTS

The Learn4All system shows effective performance in improving learning outcomes.

- Simplified content improves understanding
- Voice narration increases engagement
- Multilingual support enhances accessibility
- Quiz module improves knowledge retention

The system reduces the difficulty of learning complex topics and provides a more interactive experience.



DISCUSSION

The proposed system effectively addresses key challenges in digital learning. By combining NLP-based simplification with voice narration, it makes content easier to understand. Multilingual support improves accessibility, while the quiz feature encourages active learning and self-evaluation.One limitation is that the accuracy of simplification and translation depends on the underlying NLP models. Future improvements can include more advanced AI techniques to enhance performance.

CONCLUSIONS

Learn4All provides a simple and effective solution for improving digital learning. By integrating content simplification, voice narration, multilingual support, and quizzes, the system enhances both understanding and engagement.The system is lightweight, easy to use, and suitable for real-time educational applications. It helps learners overcome language and complexity barriers, making education more inclusive.Future enhancements can include personalized learning, improved NLP models, and support for more languages.

REFERENCES

[1] https://www.sciencedirect.com [2]https://www.techrxiv.org
[3] M. Alves dos Reis et al., "Textual Simplification with Artificial Intelligence for Students with Reading Difficulties," 2025.
[4] "Research on Text Simplification Method Based on BERT," IEEE Conference Publication, 2023.
[5] A. Phatak, D. W. Savage, R. Ohle, J. Smith, and V. Mago, "Medical Text Simplification Using Reinforcement Learning (TESLEA)," JMIR Medical Informatics, vol. 10, no. 11, 2022.
[6] S. Al-Thanyyan and A. M. Azmi, "Automated Text Simplification: A Survey," ACM Computing Surveys, vol. 54, no. 2, 2022.