

Gamification based E Learning Application for Teaching Basic lexis in English

Project Background

Lexis plays an essential role in English vocabulary. It offers a strong basis for a child's English skills. This is a mobile application that aims to teach children lexis through interactive and interesting ways while keeping the children's attention. This application provides a solution to issues that occur when teaching and learning lexicon by teaching three lexicon parts: homophones, synonyms, and antonyms. This research is aimed at improving the preference of students toward lexis, reducing complexity and learning lexis with interesting and simple methods.

Research Problem

There are various issues that occur during the learning and teaching process of lexical lessons that are faced by children, parents, and teachers.

Difficulties that are faced by teachers and parents

- More time is required to prepare teaching components.
 - More time required to teach lexis
 - Lexis is taught to children when they are 8–10 years old. So, the lack of knowledge will affect their English vocabulary learning in the feature.
 - Children do not understand the lexical parts easily.
- Difficulties that are faced by students
- The teaching methods can be boring sometimes.
 - A certain teaching method won't be effective for all children.
 - Certain lexical parts are difficult to understand.
 - It is difficult to memorize lexis words.

Existing Applications Features	English Lexis	Homophones English	Synonym	Opposite, Homophones, Irregular and Synonyms Words	Learn Synonym words for kids	Homophone games	Synonym Antonym Learner	Synonyms Antonyms	Application to be developed
Teaching Homophones, Synonyms and Antonyms	Yes	Only homophones and synonyms	Only synonyms	Yes	Only synonyms	Only homophones	Only synonyms and antonyms	Only synonyms and antonyms	Yes
Gamification based teaching	No	No	No	No	Yes	Yes	No	No	Yes
Story based teaching	No	No	No	No	No	No	Yes	No	Yes
Collaborative learning (2 player based)	No	No	No	No	No	No	No	No	Yes
User friendly interface for kids	No	No	Yes	No	Yes	Yes	No	No	Yes
Activity based training	No	No	No	Yes	No	No	Yes	No	Yes
Level based learning	No	No	No	No	No	No	Yes	No	Yes
Getting the kids answer from speech recognition	No	No	No	No	No	No	No	No	Yes
Asking questions from kid as audio output	No	No	No	No	No	No	No	No	Yes

Solutions

In this research, we introduce a mobile application called "Learn Lexis" for children aged between 8 and 10. This application provides a novel experience for children that drives them to learn more about lexis.

- Identify the knowledge level of children through pre-test activities and refer them to the correct lesson.
- This application delivers knowledge about two lexis parts in an interactive and interesting way in four ways.
- Develop a game with speech recognition that takes children's answers and teaches lexis using story telling.
- Design a collaborative (2-player) game-based environment to learn lexis in the English language.

Objectives

The main objective is to make a mobile application that uses interesting and interactive teaching methods to teach lexis.



Sub objectives

- Identify the knowledge level of children through pre-test activities and refer them to the correct lesson.
- Teach lexis and use speech recognition to get the children's answers while playing a game.
- Basic parts of lexis will be taught using a collaborative game (2 players) by creating enthusiasm and comparatives among children in a stress-free context by designing a collaborative (2 player) game-based environment to learn lexis in the English language.

Result and discussion

When considering level classification, for identifying the level, we used a random forest algorithm. They have successfully trained above 300 datasets using the random forest algorithm. The average value of accuracy is 84.7%. The accuracy of the Gini index in the decision tree algorithm is 64.7%, and the Entropy gives 65.7% accuracy. The random forest algorithm gives higher accuracy than the decision tree algorithm, but it needs more instances in the dataset to get a good prediction. The research was tested on a mobile application using 10 students. After the pretest, seven students were selected for level 1, two for level 2, and one for level 3. According to the students' performance, they were referred to the suitable level. Then, after the lesson, more than 95% of students passed the posttest and they were shown to have improved knowledge of homophones, synonyms, and antonyms. Therefore, this application will be a better solution for all the children who are willing to learn English Lexis.

Conclusion

The proposed system is built using a combination of technologies such as voice recognition and collaborative environments, with the primary goal of improving the knowledge of children who are illiterate in English. The overall system after development appeared promising in terms of completing its task; while there were some drawbacks, they could be improved, leaving room for future research areas.



Reference

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