

UNIVERSITI TEKNOLOGI MARA

**MALAY GRAMMAR MOBILE APP
FOR SPM STUDENTS (KSSM
FORMAT) USING A BEHAVIOURIST
APPROACH**

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ABSTRACT

This project presents Tatabahasa SPM, a mobile application developed to support SPM students in learning Malay grammar in accordance with the KSSM syllabus. The initiative was driven by the evident lack of engagement in traditional grammar learning methods, which tend to rely heavily on teacher-led instruction and provide limited opportunities for active student involvement. The primary objective of this study was to design and develop an interactive and user-friendly mobile application grounded in behaviourist learning theory, which emphasises repetition and reinforcement to strengthen grammatical understanding. The development process adhered to the ADDIE model, encompassing the phases of analysis, design, development, implementation, and evaluation. Flutter was employed for cross-platform development, while Firebase served as the backend to manage user authentication, content storage, and real-time progress tracking. The application features five structured modules, each addressing key grammar topics through explanatory notes, educational videos, interactive games, and quizzes. Gamified elements such as XP points, achievement badges, and streak tracking were integrated to encourage consistent learning behaviour. To assess the application's usability and effectiveness, testing was conducted using the System Usability Scale (SUS), which yielded an average score of 87.5, reflecting a high level of user satisfaction. The results indicate that embedding behaviourist principles within a mobile learning environment can significantly enhance student motivation, comprehension, and retention of grammar concepts. This project contributes meaningfully to the field of educational technology by offering an effective digital solution for improving Malay grammar proficiency among secondary school learners. Potential future enhancements include the integration of artificial intelligence for personalised learning experiences, implementation of a cloud-based content management system, voice recognition features for pronunciation training, and collaborative tools to facilitate peer interaction.

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