USING STEAM TECHNOLOGY IN LANGUAGE LEARNING AS A NEW APPROACH TO LEARNING ENGLISH AS A SECOND LANGUAGE

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Abstract: This article highlights the utilization of STEAM technologies for effective language learning. One of the successful examples is the Duolingo app, which has gained popularity among language learners due to its personalized and engaging approach. By using gamification and machine learning, the app offers a fun way to learn a language regardless of the user's age.

Key words: *STEAM technologies,* robots in classrooms, Chinese language and culture, elementary, Gamification, Language Learning Apps

As technology continues to advance at a rapid pace, it is essential that educators keep up with the latest tools and trends to effectively engage students in the classroom. One area where technology has particularly shown promise is in the teaching of foreign languages. The integration of STEAM (Science, Technology, Engineering, Arts, and Mathematics) technologies has shown to be particularly effective in making foreign language learning more engaging and accessible.

There are many examples of successful implementation of STEAM technologies in language learning. For example, the Duolingo language learning app has become a popular and effective tool for language learners of all ages. The app uses gamification and machine learning to provide personalized language learning experiences that are fun and engaging. The app is available in multiple languages and has over 500 million users worldwide.

Another example is the use of language learning robots in classrooms. The Chinese language-learning robot, iPal, has been used in classrooms in the United States and China to teach Chinese language and culture to elementary students. The robot is designed to interact with students and provide a fun and engaging way to learn Chinese[1].

Virtual reality has also been used to enhance language learning experiences. The University of Central Florida's language lab has developed a

virtual reality program called "Language Lab VR" that allows students to practice language skills in a simulated environment. The program allows students to interact with virtual characters and environments, providing a more immersive and authentic language learning experience.

Using STEAM technologies in teaching foreign languages can help students to develop a deeper understanding of language concepts and engage in active and experiential learning. Here are some examples of how STEAM technologies can be used to teach foreign languages

1. Virtual Reality: Virtual Reality (VR) technology can transport students to different countries and immerse them in different cultural experiences. This can help to enhance language learning by giving students a more immersive and authentic experience of the language they are learning. For example, a student learning Spanish can be transported to a Spanish-speaking country and practice their language skills by interacting with native speakers in a virtual environment.

2. Gamification: Gamification involves using game design elements in non-game contexts to make learning more fun and engaging. In the context of foreign language learning, gamification can be used to create language learning games that help students to develop their language skills while having fun. For example, students can play games that require them to identify different words and phrases in a foreign language or complete language-related challenges [2].

3. Language Learning Apps: There are a wide variety of language learning apps available that use artificial intelligence and machine learning to personalize language learning experiences for individual students. These apps can help students to develop their language skills at their own pace, and can provide instant feedback and corrections to help students improve their language proficiency [3; 4].

4. Language Learning Robots: Language learning robots are interactive devices that can help students to practice their language skills through conversations and interactive exercises. These robots can provide students with a

fun and engaging way to practice speaking and listening skills in a foreign language [5].

5. Language Learning Websites: There are many language learning websites available that provide students with interactive exercises and activities to help them develop their language skills. These websites can be used in conjunction with traditional language learning materials to provide students with a more comprehensive and engaging language learning experience [6].

While STEAM technologies have shown great potential in enhancing language learning experiences, it is important to note that technology should not replace traditional teaching methods, but rather complement them. Language learning still requires a human connection, as language is not just about vocabulary and grammar, but also about culture and communication.

Moreover, it is important to ensure that the technology used is appropriate for the age and language proficiency of the students. For example, younger students may benefit from more interactive and game-based learning, while older students may prefer more challenging and immersive experiences.

Overall, the use of STEAM technologies in teaching foreign languages has shown to be highly effective in enhancing language learning experiences and engaging students in the classroom. By incorporating these technologies into language learning programs, educators can help students to develop their language skills in a fun and interactive way, ultimately helping them to become more proficient in the languages they are learning[7].

Another benefit of using STEAM technologies in language learning is the ability to collaborate with other students and educators around the world. Online platforms and tools can be used to connect students with native speakers and other language learners from different cultures, providing students with a more diverse and authentic language learning experience.

In conclusion, the integration of STEAM technologies in language learning has the potential to enhance language learning experiences and make language

learning more accessible and engaging for students. By combining technology with traditional teaching methods and ensuring accessibility for all students, educators can provide a comprehensive and effective language learning experience that prepares students for success in our globalized world.

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