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Dynamic Script Generators for Interactive English Practice

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ABSTRACT-

English communication is a critical skill for personal, academic, and professional growth. English plays a crucial part of our daily lives, and the present generation must learn it .Conventional and board ways of learning English frequently fail to address the special needs of individual students.This proposes the development of a DSG(Dynamic Script Generator) a software program that generates personalized and context relevant role play scenarios which helps learners to improve their English communication skills.It has improved their learning capabilities increased productivity and make it more participatory.

Keywords—Adaptive learning technologies, AI Contextual language abilities, Digital interactions, Flexible script creator, English conversation.

ICTIEE Track: Track 4: Information and Communication Technology in Educational and Learning Innovations. Concentrates on using ICT to create innovative learning solutions and improve educational results.

ICTIEE Sub-Track: Language Learning with Technology Enhancement Emphasizes the importance of AI and ICT in enhancing English language instruction and acquisition via tailored resources.

I. INTRODUCTION

We all know that in the current generation learning English is very important as it plays a crucial role in our day to day lives and to make a decent progress in our educational and professional life. From commerce to learning, English facilitates global collaboration across various fields. Today's language learners are not sufficiently supported by current language learning methods – textbooks, inflexible language apps, and pre-record lessons. Learners encounter issues such as insufficient real-world simulation, excessive specialization, and poor feedback systems, leading to their unpreparedness for job interviews, business meetings, or even informal social interactions.

The emergence of AI and NLP technologies has created opportunities for personalized and innovative solutions to the challenges encountered in learning a foreign language. These technologies enable the development of interactive programs that can modify the language instruction process according to the learner's requirements, goals, and proficiency levels. In this study, we introduce a concept for the creation and execution of a software application known as a Dynamic Script Generator (DSG) that produces a precise role-play scenarios for English language students. By leveraging user profiling and AI, DSG creates authentic conversation scripts that align with the learner's goals and provides immediate feedback on grammar, pronunciation, and fluency.

Digital communication has made learning languages easy for everyone around the world. But, the way we talk has changed because of casual words, new phrases and new slangs. This change means we need smart solutions like DSG. DSG helps us use digital communication better without losing how useful English skills are. In today's world, being good at English is important. Even though we've made some progress in teaching languages, most books and apps are too strict and don't fit everyone's needs. They're not great at helping people get ready for real-life talks like interviews or chats.

Background and Related Work

In a world where everyone is connected, knowing how to communicate in English is crucial. Despite efforts to improve language teaching, we've hit a few issues. The issue lies with textbooks and pre-built applications: they're too rigid and seldom cater to different types of learners. What's more, these don't help learners apply their knowledge in real-life situations like interviews or debates. They simply just aren't good enough in preparing users for practical interactions. There is light at the end of the tunnel, thanks to the latest

inventions in AI and Natural Language Processing. They've brought solution that adjusts according to the learner. Techniques like the GPT and BERT models can now generate near human-like texts, paving the way for individualised, self-paced learning—a major breakthrough. Researchers have learned that interactivity and context significantly improve both engagement and retention of skills. However, a lot of existing platforms offer general exercises

rather than activities adapted to specific contexts. Here's where the Dynamic Script Generator (DSG) comes in. It combines user-centered design and artificial intelligence to create custom sounds, real-world language learning activities.

Problem Statement

The main problem statement for our particular project is that in this current generation leaning a new language must be more interactive rather than being boring. Traditional English learning methods often don't meet the needs of individual learners, making it hard to apply language skills in real-life situations. This DSG aims to solve this by offering a personalized, interactive learning approach that adapts to each learner's needs and provides direct feedback and much more interactive. This makes the learning exciting and enjoyable.

Objectives of the Study

- 1. Create and build a tool that generates personalized role-playing scripts according to the defined user goals and the contexts provided by the user.
- 2. Enable real-time feedback on grammar, fluency, and pronunciation for better everging of speech.
- 3. Measure the effectiveness of the DSG on learner's self-confidence and their ability to communicate

II. LITERATURE REVIEW

The evolution of Artificial Intelligence (AI), and Natural Language Processing (NLP) technologies has redefined the landscape of language studies, especially the English language. The traditional approaches for teaching, like textbooks, or fixed applications for learning languages do not meet the specific requirements of the learners, especially when they try to recreate actual situations. In this part of the text an overview of studies focused on the AI powered language learning tools, dynamic language generation is given, and the need for tools like the Dynamic Script Generator (DSG) are further discussed.

Limitations of Traditional Language Learning

The traditional language-learning tools, such as textbooks, Textbooks, audio-visual content, and lessons that come in audio format. are the available tools the teachers have from which they can get materials for class instruction activities. These resources, however, have been critiqued for their limited user participatory approaches, as well as their one-size-fits-all approach to different learners. Hsu et al. [1] centers on the failures of designs of traditional language learning systems to include practices in which a contemporary learner would engage in the real world for purposes of acquiring skills to communicate effectively. As a result, learners seem to have a gap between the knowledge they have and its application in practical situations such as job interviews, negotiations, and casual conversations. In addition, it is usually the case that learners are given little or no feedback which is vital for enhancing their adequacy in using the language [2].

Role of AI in Language Learning

Thanks to AI, language learning has become simpler as well as more tailored to the individual. Examples of how it's been used include chatbots, AIbased personal tutors, and AI-led conversation agents. Studies, such as the one done by Li et al., highlight the capacity of AI models like GPT-3 and BERT to generate context-appropriate texts and allow for personal learning opportunities. Such models can design language exercises according to skill level, engage learners in authentic conversations and provide feedback. The power of AI to generate personalised content according to the learner's temperament and needs can significantly boost participation and, in turn, their language proficiency.

Natural Language Processing in Language Generation

Incredible progress in Natural Language Processing (NLP) has made it possible to build more relevant, grammatically correct texts. These achievements have greatly enriched language learning. Moreover, NLP technologies are improving language practice scenarios by being able to analyze and create language just like humans do. Zhao et al. have demonstrated that using NLP tools can create chatbots capable of generating conversations tailored to real-life situations; like flagging down a cab, seeking medical help, and even job interviews. These personalised dialogues enable learners to practice English language in meaningful and practical contexts, thus enhancing fluency and understanding of context whilst boosting their motivation to learn as well.

Personalized Learning Tools

Learning in your own way is what's new in learning languages today. Baker and Frey say that learning systems that change based on what each person needs can really make learning languages different. They can help just for you. These systems look at what you know, how you learn, and how you're doing to make learning and feedback better for you. Wang and others show how using tools that change to fit you can make your language skills better. When learning focuses on just what you need and gives you practice, it can make you more confident and help you speak better. There's also this cool thing called the Dynamic Script Generator. It makes up role-play games that match how well you speak and what you want to get better at talking about.

The Dynamic Script Generator contributes to this field by adapting role-play scenarios to the learner's proficiency level and communication goals. The tool's ability to generate realistic, personalized dialogue based on a learner's goals (e.g., job interviews, customer services, etc.) offers a personalized learning experience. Additionally, the DSG uses real-time feedback strategies that help learners improve their language skills, thus providing an comfortable, adaptive, and self-paced learning environment.

Gaps and Limitations in Current Language Learning Tools

There have been several notable advancements sin the field of AI based and NLP tools. However, there exist certain gaps that fail to address the needs of a language learner. Huang and Chen [8] state that many AI-based language tools cannot offer personalized learning experiences as they tend rely on generic scenarios not the individualized ones.

Though some systems do offer real-time feedback for the learner, they still do not address context-specific corrections that are crucial for a language learner, especially first timers since they need to understand the flow of language in daily communications.

The Dynamic Script Generator (DSG) is the key to bridging this gap as it helps provide personalized, customizable, and real-life based learning. The use of AI and NLP to enhance the DSG not only helps in generating a very needed individualized role-play but also helps in offering real-time feedback that adjusts to the learners needs. The DSG aims to cover these existing gaps and provide a more effective English language learning process.

Methodology

The objective of the study was to understand how dynamically generated scripts can affect the language learning process. For this, a survey-based approach was used. The aim was to understand the learner experiences, needs and preferences with AI based script generators from the data obtained using the survey.

Survey Structure

The survey was carefully designed to gather meaningful insights and included the following sections:

- 1. Demographics: Participants shared their English proficiency level and experience with interactive learning tools.
- 2. Usage Patterns: Questions focused on how often and in what contexts participants used digital language tools.
- Feature Preferences: Participants selected key features they found most useful, such as customizable scenarios, AI-driven responses, and roleplaying elements.
- 4. Learning Outcomes: The survey assessed which areas of language learning (e.g., vocabulary, speaking, grammar) improved the most with dynamic scripts.
- 5. Challenges & Feedback: Open-ended questions allowed users to describe difficulties they faced and suggest improvements.

Data Collection

A survey of 70 participants was taken, each with varied levels of English proficiency. The questionnaire was well structured and consisted of multiplechoice questions, check boxes and open-ended questions that helped understand the varied needs of individual learners and their perspective on the effectiveness of dynamically generated scripts

Participants

The participant pool consisted of English language learners and speakers involving students, teachers and other professionals. This diversity in the respondents has helped gain a better understanding on how much the AI based learning tool are helping further the language learning.

Research Design

- 1. **Survey Distribution:** To improve the accessibility and gain a larger pool of participants, the survey was conducted using Google Forms. It helped understand the learner preferences, benefits and the required improvements in script generators.
- 2. Data Analysis: The collected responses were analyzed using various statistical techniques such as graphs to help identify the trends in the data.

Results and Discussion

A total of 70 participants were gathered and surveyed about their preference of dynamically generated scripts to examine their effectiveness. The results help understand the learner preferences, their expectations, and the advantages of these tools.

Preference for Adaptive Script Generators

The survey shows that 71.4% of respondents prefer a script generator that offers real-time feedback and adjusts to their needs. This not only reflects the need for DSG but also the significance that adaptive language learning and AI based customization of learning techniques.

The results indicate that the ability of AI to dynamically modify information according to the learner performance can help enhance the engagement and learning outcomes.

Preferred Features in Script Generators



The survey helped find the essential features that learners find most helpful:

Role-playing techniques were voted by 28.6% of the respondents, which was found to be the most preferred feature indicating that learners like the interactive and immersive experiences.

Customizable scenarios were also found to be quite popular and were voted by 24.3% of the respondents, suggesting that the learners prefer the aspect of tailoring their learning to their practical needs.

Other factors such as voice integration voted by 14.3% of the respondents, grammatical help by 18.6%, and AI-driven responses 14.3%, indicating that learners want a learning tool that combines automation, feedback, and interactive interaction.

Aspects of English Learning Benefiting from Dynamic Scripts



The survey has given the following results when asked about which areas of English learning are the most enhanced by dynamically generated scripts:

41.4% respondents voted Vocabulary, showcasing the need for DSG to help teach new words that can be integrated in day-to-day communication.

Areas in Grammar and Speaking were voted by 31.4% and 32.9% respondents respectively, this reflects that learners' priorities real-time language development and correction in communication.

Further Pronunciation was voted by 21.4% respondents and listening by 22.9%.

Discussion

From the results, it is significant that dynamically generated scripts for the learning of English language are improving significantly. The learners also show a high preference for adaptive language learning which shows that AI based learning techniques such as customization and correction mechanisms are favored.

In addition, the larger numbers favoring role-playing and custom scenarios proves the need for communicative language teaching principles with interactive and contextual learning experiences.

The data reflects that improvements in existing training methods are likely in the fields of listening and pronunciation along with a vast range of vocabulary that can be used in day-to-day communication.

Impact of Digital Communication on Language

Digital communication is accelerating the use of language in the modern world. It has helped making language learning a simpler job and made learning more accessible. The wide access to platforms such as social media and web conferencing has increased networking on a global scale.

However, certain drawbacks are observed too. The introduction of informal communication is putting a stain on the structured language and for formal communication.

The Dynamic Script Generator also focuses on this aspect and can help in improving the structured language learning along with real-world applications.

Conclusion

The Dynamic Script Generator is a major help in improving the grammar, vocabulary and speaking skills that are acquired during language learning.

The DSG is one of a kind AI based approach for a personalized language learning tool that focuses on real-life based role-play scenarios, real-time feedback and interactive practice.

This study reflects the gaps in existing language learning tools and helps bridge the gap between theoretical learning and practical implementation while making learning more engaging and effective.

The future of the DSG maps expanding linguistic diversity, cultural adaptability, and correction features like adaptive learning, pronunciation support and vocabulary enhancement that support the evolving needs of learners.

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