MERGING LANES: WHERE E-LEARNING DIVERSITY MEETS FUTURE TRENDS

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THE DEVELOPMENT OF LEARNWISE, AN ENGLISH LEARNING COURSEWARE FOR PKSK PREPARATION: A PROTOTYPE

Sharifah Nurlaila Najihah binti Syed Mazran[1], *Wan Anisha binti Wan Mohammad[2], Azlina binti Mohd Mydin[3]

*2023637108@student.uitm.edu.my[1], *wanan122@uitm.edu.my[2], azlin143@uitm.edu.my[3]*

[1]Fakulti Sains Komputer & Matematik (FSKM),
Universiti Teknologi MARA Cawangan Terengganu, Malaysia

[2,3] Jabatan Sains Komputer & Matematik (JSKM),
Universiti Teknologi MARA Cawangan Pulau Pinang, Malaysia

**Corresponding author*

ABSTRACT

This project focuses on developing an interactive web-based English learning courseware tailored for Year 5 and Year 6 students to enhance their English proficiency and support their preparation for the Pentaksiran Kemasukan Sekolah Khusus (PKSK). Many pupils experience difficulties in understanding basic English instructions, perceive the subject as challenging, and lack motivation due to traditional teaching approaches that rely heavily on textbooks and worksheets, with minimal integration of technology in the classroom. To address these issues, the project applies Constructivist Learning Theory and adopts the ADDIE instructional design model, encompassing the phases of Analysis, Design, Development, Implementation, and Evaluation. Developed using Adobe Animate, the courseware integrates multimedia elements such as text, audio, graphics, and animations to create interactive activities focusing on spelling, grammar, synonyms, antonyms, idioms, quizzes, and games. These features promote self-paced learning, provide immediate feedback, and enhance engagement through gamified and visually enriched learning experiences. Preliminary evaluations and feedback from teachers and students indicate improvements in comprehension, confidence, and motivation compared to conventional instructional methods. Overall, this initiative demonstrates how a theory-driven multimedia courseware can effectively support primary school students' English language development while aligning with Malaysia's digital education goals.

Keywords: courseware, English, PKSK, ADDIE, Constructive Learning Theory

Introduction

With the advancement of information technology, e-learning has significantly transformed both teaching and learning processes. It refers to the use of digital technologies and the internet to deliver lessons, allowing students to learn anytime and anywhere at their own pace. Interactive features such as videos, animations, and quizzes enhance engagement and sustain students' interest (Hollister et al., 2022). In English language learning, e-learning courseware has been shown to improve vocabulary, grammar, pronunciation, and learners' confidence (Wati et al., 2025). This project aims to integrate educational technology into English learning for Malaysian primary school students, particularly Year 5 and Year 6 pupils preparing for the PKSK examination, which remains a key pathway to prestigious schools such as Sekolah Berasrama Penuh (SBP), Maktab Rendah Sains MARA (MRSM), and Sekolah Menengah Kebangsaan Agama (SMKA). Insights from an interview with an English teacher revealed

that conventional teaching methods relying on textbooks and whiteboards are less interactive, resulting in low engagement, short attention spans, and limited opportunities to develop essential 21st-century skills such as critical thinking and problem-solving.

Many English classrooms still rely on traditional, teacher-centered methods such as lectures, textbooks, and memorization, which limit active participation, creativity, and meaningful learning (Yue, 2024). Students also tend to have shorter attention spans, making long, non-interactive lessons less effective. Research shows that technology-supported learning increases engagement, motivation, and autonomy compared to conventional approaches (Yuliani et al., 2023; Yao-Ping Peng et al., 2023). However, limited use of digital tools restricts opportunities for self-paced learning and immediate feedback. Therefore, there is a strong need for an interactive e-learning courseware with multimedia elements and student-centered strategies to better prepare Year 5 and Year 6 students for the PKSK examination.

Grounded in Constructivist Learning Theory, which emphasizes active learning through exploration and guided support within the Zone of Proximal Development (Vygotsky, 1978) the LearnWise courseware promotes meaningful and self-directed learning experiences. Designed for PKSK candidates, the courseware includes modules on grammar, spelling, synonyms, antonyms, and idioms, delivered through interactive quizzes, games, and multimedia elements with instant feedback. By combining educational theory with digital innovation, the project enhances students' motivation, confidence, and English proficiency while supporting Malaysia's digital education agenda and strengthening English language learning at the primary school level (Dawi & Hashim, 2022).

Thus, the development of this project is to identify the e-learning needs of Standard 5 and 6 students preparing for PKSK, to design and develop a Constructivist-based English e-learning courseware, and to evaluate its usability and functionality in supporting student engagement and learning outcomes.

Methodology

The development of LearnWise is grounded in Constructivist Learning Theory and guided by the ADDIE instructional design model, ensuring that the courseware promotes active, student-centered knowledge construction while systematically progressing through the phases of Analysis, Design, Development, Implementation, and Evaluation to produce an effective and structured e-learning solution.

Constructivist Learning Theory explains that learning happens when learners actively build their own understanding through experience, interaction, and reflection, rather than simply receiving information from teachers. In this theory, learners are seen as active participants who develop knowledge by connecting new information with what they already know. Vygotsky (1978) introduced

the concept of the Zone of Proximal Development, which suggests that learners learn best when they are given appropriate guidance and support that helps them achieve tasks they cannot complete on their own.

The ADDIE model provides a standard framework for instructional design. It lays out a systematic method for creating effective learning content and educational programs. The process has five phases Analysis, Design, Development, Implementation and Evaluation. These stages offer guidance for designers throughout the planning creation and refinement of learning materials. The ADDIE model facilitates straightforward decisions at every step. This helps ensure learning plans directly address learner needs utilize suitable materials and establish outcomes that can be measured. In educational and e-learning contexts, the ADDIE model is commonly used because it offers a flexible yet organized approach that can be adapted to different environments, including online courseware, multimedia learning systems, and language-learning applications.

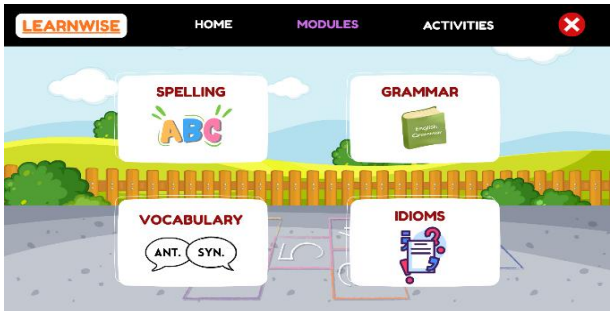
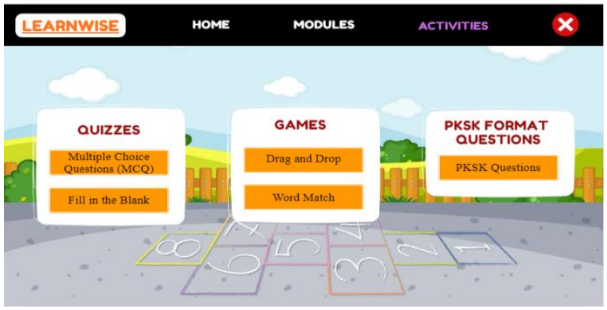
Figure 1: Phases in ADDIE Model

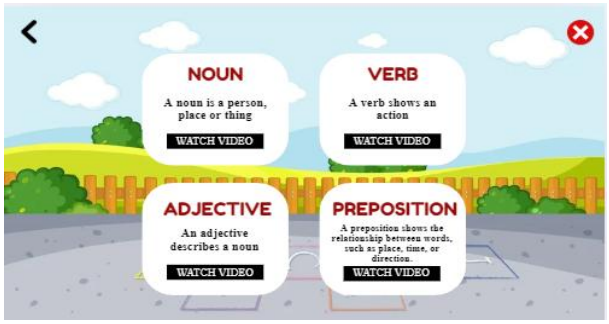
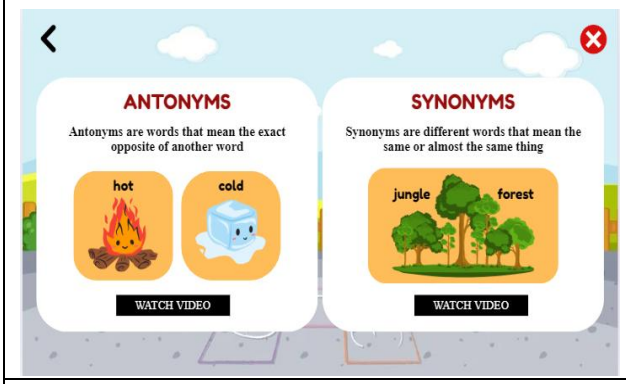
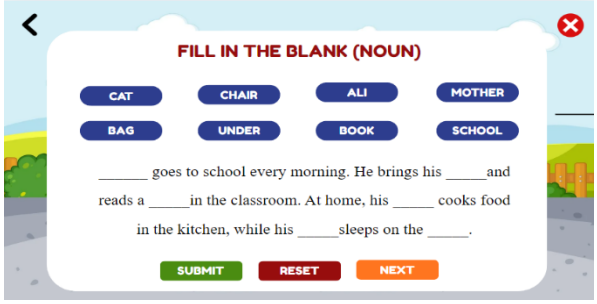
Design

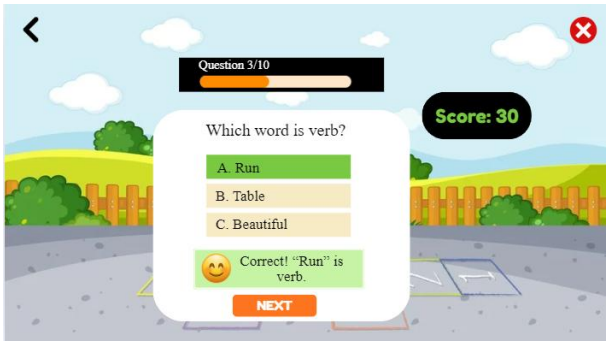
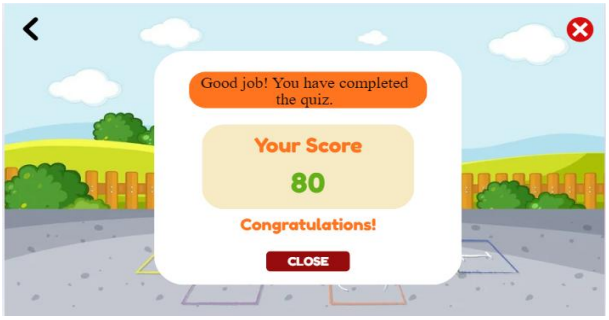
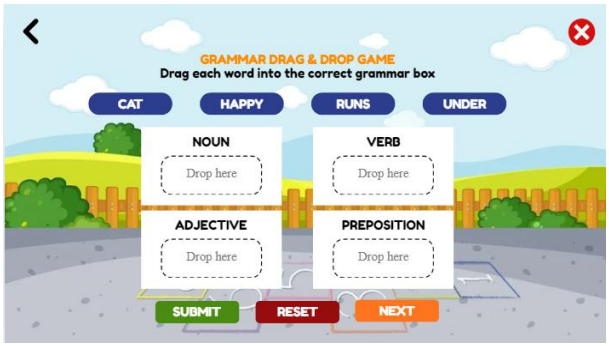
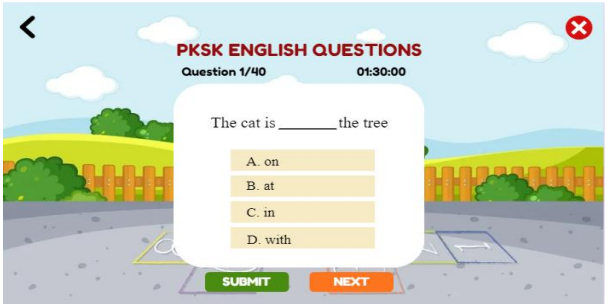
A prototype is an early working model of the LearnWise courseware developed during the design and development phases to visualize and test the structure, interface, and interactive features before full implementation. It represents the actual look and functionality of the system, including the Homepage, learning modules, activities, and PKSK-format questions. Guided by Constructivist Learning Theory, the prototype is designed to promote active learning by enabling students to explore content, interact with materials, and construct knowledge through meaningful tasks.

Based on the interface design, the prototype demonstrates how students engage with English content through quizzes, drag-and-drop games, word-matching activities, and PKSK-style questions. These interactive components encourage learners to apply grammar and vocabulary knowledge actively rather than passively receive information. The inclusion of immediate feedback and score displays allow students to reflect on their performance, identify mistakes, and improve their understanding. Table 1 below presents the prototype of the LearnWise courseware.

Table 1: Prototype of the LearnWise courseware

Prototype	Description
1. Homepage 	The Homepage displays a colorful design and a clear "START" button. The simple layout, bright colors help create a positive learning environment and encourage students to start learning.
2. Modules page 	The Modules page shows the main English learning modules in LearnWise, which include Spelling, Grammar, Vocabulary, and Idioms. Each module is displayed using clear labels and icons to help students easily recognize and choose the topic they want to learn. The simple layout allows students to move freely between modules based on their learning needs.
3. Activities page 	This Activities page presents three main activity types: Quizzes (MCQ and Fill in the Blank), Games (Drag and Drop and Word Match), and PKSK Format Questions. Students can select activities based on their learning goals and readiness.
4. Spelling Module page 	This Spelling Module page presents spelling lessons through an instructional video that explains the spelling of key words along with the simple definitions and visual illustrations. Students can watch, pause, and replay the video to support understanding the at their own pace.

5. Grammar Module page 	This Grammar Module page presents grammar lessons through instructional video that explain nouns, verbs, adjectives, and prepositions using simple definitions visuals and example sentences. Students can watch, pause, and replay the videos to support understanding at their own pace.
6. Idioms Module page 	The Idioms Module page video explains each idiom using simple narration, animation, and visual examples. Students watch how the idioms are used in a short situation, helping them understand the meaning in a real context.
7. Vocabulary Module page 	This Vocabulary Module page introduces antonyms and synonyms using clear definitions, visuals, and example words. Students can click the "Watch Video" button to view short videos that explain the concepts through simple examples and illustrations.
8. Quizzes page (MCQ and Fill in the Blank) 	The Quizzes page shows the Quizzes section that has MCQ and Fill in the Blank that has progress bar, score display, and time limit. St select answers based on their understanding and receive immediate updates on their progress during the quiz.

9. Quiz Feedback page 	Immediate feedback after students answers a question. Correct answers are highlighted in green with positive reinforcement, while incorrect answers are shown in red with a brief explanation to help students understand their mistake before moving to the next question.
10. Score page 	The score page displays a congratulatory message and students final score after completing the quiz. It provides closure to the activity and allows students to exit the quiz by clicking the "Close" button.
11. Games page (Drag and Drop and World Match) 	The Games page includes interactive activities such as drag-and-drop and word match. Students drag words into words into correct grammar categories and match words with antonyms or synonyms. These games allow students to practice language concepts through hands-on interaction.
12.PKSK Format Questions page 	This page presents PKSK-style English multiple choice questions with a timer and question progress indicator. Students select the correct answer based on their understanding and submit their response before proceeding to the next question.

Conclusion

In conclusion, this chapter has described the overall methodology used in developing LearnWise: An English Learning Courseware for PKSK preparation, highlighting how the ADDIE model systematically guided the project through the Analysis, Design, Development, Implementation, and Evaluation phases. Particular emphasis was placed on the Design phase, where detailed storyboards and interface planning were carried out to structure the content, layout, and interactive elements. These designs were then translated into a functional prototype that visualized the actual flow, features, and user interaction of the courseware before full implementation. Grounded in Constructivist Learning Theory, both the design and prototype were developed to promote active, learner-centered engagement through interactive activities, immediate feedback, and meaningful tasks. Overall, the integration of a structured design process and a well-developed prototype provided a strong foundation for enhancing students' understanding, confidence, and readiness for the PKSK examination.

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