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Improving Kids English Vocabulary Through Immersive Mobile Games

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Abstract - This paper explores the potential of utilizing immersive games to enhance children's English vocabulary acquisition. In a world increasingly reliant on effective communication in English, developing a robust vocabulary foundation is essential. Traditional language learning methods can often be tedious for children, leading to disengagement and reduced motivation. To address this challenge, this study delves into the innovative use of immersive games as an educational tool.

Immersive games offer a unique opportunity to create an interactive and captivating learning environment that can significantly improve a child's vocabulary retention and usage. This research investigates the effectiveness of various types of immersive games, including virtual reality, augmented reality, and interactive simulations, in engaging children and expanding their English vocabulary. The study also examines the impact of immersive experiences on motivation, engagement, and overall language learning outcomes.

By examining the latest trends in educational game design and language acquisition theories, this paper presents a comprehensive overview of the advantages of using immersive games as a vehicle for vocabulary development in children. It highlights the potential for immersive games to foster a fun and dynamic language learning experience, making it a promising approach for educators and parents seeking to enhance children's English language skills.

The findings of this study provide valuable insights into the design and implementation of immersive games for English vocabulary enhancement in children, shedding light on the significant role these games can play in shaping the future of language education. As technology continues to evolve, harnessing the power of immersive games for educational purposes becomes an exciting avenue for nurturing the linguistic abilities of the younger generation.

***Key Words*:** English Vocabulary, Immersive Games, Language Learning, Education, Child Learning, Educational Technology, Interactive Simulations, Motivation, Engagement, Language Education, Educational Games.

1.INTRODUCTION

This In an era characterized by increasing global connectivity, the ability to communicate proficiently in the English language has transcended the boundaries of being merely a desirable skill; it has evolved into a veritable necessity for children embarking on their academic and professional journeys. The bedrock of effective English language communication lies in the establishment of a robust vocabulary—a linguistic arsenal that not only facilitates clear and nuanced expression but also enables a profound understanding of the language itself. Yet, the conventional methods employed in language learning, often found in school classrooms, textbooks, and rote memorization, frequently fall short in captivating the imagination of young learners. The result is all too familiar: monotony, disengagement, and a waning sense of motivation. The challenge is clear; how can we rekindle the spark of enthusiasm for language acquisition in our children?To tackle this pressing issue, this paper embarks on an exploratory journey into an innovative avenue of pedagogy—leveraging the immersive power of educational games. Immersive games, encompassing a diverse range from virtual reality experiences to interactive simulations and augmented reality applications, hold the promise of redefining the educational landscape. They create dynamic and captivating learning environments, offering children a unique opportunity to embark on a linguistic adventure that transcends the traditional confines of language learning.

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2. LITERATURE SURVEY

A. Mobile Games for Learning English:

The literature underscores the increasing use of computer games in educational settings, transforming pedagogical strategies. Games are recognized as valuable tools for specific learning strategies, content, and knowledge acquisition. They have the potential to increase motivation and improve educational outcomes. Research studies focus on enhancing game design to create more motivating and effective learning tools and environments.

One key assumption is that games are engaging for learners of all ages. Game-based learning is seen as a way to improve learning efficiency, particularly through intrinsic motivation when learning materials are linked to

specific goals, such as winning the game. Games can positively influence attitudes toward learning. Therefore, game-based learning is used to support students in their learning processes, enhancing their intrinsic motivation. New game-based applications offer additional benefits by making the learning process more engaging, enjoyable, and interactive.

B. Educational Mobile Frameworks:

While mobile technologies have advanced significantly, pedagogical developments have sometimes lagged. There is a need for practitioners, including instructional designers and teachers, to effectively incorporate evolving mobile technologies into their teaching methods and instructional materials. Researchers have developed educational mobile frameworks based on principles of persuasive technology. These frameworks provide guidelines for creating educational mobile applications that can enhance learning experiences. Such frameworks have undergone revisions and evaluations by experts to ensure their effectiveness and relevance in educational contexts.These two areas of literature highlight the potential of mobile games for English language learning and the importance of well-designed educational mobile frameworks in creating engaging and effective learning experiences. Combining these insights with the research on immersive games can lead to a comprehensive approach to enhancing children's English vocabulary acquisition

3. SYSTEM ARCHITECTURE

The This simplified system architecture shows the main components of this system, the game engine we are using to make the project is unity game engine which is a very popular game engine among the co-operate game developers and also indie game developers, there is so much to the architecture that we didn't added but this architecture gives the overall structure of the system and the list of the modules that are implemented in the system.

List of modules and functionality:

A. Level Data SO

As per the name of this module this module mainly acts as the database of the system due to the component-based **architecture** of unity game engine, this component holds all the level data that can be modified by the admin, we can make as many levels we desire due to the great extensibility of this module, we developed a very generic level system and we can pass the new levels to the application through updates.

B. Game Manager
This module is the main core of the system as it manages the entire flow of the system and it also acts as bridge between the UI and the Level Data, this module implements the persistent singleton design pattern because it is scene independent and it will manage all the scene and other managers.

C. UI Manager
This module's main function is to manage the UI/UX of the system, this module will enable the relevant canvas of the four modes that we implemented in the application, In Short as the name suggests this will be responsible for all the UI related events of the system, Unity does provide a very easy UI implementation framework for designing the UI of the system.

D. Audio Manager

As per the name of this module it manages all the events related to the Audio and Sound Effects that are included in the system, Audio and Sound Effects play a main role in the games as it improves the user experience so much and it provides an immersive experience.

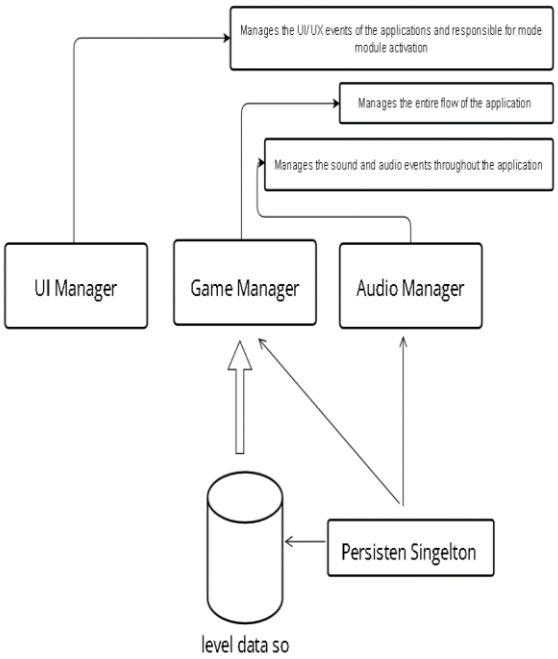

Fig. System Architecture

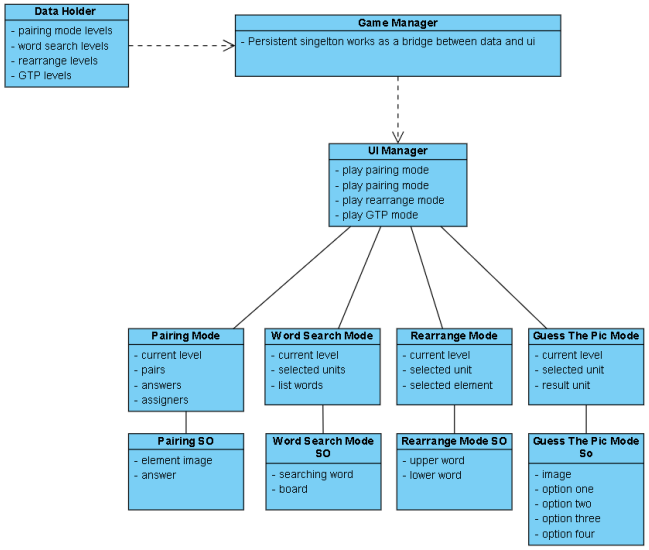

Fig. Class Diagram

4. SOFTWARE AND HARDWARE REQUIRMENT

A. SOFTWARE REQUIRMENT TO DEVELOP:

- Operating System: - Windows 8/10/11
- Programming Language: - C#
- Tools: - Unity Engine, Visual Studio 2022
- Local Data: - Unity Engine Scriptable Objects

B. HARDWARE REQUIREMENT TO DEVELOP:

- Processor: - Intel i5 11th gen or above / AMD Ryzen 5 or above
- Memory: - 8GB or above
- Other peripheral: - None
- Hard Disk: - 500gb

C. SOFTWARE AND HARDWARE TO RUN:

- Android Version: - 9 or above
- Ram: - 2GB or above
- Storage: - 200 MB or above

5. CONCLUSION

In conclusion, this research shines a light on the transformative potential of immersive games in shaping the future of language education. It presents a vision where the journey to English language proficiency becomes an exciting and engaging adventure for children. The paper paves the way for educators, parents, and developers to embrace technology as a tool for enhancing the linguistic abilities of the younger generation, fostering a love for language and learning that will serve them well throughout their lives. As we move forward, it is our hope that this research will inspire further innovation in educational technology, ultimately benefitting the language development and educational journeys of children worldwide

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