

KESIMBA: A Game-Based Learning Approach to Teaching Malay Idioms in Primary Schools

Yusri Abdullah^{1)*}, Mohammad Zaimizan Zainal²⁾, Mohd H. A. Rahman³⁾, Fizaril Amzari Omar⁴⁾, Abu Bakar Ibrahim⁵⁾

¹⁾²⁾³⁾⁴⁾⁵⁾Master of Information Technology, Computer Science and Information Technology, Sultan Idris Education University

35900 Tanjong Malim, Perak, Malaysia

¹⁾yusri.abdullah@meta.upsi.edu.my

²⁾zaimizan.zainal@meta.upsi.edu.my

³⁾abdul.rahman@meta.upsi.edu.my

⁴⁾amzari.omar@meta.upsi.edu.my

⁵⁾bakar.ibrahim@meta.upsi.edu.my

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Abstract

This study reports on the development and evaluation of KeSimba (*Kembara Simpulan Bahasa*), a digital game designed to enhance Year 5 pupils' comprehension and motivation in learning Malay idioms (*simpulan bahasa*). Recognising pupils' persistent challenges in mastering figurative language, the study aimed to identify the pedagogical need for a game-based approach, develop KeSimba using the ADDIE instructional design model, and evaluate its effects on idiom learning achievement and motivation. A mixed-method design involving 30 pupils and three Malay language teachers was adopted, employing a needs survey, pre- and post-tests, the System Usability Scale (SUS), and semi-structured teacher interviews. Findings indicated significant improvement in pupils' idiom achievement, with mean scores increasing from 52.1 to 78.2, and an SUS score of 82.3 categorised as "Excellent". Thematic analysis revealed three themes; heightened participation, enhanced confidence and transfer of learning, and the need for integration support. Grounded in Constructivism and Self-Determination Theory, KeSimba fostered contextual meaning-making, autonomy, competence, and relatedness. The findings suggest that culturally relevant, game-based tools can revitalise idiom learning when embedded in curriculum practices and supported through teacher training.

I. INTRODUCTION

Idioms, or *simpulan bahasa*, are an essential component of Malay language education because they enrich communication, strengthen expressive competence, and transmit cultural wisdom embedded in everyday linguistic practices. As figurative expressions, idioms do not merely function as decorative language features but also represent culturally situated meanings that help pupils understand moral values, social norms, and collective ways of thinking (Boers & Lindstromberg, 2008).

Mastery of idioms is therefore important for developing both linguistic competence and cultural literacy among primary school pupils. When pupils understand idiomatic expressions, they are better able to interpret implied meanings, use language more creatively, and participate more effectively in oral and written communication. However, because idioms are often semantically non-literal, many learners experience difficulty connecting the surface form of an idiom with its contextual meaning (Ariyani et al., 2021).

Despite their importance, idioms remain one of the more challenging aspects of primary language learning. Many pupils depend heavily on rote memorisation, where idioms are learned as fixed expressions without sufficient exposure to their pragmatic, cultural, and communicative contexts. This approach may enable pupils to recall definitions in tests, but it does not necessarily support accurate idiom use in essays, classroom discussions, or everyday communication (Boers & Lindstromberg, 2008).

Conventional teaching approaches, such as list memorisation, dictionary-based explanation, and repetitive drills, often provide limited scaffolding for young learners. These methods tend to treat idioms as isolated lexical items rather than as meaningful expressions that emerge from social interaction, cultural knowledge, and authentic communicative situations. As a result, pupils may memorise idiom meanings mechanically but still struggle to apply them appropriately in meaningful contexts (Ke, 2016).

Recent developments in language pedagogy emphasise the need for contextual, interactive, and learner-centred strategies that can improve comprehension, motivation, and retention. In this regard, instructional activities should allow pupils to encounter idioms through examples, narratives, problem-solving tasks, and feedback rather than through passive memorisation alone. Such an approach is consistent with the broader literature on digital game-based language learning, which highlights the value of meaningful interaction and contextualised practice in supporting language development (Hung et al., 2018).

In response to the growing emphasis on digital transformation in education, Game-Based Learning has emerged as a promising pedagogical strategy for creating engaging, situated, and motivational learning environments. Game-Based Learning integrates instructional content into game mechanics such as challenge, feedback, progression, exploration, and reward, thereby allowing pupils to learn through active participation rather than passive reception. Empirical reviews indicate that digital games can support language learning when learning objectives are meaningfully embedded within gameplay rather than added superficially as decorative features (Dixon et al., 2022).

The effectiveness of Game-Based Learning is also closely related to motivational design. Well-designed educational games can support autonomy by allowing learners to make choices, competence by providing clear feedback and achievable challenges, and relatedness by encouraging interaction with peers, teachers, and culturally familiar content. These motivational conditions are consistent with Self-Determination Theory, which explains that learners are more likely to sustain intrinsic motivation when autonomy, competence, and relatedness are fulfilled (Ryan & Deci, 2020).

Against this backdrop, KeSimba, or Kembara Simpulan Bahasa, was developed as a digital learning tool to address pupils' persistent difficulties in understanding and applying Malay idioms. The project seeks to align Game-Based Learning principles with the Malaysian primary school curriculum by promoting contextual meaning-making, learner autonomy, motivation, and active engagement. Accordingly, this study is guided by three research questions: what pedagogical and learner needs justify the development of KeSimba, how KeSimba can be

effectively designed and developed to enhance idiom learning, and what effects KeSimba has on pupils' comprehension, motivation, and achievement in learning Malay idioms.

II. LITERATURE

The teaching of Malay idioms, or *simpulan bahasa*, in Malaysian primary classrooms has traditionally relied on memorisation, textbook exercises, and dictionary-based explanation. Although these methods may help pupils recognise idioms, they often fail to support deeper understanding of how figurative expressions function in authentic communication. As a result, idioms are frequently treated as isolated vocabulary items rather than culturally embedded expressions with social, moral, and contextual meanings (Littlemore & Low, 2006). This limitation supports the view that figurative language learning requires meaningful conceptual and contextual engagement rather than mechanical memorisation alone (Boers & Lindstromberg, 2008).

Game-Based Learning offers a relevant response to these pedagogical challenges because it combines learning content with interactive experience. Unlike conventional drill-based instruction, Game-Based Learning allows pupils to encounter concepts through challenge, exploration, feedback, progression, and reward (Ryan & Deci, 2020). In language learning, these elements can transform idiom instruction from passive memorisation into active meaning construction. Well-designed educational games are therefore not merely entertainment tools, but structured learning environments that integrate cognitive, affective, motivational, and social dimensions of learning (Plass et al., 2015).

Empirical studies on digital game-based language learning show that well-designed games can support vocabulary learning, comprehension, motivation, and learner participation. Digital games provide repeated exposure, immediate feedback, contextual clues, and multimodal representations that are useful for learning figurative language. In idiom learning, these features allow pupils to encounter expressions through text, images, stories, sounds, and interactive tasks. A scoping review confirms that digital games have strong potential when their design is aligned with language learning goals and learner needs (Hung et al., 2018).

The educational value of Game-Based Learning depends on whether the game supports meaningful learning rather than simple play. When game elements are disconnected from instructional objectives, pupils may focus only on winning without developing deeper language understanding. However, when content, feedback, challenge, and reflection are integrated effectively, games can improve learning outcomes, motivation, and retention. Meta-analytic evidence shows that well-designed serious games can produce positive effects compared with conventional instruction (Wouters et al., 2013).

It is important to distinguish Game-Based Learning from superficial gamification. Gamification often adds points, badges, or leaderboards to existing tasks, whereas Game-Based Learning embeds the learning process within gameplay itself. In KeSimba, idiom meaning, recognition, and application are integrated into the learning journey rather than simply rewarded through game elements. Meta-analytic evidence shows that game-related design can support cognitive, motivational, and behavioural outcomes when implemented with clear pedagogical intention (Sailer & Homner, 2020).

The theoretical foundation of KeSimba is aligned with constructivist learning principles, which view learners as active meaning-makers who build understanding through experience, interaction, and reflection. In idiom learning, this means pupils should not only receive definitions but also explore how idioms function in meaningful contexts. KeSimba supports this

process through notes, stories, quizzes, feedback, and repeated attempts, creating a digital environment where knowledge is constructed through active participation (Koochang et al., 2009).

Self-Determination Theory strengthens the rationale for KeSimba by explaining how game-based environments can sustain learner motivation. In KeSimba, autonomy is supported through exploration and retry opportunities, competence through feedback and visible progress, and relatedness through pair-based or collaborative learning. These elements encourage pupils to persist in challenging tasks such as figurative language comprehension. Based on these theoretical foundations, the study tests the null hypothesis that there is no significant difference in pupils' idiom achievement before and after playing KeSimba (Ryan & Deci, 2000).

III. RESEARCH METHOD

This study employed a mixed-method research design guided by the ADDIE instructional model. The design was used to measure pupils' idiom achievement quantitatively and explore teachers' perspectives on engagement, motivation, and classroom interaction during the use of KeSimba. The methodology consisted of two phases: needs analysis and game development, followed by classroom implementation and evaluation. This structure ensured that KeSimba was examined as both a digital product and a pedagogical intervention aligned with learning objectives, game mechanics, feedback systems, and learner experience (Plass et al., 2015).

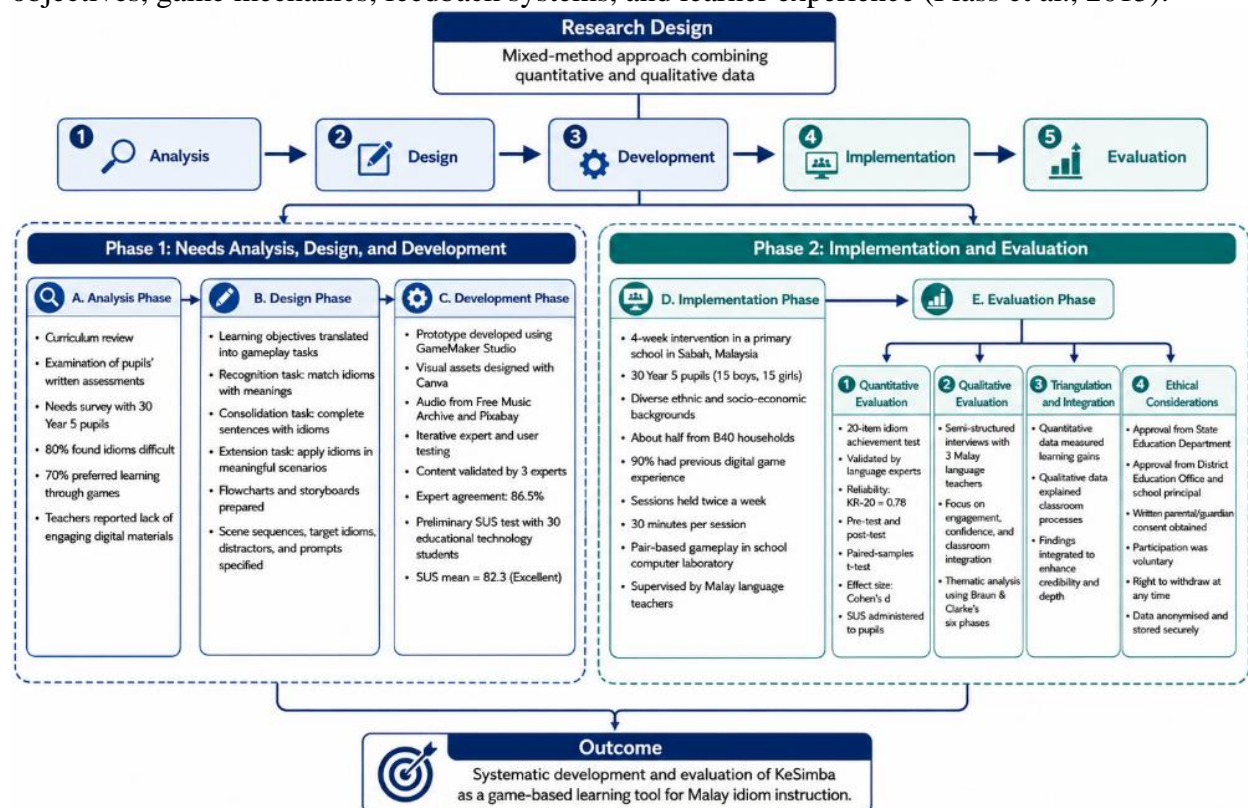


Figure 1. Methodology of the KeSimba Study

The analysis phase involved reviewing the Malaysian primary Malay language curriculum and pupils' written assessments to ensure that KeSimba's idiom content aligned with Year 5 learning expectations. A needs survey with 30 pupils showed that 80% found idioms difficult because of their figurative and abstract meanings, while 70% preferred learning through games; teacher feedback also confirmed the lack of interactive digital materials. Based on these findings,

KeSimba was designed around three progressive gameplay tasks recognition, consolidation, and extension and developed using GameMaker Studio with supporting visual and audio assets. Expert validation by three specialists produced an agreement score of 86.5%, indicating strong content relevance and pedagogical suitability, while a preliminary usability evaluation with 30 undergraduate educational technology students produced an SUS mean score of 82.3, placing KeSimba in the “Excellent” category (Bangor et al., 2008).

The implementation phase was conducted over four weeks at a national primary school in Sabah, Malaysia, involving 30 Year 5 pupils who used KeSimba twice a week in 30-minute paired sessions. The evaluation used quantitative and qualitative methods, including a 20-item idiom achievement test with acceptable reliability, as shown by a KR-20 coefficient of 0.78. Achievement differences were analysed using a paired-samples t-test, while Cohen’s d measured the intervention effect size. Semi-structured interviews with three Malay language teachers were analysed thematically to identify patterns related to pupils’ engagement, confidence, learning transfer, and classroom integration (Braun & Clarke, 2006).

Triangulation was used to integrate quantitative and qualitative findings, with achievement test results showing pupils’ learning gains and teacher interviews explaining the classroom processes behind those improvements. These qualitative insights included heightened participation, reduced anxiety, and greater willingness to use idioms in writing and oral communication. Ethical procedures were followed through approval from the relevant education authorities and school principal, as well as written consent from parents or guardians. Pupils participated voluntarily, could withdraw at any time, and all data were anonymised and securely stored to protect confidentiality.

IV. RESULTS AND DISCUSSION

The findings are presented according to four components aligned with the research objectives: the pedagogical needs for developing KeSimba, the game development outcomes, pupils’ idiom achievement, and teacher perspectives from thematic analysis. This structure highlights the progression from the identified learning problem to the design, implementation, measurable learning gains, and classroom impact of KeSimba.

1. Identifying Needs for Developing KeSimba

The needs analysis showed that Year 5 pupils had difficulty understanding Malay idioms because their meanings are figurative, abstract, and context-dependent. Of the 30 pupils surveyed, 80% reported difficulty in learning idioms, while 70% preferred game-based learning. Teacher feedback also indicated that existing resources lacked interactivity, feedback, and visual support. Therefore, KeSimba was developed to provide a more contextual, engaging, and culturally relevant learning experience through visual, narrative, and quiz-based activities.

Table 2. Identified Needs of a Digital Game for Idiom Learning

Stakeholder	Identified Need	Description
Pupils	Difficulty with idioms	80% found idioms hard to understand due to figurative and abstract meanings.
Pupils	Preference for game-based learning	70% preferred learning through games as it increases enjoyment and engagement.
Teachers	Lack of interactive resources	Limited digital and creative tools to support figurative language instruction.
Teaching–Learning Context	Innovative approaches	Traditional methods insufficient; a need for digital tools that integrate interactivity and motivation.

2. Development of KeSimba

The development of KeSimba translated the instructional design into an interactive digital game for learning Malay idioms. The process included designing the characters, interface, navigation, rules, and learning flow, which were mapped through flowcharts and storyboards. These design elements ensured that each part of the game aligned with the learning objectives, activity sequence, and cognitive level of Year 5 pupils. As a result, KeSimba was developed not merely as a digital game, but as an instructional environment that integrates content delivery, guided practice, and formative assessment.



Figure 2. Main Menu of Kesimba

The main menu served as the central entry point to KeSimba and provided clear orientation before pupils began the learning activities. As shown in Figure 2, it displayed the game title, character options, gameplay instructions, and available levels. Players could navigate using the W, A, S, D keys or arrow keys, while the Shift key enabled faster movement. This clear navigation guidance reduced confusion, improved ease of use, and helped pupils focus on the learning tasks rather than technical operation.

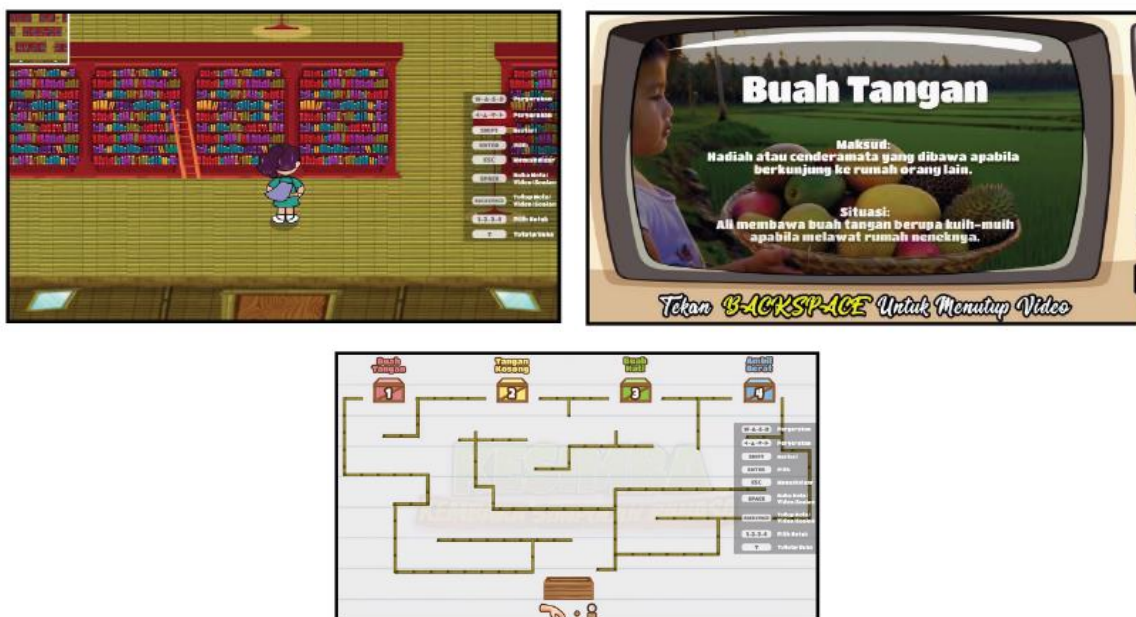


Figure 3. The Three Houses in KeSimba

KeSimba adopted an exploratory learning structure with three main spaces: the House of Knowledge, the House of Stories, and the House of Mind, which guided pupils from idiom notes to contextual understanding and quiz-based application. This design positioned pupils as active learners who explored, interacted, and constructed meaning rather than merely memorising

idioms. Expert validation by three specialists produced an agreement score of 86.5%, indicating strong content relevance, instructional accuracy, and pedagogical suitability. The usability evaluation also produced a mean SUS score of 82.3, placing KeSimba in the “Excellent” category and showing that the game was user-friendly, well organised, and easy to navigate (Bangor et al., 2008).

Participants’ feedback supported the effectiveness of KeSimba’s design, as they described the game as intuitive, visually engaging, and able to sustain learner focus. The integration of visuals, sound cues, and immediate feedback helped pupils understand idiomatic meanings while reducing anxiety when making mistakes. These features created a low-risk learning environment where pupils could experiment, receive guidance, and try again without fear of failure. Overall, the development outcomes show that KeSimba was technically functional, pedagogically valid, engaging, and supportive of pupils’ learning processes.

3. Achievement in Idiom Learning

The quantitative findings showed that pupils’ idiom achievement improved substantially after participating in the four-week KeSimba intervention. Using a pre-test and post-test design, the results indicated that both boys and girls recorded clear learning gains, with boys’ mean scores increasing from 51.2 to 76.1 and girls’ mean scores increasing from 53.1 to 80.2. Overall, pupils’ mean score increased from 52.1 in the pre-test to 78.2 in the post-test, producing a gain of 26.1 points. These findings suggest that KeSimba effectively supported pupils’ understanding of Malay idioms across the participant group.

Table 2. Pre- and Post-Test Outcomes

Group	N	Pre-test Mean	Post-test Mean	Gain
Boys	15	51.2	76.1	+24.9
Girls	15	53.1	80.2	+27.1
All Pupils	30	52.1	78.2	+26.1

The results in Table 2 show that the improvement was not limited to one gender group. Although girls obtained slightly higher pre-test and post-test means than boys, both groups achieved gains of more than 24 points. This indicates that KeSimba was beneficial for pupils with different initial levels of achievement. However, because the analysis did not include a separate inferential comparison between boys and girls, the gender-based differences should be interpreted descriptively rather than as statistically confirmed differences. The main emphasis of the finding is therefore on the overall improvement in pupils’ idiom learning after using KeSimba.

To determine whether the observed improvement was statistically significant, a paired-samples t-test was conducted. This test was appropriate because the same group of pupils completed both the pre-test and post-test, allowing the analysis to examine whether the mean difference between the two scores was significant. The results are presented in Table 3.

Table 3. Paired-Samples t-Test

Comparison	Mean Difference	t(df)	p
Pre-test vs Post-test	26.1	9.87(29)	< 0.001

The paired-samples t-test showed a statistically significant improvement in pupils’ idiom achievement after using KeSimba, $t(29) = 9.87$, $p < .001$, with the overall mean increasing from 52.1 in the pre-test to 78.2 in the post-test. The gain of 26.1 points indicates a meaningful improvement in pupils’ ability to recognise, understand, and apply Malay idioms, while the large effect size, Cohen’s $d = 1.80$, confirms that the intervention had a substantial educational impact. This improvement may be attributed to KeSimba’s instructional structure, which provided repeated idiom exposure through notes, stories, visual cues, quiz-based activities, and immediate

feedback, enabling pupils to correct errors, strengthen comprehension, and retain idiomatic meanings more effectively.

4. Thematic Analysis of Teacher Perspectives

To complement and triangulate the quantitative findings, semi-structured interviews with three Malay language teachers were analysed thematically. The purpose of this qualitative analysis was to gain deeper insight into how KeSimba influenced pupils’ classroom behaviour, learning confidence, and ability to apply idioms beyond the game environment. While the quantitative results demonstrated measurable improvement in pupils’ idiom achievement, the interview data helped explain the classroom processes that contributed to these gains. Through thematic analysis, three major themes emerged: heightened participation, enhanced confidence and transfer of learning, and the need for integration support.

Table 4. Thematic Analysis of Teacher Perspectives

Theme	Key Finding	Supporting Teacher Evidence	Interpretation	Pedagogical Implication
Heightened Participation	Pupils became more actively involved during KeSimba sessions, including those who were usually quiet or reluctant to participate in conventional Malay language lessons.	Teacher A: “Usually, only a few pupils respond. This time, almost everyone wanted to try.” Teacher B: “Even quiet pupils were eager to attempt the questions. They were less afraid of making mistakes.”	KeSimba created a low-risk and motivating learning environment through visual cues, interactive challenges, rewards, and immediate feedback. These features reduced pupils’ fear of making mistakes and encouraged broader classroom participation.	Game-based learning can increase pupils’ willingness to engage with idiom-learning tasks, especially when the learning environment supports confidence, peer interaction, and repeated attempts.
Enhanced Confidence and Transfer of Learning	Pupils began to use idioms beyond the game environment, particularly in conversations, essays, and oral classroom activities.	Teacher A: “Some pupils started using idioms in conversations, which never happened before.” Teacher B: “In their essays, they began inserting idioms—even when not perfectly accurate.”	Pupils’ attempts to use idioms in authentic contexts suggest that KeSimba supported movement from passive recognition to active application. Although some usage remained inaccurate, the attempts indicated increased confidence and willingness to experiment with figurative language.	KeSimba can support learning transfer when gameplay is connected to speaking and writing tasks. Follow-up activities are needed to improve accuracy and deepen pupils’ idiom usage.
Need for Integration Support	Teachers viewed KeSimba positively but emphasised the need for structured guidance to connect the game with formal classroom instruction.	Teacher C: “The game is excellent, but we need guidance on linking it to lesson plans and essay tasks.”	The effectiveness of KeSimba depends not only on the quality of the game, but also on how teachers integrate it into lesson planning, writing activities, assessment, and classroom discussion. Without such support, the game may remain supplementary rather than fully embedded in literacy instruction.	Lesson plan templates, writing extensions, discussion guides, assessment rubrics, and teacher training should be developed to ensure sustainable integration of KeSimba into Malay language lessons.

The findings indicate that KeSimba is a relevant, effective, and motivating digital intervention for teaching Malay idioms at the primary school level. The thematic analysis showed that the game increased pupils' participation, strengthened confidence, and encouraged the use of idioms in written and spoken communication. However, teacher support remains essential to connect gameplay with lesson planning, classroom activities, assessment, and curriculum objectives. Therefore, KeSimba should be viewed as a structured game-based learning tool whose long-term effectiveness depends on curriculum alignment, teacher facilitation, and follow-up learning tasks.

Addressing the Pedagogical Need

The needs analysis confirmed that pupils struggled to understand Malay idioms because their meanings are figurative, contextual, and cannot be interpreted literally, while conventional methods such as memorisation, textbook drills, and dictionary-based explanations often support only short-term recall rather than deeper comprehension and accurate use. KeSimba was therefore developed to address this pedagogical gap by embedding idiom learning within interactive gameplay through exploration, stories, notes, quizzes, feedback, and repeated attempts (Rabeah Md Zin et al., 2026). This approach provides pupils with contextualised exposure, multimodal explanation, and meaningful application, consistent with the principle that game-based learning should integrate cognitive, motivational, affective, and sociocultural dimensions rather than merely adding entertainment elements to lessons (Plass et al., 2015).

The need for KeSimba is further strengthened by pupils' preference for learning through games. In the needs analysis, most pupils reported that idioms were difficult to understand, while a substantial proportion indicated that they preferred game-based learning. This shows that the instructional problem was not only cognitive but also motivational. Pupils needed a learning environment that could reduce the perceived difficulty of idioms while increasing their willingness to participate. Educational games are particularly relevant in this context because they can transform difficult content into structured challenges supported by feedback, progression, and learner control. Meta-analytic evidence shows that serious games can produce positive effects on learning and retention when compared with conventional instruction (Clark et al., 2016; Wouters et al., 2013).

Development and Usability Outcomes

The development of KeSimba prioritised the alignment of learning objectives, game mechanics, content accuracy, and user experience to ensure that gameplay directly supported Malay idiom learning. The game was structured around three learning spaces: the House of Knowledge for introducing idiom content, the House of Stories for contextualising meanings through multimedia explanation, and the House of Mind for assessing understanding through quiz-based application. This structure created a coherent sequence from exposure to comprehension and application, while the expert validation score of 86.5% confirmed strong content relevance and pedagogical suitability. The usability evaluation also showed positive results, with a System Usability Scale score of 82.3 placing KeSimba in the "Excellent" category, indicating that the game was easy to navigate, visually clear, and well organised; this is important because a usable interface helps pupils focus on idiom learning rather than technical navigation, and SUS is recognised as a practical and reliable instrument for evaluating perceived usability across interactive systems (Bangor et al., 2008; Zeng, 2024).

The strong usability result suggests that KeSimba was able to combine visual engagement with functional clarity. Participants perceived the interface as intuitive, and the combination of visuals, sound cues, and immediate feedback appeared to support sustained attention. This is

particularly important for primary school pupils, whose learning engagement can be affected by interface complexity and excessive cognitive demand. A well-designed educational game should not overwhelm learners with unnecessary technical features. Instead, it should guide them smoothly toward the learning task. Research on gamified learning also indicates that cognitive, motivational, and behavioural outcomes improve when game elements are implemented with clear instructional purpose rather than superficial reward structures (Sailer & Homner, 2020).

Improvement in Idiom Achievement

The quantitative findings showed that pupils' idiom achievement improved substantially after using KeSimba, with the overall mean increasing from 52.1 in the pre-test to 78.2 in the post-test, representing a gain of 26.1 points. The paired-samples t-test result, $t(29) = 9.87$, $p < .001$, and the large effect size, Cohen's $d = 1.80$, confirm that the improvement was both statistically significant and educationally meaningful. This gain may be attributed to KeSimba's instructional design, which provided contextualised idiom exposure, multimodal explanations, quiz-based practice, and immediate feedback that supported deeper understanding of figurative meanings. The findings also suggest that KeSimba helped bridge the gap between comprehension and application by exposing pupils to idioms in contextual and problem-based situations, consistent with evidence that digital game-based learning improves language outcomes when it provides meaningful practice, contextual cues, and opportunities for active learner response (Chen et al., 2019; Hung et al., 2018).

From a theoretical perspective, the achievement gains support the constructivist assumption that learners construct understanding through active engagement with meaningful tasks. In KeSimba, pupils did not simply receive definitions from the teacher; they explored, selected, watched, answered, discussed, and received feedback. These activities positioned pupils as active participants in the learning process. The findings therefore suggest that contextualised game-based learning can strengthen idiom comprehension because it allows pupils to experience idioms as meaningful language forms rather than as disconnected memorised items.

Teacher Perspectives and Classroom Processes

The teacher interviews provided qualitative evidence explaining how KeSimba contributed to pupils' achievement gains, particularly through the first theme, Heightened Participation. Teachers observed that pupils became more willing to engage with idiom-learning activities, including those who were usually passive or hesitant to answer in conventional lessons. The game's interactive challenges, visual feedback, and low-stakes environment appeared to reduce anxiety by allowing pupils to try, make mistakes, receive feedback, and attempt tasks again. This created a more supportive learning atmosphere, consistent with Self-Determination Theory, which argues that learners are more likely to engage when autonomy, competence, and relatedness are supported (Reinders & Wattana, 2015; Ryan & Deci, 2020).

The second theme, Enhanced Confidence and Transfer of Learning, showed that pupils began using idioms in essays, oral presentations, and daily conversations after the intervention, although some usages were not fully accurate. Teachers viewed these attempts as evidence of growing confidence, willingness to experiment with language, and movement from passive recognition toward active application. This suggests that KeSimba helped pupils see idioms not merely as isolated test items, but as meaningful expressions that could be used in communication. Such transfer is important in Malay language education because idioms carry both linguistic and cultural value, and thematic analysis was useful for identifying these classroom processes by interpreting recurring patterns in teachers' qualitative responses while preserving their contextual experiences (Braun & Clarke, 2006; Peng et al., 2017).

The third theme, Need for Integration Support, indicates that although teachers viewed KeSimba as an effective and engaging digital learning tool, its classroom impact depends on structured pedagogical guidance. Teachers emphasised the need to connect gameplay with lesson plans, writing tasks, follow-up assessments, and curriculum objectives so that the game does not remain merely a supplementary activity. This finding highlights the continued importance of teacher mediation, as teachers are needed to guide reflection, correct inaccurate idiom use, and help pupils transfer learning into formal language tasks. Therefore, future implementation of KeSimba should include lesson plan templates, post-game discussion guides, writing-extension activities, assessment rubrics, and teacher training to ensure its sustainable integration into Malay language instruction.

Synthesis of Theoretical and Practical Implications

The findings indicate that KeSimba enhances Malay idiom learning by combining cognitive and motivational mechanisms, as the game supports contextualised exposure, multimodal explanation, repeated practice, immediate feedback, active participation, confidence, and reduced learning anxiety. The integration of Constructivism and Self-Determination Theory explains how pupils construct meaning through exploration and interaction while sustaining motivation through autonomy, competence, and relatedness. Practically, KeSimba demonstrates that culturally grounded educational games can strengthen language learning and cultural preservation by embedding *simpulan bahasa* into an interactive digital environment. However, its long-term effectiveness requires structured classroom integration, teacher guidance, follow-up speaking and writing activities, curriculum alignment, and further studies involving larger samples, control groups, and delayed post-tests.

V. CONCLUSION

This study set out to identify the pedagogical need for, develop, and evaluate KeSimba, a digital game designed to support idiom learning among primary pupils in Malaysia. The findings confirmed that idioms remain challenging due to their figurative and abstract nature, and that pupils display a strong preference for game-based learning. Teachers similarly recognised the need for more interactive and culturally relevant resources. In response, KeSimba was developed using the ADDIE model and validated by experts, achieving high usability and positive feedback.

Quantitative results demonstrated significant improvement in pupils' idiom achievement, supported by a large effect size, while qualitative findings revealed how KeSimba enhanced participation, confidence, and authentic use of idioms. Grounded in Constructivism and Self-Determination Theory, the study provides both theoretical and practical insights: contextualised, interactive tasks promote deeper comprehension, while autonomy, competence, and relatedness sustain motivation and persistence.

The implications of this study extend across three levels. For teachers, KeSimba should be integrated into structured literacy lessons with follow-up writing and speaking activities. The inclusion of lesson flow guides, integration kits, and assessment rubrics would ensure meaningful use. For policy makers and school leaders, the results underscore the importance of supporting locally developed digital tools that reflect cultural and linguistic contexts, thereby strengthening national digital literacy initiatives. For researchers, future studies should explore the long-term retention of idioms, the scalability of KeSimba across diverse school settings, and its potential adaptation for other figurative language forms such as proverbs and metaphors.

Ultimately, KeSimba demonstrates how culturally grounded, game-based learning can revitalise language education by bridging traditional and digital pedagogies. It offers a replicable model for integrating educational innovation with cultural preservation ensuring that pupils not only learn the language, but also the values and wisdom it conveys.

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VII. SUPPORTING INFORMATION

Additional supporting information for this study is provided in the [Appendix](#) to enhance the transparency, traceability, and reproducibility of the research process. These materials serve as complementary documentation to support the development, implementation, and evaluation of KeSimba as a game-based learning tool for Malay idiom instruction. The supporting information does not alter the main findings, interpretations, or conclusions presented in this article.

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