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Chief Editors:
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07-3818455
edgii.apbpg@gmail.com

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Preface

Pioneering Educational Perspectives: Series 2025 is a collection of thought-provoking insights and research contributions exploring contemporary educational trends and practices. This eBook presents a diverse range of perspectives on innovative teaching methodologies, digital learning strategies, and transformative approaches in education. Designed to serve as a resource for educators, researchers, and practitioners, it aims to inspire meaningful discussions and advancements in the field. Through carefully curated chapters, this publication offers fresh ideas and practical solutions to enhance learning experiences in an ever-evolving educational landscape.

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KIT PEMBELAJARAN KEA (KENALI EMOSI ANDA) 258

Masni binti Jamin[1,*], Nooraini binti Ab. Latif [2], Fathimatuzzahra' binti Mohd Zabidon[3], Nurul Atiqah binti Muhamad Nujeib[4], 'Irdina binti Shariful Anuar[5] 258

SIMBA 261

Zarkashi bin Junaidin[1], Nur Dania Qistina binti Nor Shafizul Adli[2] & Puan Masni binti Jamin[3] 261

i-FleQ: INFOGRAFIK FLEKSI AL-QURAN 265

Khadijah Yusop[1,*], Mohd Fauzi Abdul Hamid[2] & Mohd Firdaus Yahaya[3] 265

EASY MATHWAY FORMULAE MODULE 269

[1]Pavithra A/P Kanabathi, [2]Shivani A/P Batumalai, [3]Ranjitha Lakshmi A/P Rajacrcha Kumar & [4]Jyothsheny Selvam 269

e-LAGU SERONOK, KOSA KATA MANTAP! *e-SONGS FUN, VOCABULARY STRONG!* 273

Viannie Tongguritom[1] & Minah Sintian [2*] 273

THE IMPLEMENTATION OF ECO READER QUEST MODULE TO ENHANCE STUDENTS' AWARENESS OF SUSTAINABLE PRACTICES 277

Nurmiza bt Rifayudeen[1,], Sharifah Radiyah bt Sayed Hasan[1], Dayini Dhabitah bt Zamil[1], Nur Syuhadah bt Syamsul Kamal[1] & Siti Aisyah bt Roslan[1*] 277

MARI MENGEJA BERSAMA-SAMA AYU 281

Roziah binti Ramli[1], Nur Amylia Natasya Mohamad Yusrie[2], Sarah Nabilah binti Mohd Mazni[3] Nur Hana Aliesha binti Muhd Hasanuddin [4] & Muhamad Danish bin Norahairuzan[5] 281

DEVELOPING ENGLISH COURSEWARE FOR LOWER SECONDARY SCHOOL STUDENTS: TEACHING PREPOSITIONS OF MOVEMENT IN EMAIL WRITING USING THE ADDIE MODEL ... 286

Muhammad Hafiz Mohd Zaki[1] 286

QUIZXPERT 290

Tharsinii Jayasilan[1] & Moganashwari Kandasamy[2] 290

ANIMATION VIDEO FOR VOCABULARY LEARNING 294

Nurain Khairina Zulkhairi[1] & Moganashwari Kandasamy[2] 294

UNLOCKING WORDS: THE VAK MODEL IN ACTION 298

Saiyidah Nafisah Mohd Nadzori[1], & Moganashwari Kandasamy[2] 298

VOCABVAULT : Enhancing Pre-service Teachers Vocabulary 302

Balqis Nur Aliah binti Misbah[1] & Moganashwari Kandasamy[2] 302

WHO VS. WHOM CHECKER 305

Nur Syazrina binti Ahmad Zubir[1] & Moganashwari Kandasamy[2] 305

SPARKLE READS TO IMPROVE PUPILS READING COMPREHENSION 309

Nurul Adawiyah Binti Abdul Manaf[1], & Dr Moganashwari Kandasamy[2] 309

VOCABULARY ENHANCEMENT THROUGH LITTLE GENIUS: WORD POWER 312

Nur Salsabila Irdina Binti Mohd Salleh[1] & Moganashwary Kandasami[2] 312

PHONICS PLAYLAND: AR FOR LEARNING PHONICS 316

e-ISBN: 978-967-0033-31-0

PHONICS PLAYLAND: AR FOR LEARNING PHONICS

Muhamad Arrysydi bin A Rizal[1]& Suhanah Rosnan[2*]

[1,2]Kolej Pengajian Pengkomputeran, Informatik & Matematik. Universiti Teknologi Mara Cawangan Melaka Kampus Jasin

**Corresponding author: suhan009@uitm.edu.my*

ABSTRACT

Early childhood education is an important stage in a child's development, establishing the groundwork for future academic achievement and social well-being. Currently, toddlers aged 1 to 3 participate in a broad set of activities that sets the tone for their intellectual and social growth. Integrating AR into toddlers' learning means that toddlers would get a more interactive educational experiences with a more opportunity to self-express. By bringing AR into this field, playschool teachers can build a more interactive learning environment which can be suited to different toddler's learning styles. this project intends to use augmented reality technology to solve the problems of early childhood education by combining augmented reality into play-based learning.

KEYWORDS: Early education, Toddlers, Augmented reality, Play-based learning.

PROBLEM AND OBJECTIVE

Different languages have different alphabets and script system that is unique to that language. English alphabet as these languages comes in different shape and sizes when it comes to their alphabet (Singh & Cheng, 2023). This can cause the toddlers to easily get confused in which they could make the mistake of mixing up these different alphabets (Rouse & Nicholas, 2022). In addition, these languages have different and distinct sets of sounds to represent each letter. This can be problematic for toddlers as they can have trouble pronouncing the letters or might get confused of mixing up the phonetics pronunciation (White & Daub, 2021).

Toddlers develop at a different rate where each of them has a different learning pace for learning phonetics. This different pace might be problematic for playschool teachers where the toddlers are set in a group setting. The teachers might have the struggle to cater to the different learning pace to each of the toddlers (Budiyanto et al., 2020). If the learning pace is too fast, the toddlers would not have enough time to fully understand the topic while If the learning pace is too slow, the toddlers can become bored of the topic and lose interest in learning phonetics (Budiyanto et al., 2020). This can result in a lack of motivation among the toddlers.

The objectives that this project will focus on:

1. To design multiple 3D models for augmented reality game on kindergarten learning.
2. To develop an augmented reality application that can cater to toddlers' learning pace.
3. To evaluate on the pronunciation of toddlers after playing the augmented reality game.

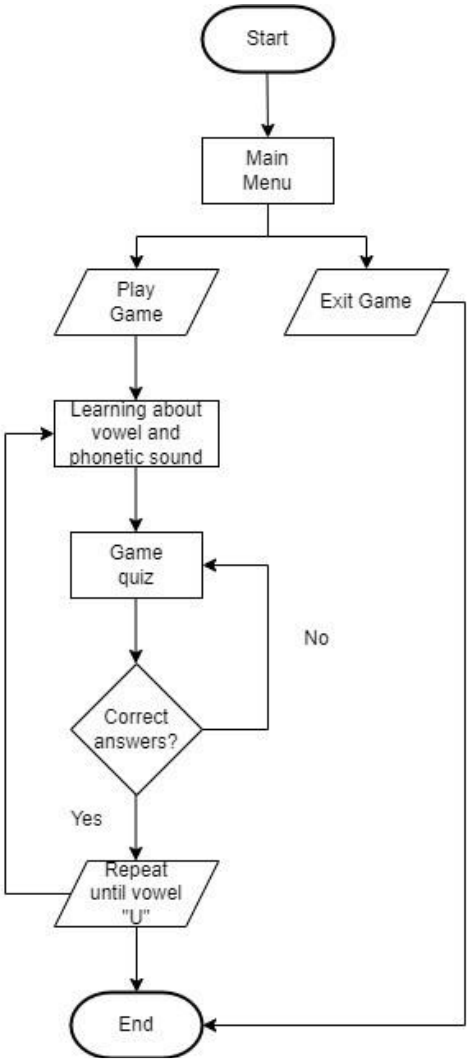
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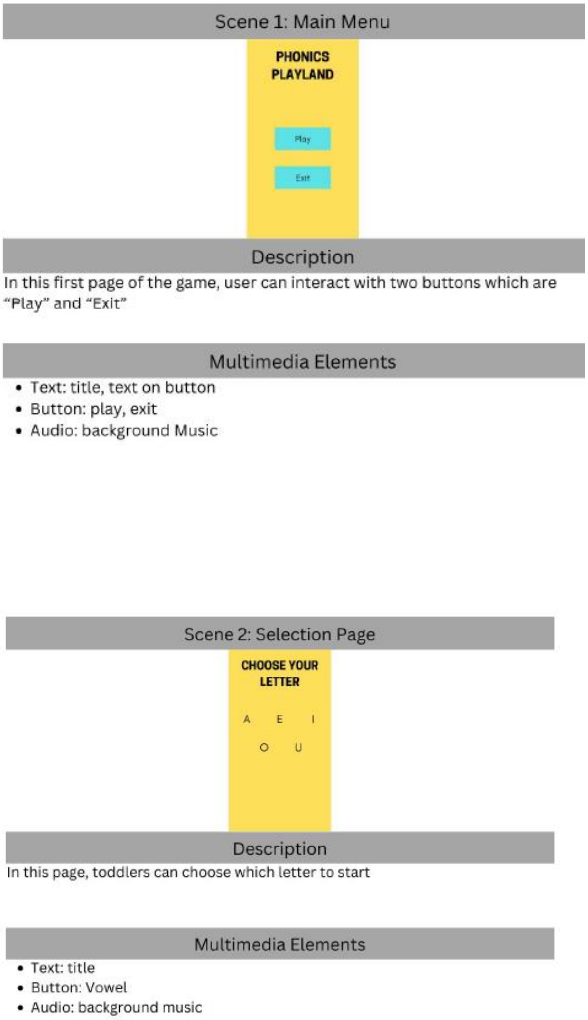
DESIGN DESCRIPTION

This project's primary target users are toddlers aged 1-3 for learning English phonetics. Augmented reality will be the main medium for this game which includes all kinds of multimedia elements such as text, animation, audio and graphics. The language of this game will be in English. The content of this game will be focusing on English phonetics where there are sounds on the correct pronunciation of simple words and alongside of the words will be 3D modelling of the object where the toddlers can interact with. The toddlers will also be tested on their knowledge about phonetics with some quizzes and challenges alongside learning. For user interaction, users can interact with the 3D modelling representing the words for each letter. Users can choose two different words and 3D models for each of the letters learn the correct pronunciation for those words.

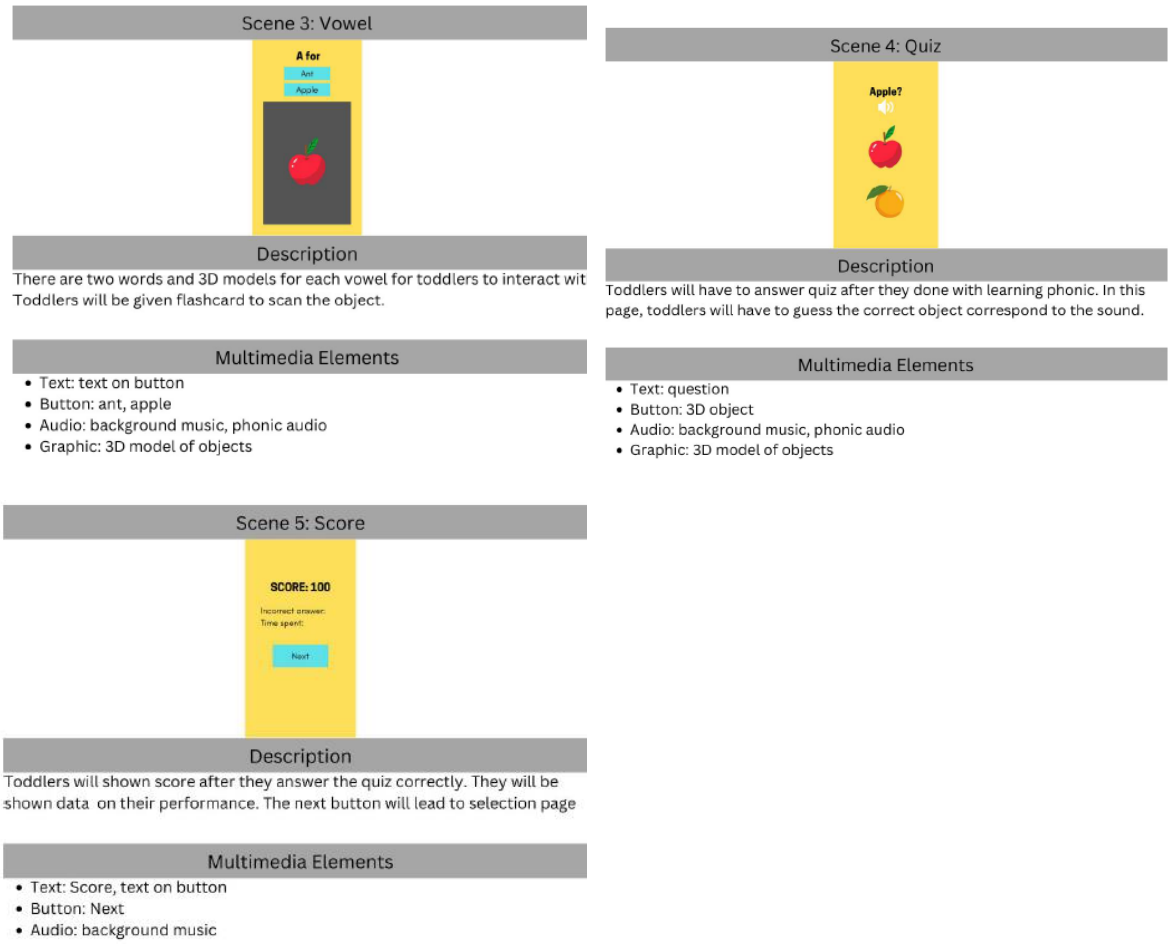
VISUALS

Flowchart and storyboard.





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NOVELTY AND UNIQUENESS

The 3D models and augmented reality elements of this game can make the learning all the more fun and engaging for young toddlers. This game can adjust to toddlers learning pace by giving them the freedom of time to proceed to the next challenges. This can sustain their learning interest and keep their motivation in learning phonetics.

BENEFITS TO MANKIND

Augmented reality has the potential to transform early childhood education. By creating an AR game-based learning designed for toddlers in playschool, this project can fulfil crucial learning demands at this early stage. Toddlers can be multilingual by exposing them to different language at this early age. This can make them to easily progress towards the academic challenges since English is the second language taught at school and the main language in university.

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COMMERCIAL POTENTIAL

For this project, the final and finished game will be published over to the internet to be easily downloaded to the mobile devices. Parents and teachers will be provided an in-game manual so that they can anticipate with the toddler along the learning process. Parents and teachers are also encouraged to monitor their toddler's progress by providing feedback for the game. Since a prototype will be the output of this project, thus no cost will be included.

CONCLUSION

Kindergarten learning plays a crucial role in shaping a child's cognitive, social, and emotional development, laying the foundation for future academic success. Integrating augmented reality (AR) into educational game for kindergarteners can enhance learning experience by making abstract elements tangible and engaging. By employing the scaffolding AR model alongside the ADDIE instructional design framework, this project can create tailored AR game that provide personalized support and guidance to young learners as they explore and interact with digital content overlaid onto their physical environment. This approach ensures that kindergarten earning experiences are not only immersive and enjoyable but also effectively aligned with educational objectives, fostering a love for learning and laying a solid foundation for lifelong academic growth.

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