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# Developing and Validating Gamified English Teaching Materials to Enhance Achievement in Indonesian Elementary Schools

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**Abstract**

*This study systematically investigates the design, validation, and effectiveness of gamified English teaching materials tailored for Grade 5 learners in Parepare, Indonesia, within the framework of a Research and Development (R&D) based on the Alessi & Trollip model, materials were developed in three phases: Planning (needs analysis), Design (module drafting), and Development (validation and pilot implementation). Sixty students across two schools participated in pre- and post-tests, expert validation (N=3), practicality surveys (teachers N=4; students N=60), classroom observations, and interviews. Experts rated content validity at 92%; practicality exceeded 85%; and paired-sample t-tests showed significant improvement from pre-test (M=61.35, SD=7.12) to post-test (M=80.21, SD=6.45), p<.001. These results confirm that integrating game elements such as points, badges, levels, and narrative quests can substantially enhance engagement and EFL achievement among young learners.*

**Keywords: Gamification; EFL materials; elementary education; instructional development; learning outcomes**

## INTRODUCTION

Gamification has increasingly been recognized as a powerful instructional strategy in contemporary education, offering a fresh approach to long-standing challenges in learner motivation, classroom engagement, and content mastery. Originally derived from marketing and



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digital design, gamification refers to the application of game elements such as points, levels, badges, quests, and narrative progression in non-game contexts to increase user engagement and satisfaction (Deterding et al., 2011). In educational contexts, gamification aims to make learning experiences more compelling and participatory by tapping into learners' intrinsic and extrinsic motivations (Hamari et al., 2014). Particularly in language learning, gamification has been shown to support vocabulary acquisition, grammar retention, communicative competence, and learner autonomy (Alsawaier, 2017; Alcaide-Martínez & Taillefer, 2022; Sailer & Homner, 2020).

In English as a Foreign Language (EFL) education, the integration of gamified instructional tools is gaining momentum across various age groups and proficiency levels. However, the majority of empirical research and product development in this area has focused on digitally mediated learning in higher education or adult education settings (Loewen, Isbell, & Sporn, 2019). In contrast, there is a noticeable lack of gamified materials that are suitable for use in elementary school classrooms, especially those in under-resourced and low-tech environments. This disparity is significant, given that early language exposure and engagement during the primary years can play a critical role in long-term language proficiency and academic success (Piaget, 1952; Vygotsky, 1978).

In the Indonesian educational context, the need for more engaging and contextually appropriate EFL materials at the primary level is acute. While the *Kurikulum Merdeka* reform emphasizes joyful learning, learner autonomy, and the contextualization of instruction to local needs, many public elementary schools continue to operate with outdated, textbook-driven pedagogy. According to the World Bank (2018), despite increased national investment in education, learning outcomes across Indonesian primary schools remain suboptimal, particularly in language and literacy. This is compounded by a lack of teacher training in student-centered methodologies, insufficient instructional materials, and minimal access to digital technologies, especially in regional and rural areas.

A closer examination of classroom practices in Indonesian public elementary schools reveals a pattern of teacher-dominated instruction, passive student participation, and rote memorization strategies. English lessons, where present, are often treated as supplementary and are not adequately supported by curricular or pedagogical resources. This is particularly true for Grade 5 students who, developmentally, are in a critical phase for consolidating cognitive, social, and language skills but are rarely provided with immersive and meaningful learning opportunities (Johnson, Johnson, & Holubec, 2013; Camfield, 2017). Furthermore, standardized materials used across schools tend to be disconnected from students' interests and local culture, limiting their


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effectiveness and sustainability.

This study responds to these challenges by proposing a locally grounded, gamified solution: a set of printed English language teaching materials specifically designed for Grade 5 students in public elementary schools in Parepare, South Sulawesi. Unlike many gamification interventions that rely heavily on mobile apps or digital platforms (De La Cruz, 2021), the materials developed in this study are fully printable and intended for offline use. This design choice not only reflects the infrastructural realities of many Indonesian classrooms but also aligns with the pedagogical potential of low-tech, narrative-driven, and peer-collaborative instructional approaches (Branch, 2009; Zahara, 2023).

The theoretical foundation of this project is built on Self-Determination Theory (Deci & Ryan, 2000), which posits that human motivation is optimized when three psychological needs are met: autonomy, competence, and relatedness. By incorporating game mechanics such as points for mastery, badges for achievements, and story quests that foster agency, the materials aim to fulfill these needs within the learning process. Moreover, the cooperative tasks embedded in the modules are designed to promote relatedness through peer interaction and social learning—an approach well-supported by the work of Vygotsky (1978) and Johnson et al. (2013) on the importance of collaborative scaffolding in cognitive development.

Instructionally, the study draws upon the Alessi & Trollip (2001) model of educational product development, which structures the process into three sequential phases: Planning, Design, and Development. This model ensures that the learning materials are not only pedagogically sound but also grounded in authentic classroom needs and subjected to systematic validation. During the Planning phase, qualitative needs analysis was conducted through teacher interviews, student focus groups, and classroom observations to identify instructional gaps and learner preferences. In the Design phase, five thematic modules were developed, each integrating game elements aligned with curricular goals. The Development phase involved expert validation of the modules, pilot implementation in two schools, and the collection of both quantitative (pre-/post-tests, surveys) and qualitative (observations, interviews) data to assess validity, practicality, and effectiveness.

While gamification is sometimes criticized for promoting superficial engagement or rewarding extrinsic motivation (Dweck, 2006), this study approaches it as a tool for deepening—not diluting—the learning experience. Narrative quests are used not simply to entertain, but to contextualize language functions within meaningful scenarios. For example, instead of teaching vocabulary lists in isolation, modules invite students to solve mysteries, complete challenges, and


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participate in cooperative missions that require reading, writing, and speaking in English. These strategies resonate with Csikszentmihalyi's (1990) concept of "flow," in which learners become immersed in tasks that balance challenge and skill, leading to optimal engagement and intrinsic satisfaction.

Moreover, the development of these gamified materials aligns with emerging research on culturally responsive pedagogy and inclusive instructional design. In Indonesia's multilingual and multicultural school environments, generic teaching materials often fail to resonate with learners' lived experiences. By incorporating culturally familiar characters, local contexts, and cooperative group structures, the modules strive to be not only academically effective but also socially and culturally affirming (Nieveen & Plomp, 2013).

This study is significant for several reasons. First, it contributes to the under-researched area of print-based gamification in primary-level EFL contexts. Second, it offers an instructional model that is both scalable and adaptable for other regions in Indonesia and similar low-resource settings. Third, by using a mixed-methods approach grounded in the R&D tradition, the research ensures a high degree of validity, reliability, and practical relevance (Creswell & Plano Clark, 2018). The use of pre- and post-intervention testing, along with expert validation and classroom observations, enables a comprehensive evaluation of the intervention's impact on learning outcomes, classroom dynamics, and student attitudes.

In addition, the study provides important insights into the role of teacher readiness and professional development in implementing gamified instruction. Preliminary findings suggest that while many teachers are enthusiastic about student-centered methods, they require structured training and ongoing support to effectively deliver gamified content. Therefore, the development of supplementary teacher guides and professional learning modules is a potential avenue for future expansion and dissemination of the materials.

In summary, this study seeks to develop, validate, and evaluate a set of gamified English teaching modules designed for Grade 5 students in public elementary schools in Parepare, Indonesia. The research addresses key pedagogical, infrastructural, and motivational challenges faced by young EFL learners in low-tech environments. By combining established instructional design models with innovative game mechanics and grounded needs analysis, the study offers a replicable and sustainable model for enhancing primary English instruction in Indonesia and similar educational contexts. The findings are expected to enrich current discussions on gamification, inclusive pedagogy, and the localization of global educational innovations.


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## LITERATURE REVIEW

The use of gamification in education has received increasing scholarly attention over the past two decades. As a pedagogical approach, gamification involves integrating elements typically associated with games—such as points, levels, badges, narratives, and challenges—into non-game learning environments to increase student motivation, engagement, and learning outcomes (Deterding et al., 2011). In the context of English as a Foreign Language (EFL) instruction, gamification has emerged as a viable strategy for addressing persistent issues such as student boredom, low motivation, and disengagement (Alsawaier, 2017; Sailer & Homner, 2020).

### Theoretical Foundations of Gamification in Education

Gamification's educational potential is often explained through the lens of motivation theory. Deci and Ryan's (2000) Self-Determination Theory (SDT) suggests that optimal learning occurs when learners' psychological needs for autonomy, competence, and relatedness are met. Gamification strategies are uniquely suited to fulfill these needs. For example, providing students with choices in learning paths and roles (autonomy), giving points or badges for successful task completion (competence), and promoting group quests or cooperative learning activities (relatedness) aligns gamified learning environments with the principles of SDT.

Additionally, the concept of "flow" introduced by Csikszentmihalyi (1990) is frequently cited in gamification literature. Flow refers to a psychological state in which learners are fully immersed in an activity that balances challenge and skill. By designing learning tasks as progressively difficult quests or games, educators can create flow-inducing conditions that increase time-on-task and intrinsic motivation.

Skinner's (1953) behaviorist model also contributes to the theoretical underpinnings of gamification. The use of immediate feedback, rewards, and repetition mirrors operant conditioning principles, making game-based reinforcement a familiar and effective motivational strategy. However, modern gamification research seeks to move beyond behaviorism by embedding meaningful learning and learner agency within the game structure (Dweck, 2006).

### Gamification in Language Education

Empirical research on gamification in language learning indicates significant benefits across various domains, including vocabulary acquisition, grammar understanding, reading comprehension, and oral communication skills. Hamari et al. (2014) conducted a meta-review of gamification literature and found consistent positive effects on user engagement and motivation


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across educational settings. Similarly, Sailer and Homner (2020), in a meta-analysis of gamification studies, concluded that game elements such as points, feedback, and social interaction significantly improved learning outcomes and motivation in classroom settings.

Alcaide-Martínez and Taillefer (2022) reported that gamification in English translation courses led to improvements in student collaboration, motivation, and translation quality. While their study focused on university students in digital environments, the underlying principles—task-based learning, feedback loops, and narrative immersion are relevant and adaptable to younger learners in offline contexts. De La Cruz (2021) also demonstrated that EFL students in higher education responded positively to gamified content, particularly when the instructional design included real-world tasks, collaboration, and a compelling storyline.

For younger learners, the importance of play, story, and social interaction in language development has long been recognized. Piaget (1952) emphasized that children learn best through interaction with their environment and peers, while Vygotsky (1978) stressed the role of social context and scaffolding in cognitive development. Story-based gamification is particularly effective in young EFL learners because it supports both linguistic input and socioemotional engagement (Hsieh, 2017). Incorporating narrative quests into instructional materials helps situate vocabulary and grammar within meaningful, emotionally resonant contexts that children can understand and relate to.

While digital tools such as Duolingo and Kahoot! have popularized gamification in language learning, studies show that printed, analogue materials can also yield strong results, particularly in environments with limited access to technology. Camfield (2017) emphasized the importance of aligning gamified tools with learners' sociocultural context to mediate resistance and maximize efficacy. In classrooms where digital literacy is low or internet infrastructure is unreliable, printed gamified materials can offer an inclusive and accessible alternative.

**Gamification in the Indonesian Educational Context**

Indonesia presents a unique and complex context for the application of gamification in education. Despite nationwide curricular reforms under the *Kurikulum Merdeka* initiative, significant disparities persist in instructional quality and learning outcomes between urban and rural areas (World Bank, 2018). Although English is introduced early in some primary schools, its status as a non-compulsory subject in the national curriculum means that instructional materials, teacher training, and classroom time vary considerably across regions.

Existing studies on gamification in Indonesian classrooms have mostly been limited to


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secondary or tertiary education and often focus on digital applications (Zahara, 2023). There remains a noticeable gap in the literature concerning printed or offline gamified learning materials in elementary school EFL instruction. This gap is particularly problematic given that many Indonesian elementary schools lack sufficient digital infrastructure to implement app-based gamification.

In such environments, print-based gamified modules offer a viable and contextually appropriate solution. When designed with attention to cultural relevance, language level, and curricular alignment, these materials can engage students while avoiding the technological barriers associated with digital learning. Furthermore, they can promote cooperative learning and peer support, which are consistent with Indonesian classroom cultures that value togetherness and community (Johnson et al., 2013).

**Instructional Design Models for Gamified Materials**

Developing effective educational materials—whether gamified or otherwise—requires a rigorous and systematic instructional design approach. The model by Alessi and Trollip (2001) is well-regarded for educational product development, particularly in contexts that integrate both multimedia and print. The model involves three main stages: Planning (needs analysis, goal identification), Design (storyboarding, prototyping), and Development (implementation, revision, validation).

The Alessi & Trollip framework emphasizes iterative testing and refinement, aligning well with educational design research principles outlined by Nieveen and Plomp (2013). It also supports the use of both quantitative and qualitative methods, making it well-suited for mixed-methods studies that aim to validate instructional materials in real-world classrooms. When applied to gamified materials, this model ensures that game elements are not merely decorative but meaningfully integrated into pedagogical objectives.

Lawshe's (1975) content validity ratio method, widely used in instructional design, allows researchers to quantify expert evaluations of instructional content. This strengthens the empirical basis for judging whether gamified modules meet educational standards and learning goals. Expert validation is particularly important in contexts where educational quality varies and where new instructional approaches may encounter scepticism or misunderstanding among teachers and administrators.


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**Practicality and Impact of Gamified Instruction**

Beyond validity, the practicality of instructional materials is essential for their successful adoption and implementation. Practicality refers to how easily a product can be used by its intended users—in this case, teachers and elementary students. Factors influencing practicality include clarity of instructions, ease of classroom integration, engagement level, and alignment with curricular time constraints. Studies such as Camfield (2017) and Alsawaier (2017) show that when teachers find materials both useful and usable, their likelihood of sustained implementation increases. In the Indonesian context, where teacher autonomy and professional development resources vary widely, practicality is not just a convenience—it is a prerequisite for classroom success.

Equally important is the effect of gamified materials on student learning outcomes. Field (2013) emphasizes the importance of using inferential statistics, such as paired-sample t-tests and effect sizes (Cohen's d), to assess the impact of instructional interventions. Improvements in pre- and post-test scores can serve as reliable indicators of learning gains, while classroom observations and student feedback provide qualitative insights into engagement and behavioral changes. Gamified instruction has also been linked to psychosocial benefits, including increased confidence, improved peer relationships, and greater willingness to take risks in language use (Dweck, 2006; Hsieh, 2017). These affective factors are crucial for language development, particularly in early learners who are sensitive to both success and failure in classroom settings.

**Challenges and Gaps in the Literature**

While the benefits of gamification are well-documented, challenges remain in translating theory into practice, especially in diverse educational contexts like Indonesia. Common critiques include the potential for overemphasis on extrinsic rewards, lack of teacher familiarity with game mechanics, and the risk of shallow learning if the gamified activities are not cognitively demanding (Hamari et al., 2014). Additionally, many studies fail to account for long-term retention or the transferability of gamified learning to other language domains such as writing or speaking.

There is also a need for more research into the scalability of gamified materials and their adaptability across various classroom environments. Most existing studies rely on small-scale implementations or one-off pilot studies, leaving open questions about sustainability and generalizability. Moreover, few studies provide comprehensive guidelines for teacher training or integration into national curricula.


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## RESEARCH METHOD

This study employed a Research and Development (R&D) approach to design, validate, and evaluate gamified English teaching materials for Grade 5 students in Indonesian elementary schools. The R&D model was based on Alessi and Trollip's (2001) instructional design framework, which comprises three main stages: Planning, Design, and Development. These stages ensured that the resulting materials were grounded in learner needs, systematically structured, and tested for both effectiveness and practicality. The methodology used in this research integrates both quantitative and qualitative data collection and analysis techniques, reflecting a mixed-methods paradigm suitable for instructional design studies.

### Research Design

The research design is categorized as educational R&D, which is defined by Borg and Gall (1983) as the process of developing and validating educational products through a systematic procedure. In this context, the educational product refers to a set of gamified English teaching modules intended for classroom use. The design was chosen to produce both a tangible product and empirical evidence regarding its validity, practicality, and effectiveness. The design aligns with the goals of *Kurikulum Merdeka*, which emphasizes student engagement, contextual relevance, and the autonomy of teachers in instructional decisions.

### Setting and Participants

The study was conducted in two public elementary schools in Parepare City, South Sulawesi, Indonesia: SDN 12 Parepare and SDN 47 Parepare. These schools were selected based on accessibility, willingness to participate, and the availability of English lessons in their Grade 5 curricula. The schools represent typical urban primary schools with average class sizes of 30–35 students.

Participants included:

a. Students: A total of 60 Grade 5 students participated in the pilot testing phase (30 from each school). They were selected using purposive sampling, ensuring they had previous exposure to English instruction.
b. Teachers: Four Grade 5 homeroom teachers (two per school), who had at least three years of teaching experience and were responsible for teaching English.
c. Experts: Two content experts in English language education (doctoral degree holders) and one instructional media expert, who participated in the validation phase


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**Phase 1: Planning**

The planning stage involved identifying the learning needs, learner characteristics, and contextual constraints. Data collection techniques included:

1. Interviews with Teachers: Semi-structured interviews were conducted with four teachers to explore current teaching practices, challenges, and preferences regarding instructional materials.
2. Focus Group Discussions (FGDs): Two FGDs were held with a total of 12 students (six per school) to understand their attitudes, interests, and experiences related to English learning.
3. Classroom Observations: Non-participant observations were carried out in five regular English lessons to assess student engagement and instructional strategies. Field notes captured evidence of classroom dynamics, time-on-task, and student responses.

Findings from this phase revealed low student engagement, a heavy reliance on teacher-centered methods, and a lack of appealing English materials. These insights guided the subsequent design stage.

**Phase 2: Design**

The design phase translated the insights from the planning stage into structured learning modules. The key components of the design included:

1. Themes: Five modules were developed, each representing common topics in the Grade 5 curriculum (e.g., “My Family,” “Daily Activities,” “My School”).
2. Game Elements: Each module incorporated gamification mechanics such as:
    a. Points: Earned through completing tasks and quizzes.
    b. Badges: Awarded for achieving specific milestones (e.g., perfect scores, consistent attendance).
    c. Levels: Modules were structured from beginner to advanced levels.
    d. Narrative Quests: Each module featured a storyline with characters and missions related to the target vocabulary and grammar.
3. Formats: Materials were designed in both printed and interactive digital formats (e.g., clickable PDFs with embedded audio and animations).
4. Instructional Activities: Each module included vocabulary introductions, grammar practice, communicative games, and formative assessments.


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**Phase 3: Development**

This phase involved the iterative development and testing of the materials. Key steps included:

1. Expert Validation

   The first draft of the modules was submitted to three experts. Each expert evaluated the materials using a structured questionnaire comprising four domains:

   a. Content accuracy
   b. Instructional design
   c. Visual and media quality
   d. Linguistic and cultural appropriateness

   Experts rated each item on a four-point Likert scale (1 = not valid; 4 = very valid). The average rating across items determined the overall validity score. Qualitative comments were also collected to guide revisions.

2. Revision

   Based on expert feedback, several revisions were made. For instance, task instructions were simplified, colour schemes were adjusted for readability, and the vocabulary scope was aligned more closely with the national curriculum.

3. Pilot Testing

   The revised modules were implemented over six weeks in the two participating schools. The teaching intervention consisted of 10 sessions (2 per week), with each session lasting 40–45 minutes. Teachers used the modules as their main instructional material during these sessions.

4. Data Collection Instruments

   a. Achievement Tests: A 20-item multiple-choice test (10 vocabulary, 10 grammar) was administered before and after the intervention. The test was validated by a panel of experts and showed good internal consistency (Cronbach's alpha = 0.82).
   b. Practicality Surveys: Teachers and students completed surveys consisting of 10 Likert-scale items assessing usability, clarity, engagement, and relevance.
   c. Observation Checklist: Researchers observed all sessions using a 12-item checklist that tracked engagement behaviors (e.g., participation, cooperation, enthusiasm).
   d. Post-implementation Interviews: Semi-structured interviews were conducted with four teachers and 12 students to capture qualitative feedback.


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**Data Analysis**

1. Quantitative Analysis: Descriptive statistics were used to summarize validation and practicality scores. A paired-sample t-test was conducted to compare pre- and post-test means, with a significance threshold set at $p < 0.05$. Effect size was calculated using Cohen's *d* to assess the magnitude of learning gains.
2. Qualitative Analysis: Interview transcripts and observation notes were thematically analyzed. Codes were developed inductively and grouped into themes such as "motivation," "clarity," "collaboration," and "barriers."

**Ethical Considerations**

The research followed ethical procedures approved by the institutional ethics board of Universitas Negeri Makassar. Informed consent was obtained from school authorities, teachers, and students' guardians. All participants were assured of confidentiality and anonymity.

**Trustworthiness**

To ensure validity and reliability, triangulation was used across multiple data sources: tests, observations, surveys, and interviews. Member-checking was applied during interviews to confirm accuracy of responses. Expert reviews enhanced content validity.

In summary, the R&D approach used in this study facilitated the systematic development and empirical validation of gamified English teaching materials, ensuring they were not only theoretically sound but also practically implementable and demonstrably effective in real classroom conditions.

**RESULTS AND DISCUSSION**

This section presents the findings from the development and implementation of the gamified English teaching materials, as well as their interpretation in light of prior literature. The discussion is organized into five subsections: (1) needs analysis results, (2) product design highlights, (3) expert validation outcomes, (4) practicality testing, and (5) effectiveness of the intervention.

**Needs Analysis Results**

The initial planning phase included qualitative interviews with teachers and students, along with classroom observations. The following key findings emerged:


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a. Teachers expressed that the existing materials were inadequate, lacking visual and interactive elements. All four teachers reported difficulty in maintaining student interest throughout the lesson.
b. Students described the materials as "boring" and reported they preferred stories, characters, and games.
c. Observation notes highlighted low engagement, limited use of English in interactions, and dominant teacher-centered approaches.

These findings justified the need for gamified materials that could integrate play-based and narrative elements to enhance attention and retention.

**Product Design Highlights**

The gamified modules were structured across five themes (e.g., My School, My Hobbies) and embedded the following game mechanics:

a. Points and Levels: Each activity offered points that contributed to student level progression.
b. Badges: Students earned visual rewards for completing challenges and helping peers.
c. Narrative Quests**:** Each lesson centered around a storyline involving fictional characters navigating real-life situations in English.
d. Cooperative Tasks: Designed to foster collaboration, especially for students with lower proficiency levels.

**Expert Validation Outcomes**

Three experts rated the materials across four dimensions: content accuracy, instructional design, media layout, and cultural fit. Their ratings were based on a four-point Likert scale.

**Table 1. Expert Validation Results**

| Criteria | Expert 1 | Expert 2 | Expert 3 | Average Score (%) | Validity Category |
|---|---|---|---|---|---|
| Content Accuracy | 4 | 3 | 4 | 91.6 | Very Valid |
| Instructional Design | 4 | 4 | 3 | 91.6 | Very Valid |
| Media Layout & Navigation | 3 | 4 | 4 | 91.6 | Very Valid |


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| | | | | | |
|---|---|---|---|---|---|
| Cultural Relevance | 4 | 3 | 4 | 91.6 | Very Valid |

The overall average of 91.6% indicated that the materials met high standards of academic and pedagogical validity.

**Practicality Testing**

Practicality refers to the usability of the product in real classroom settings. It was measured through surveys administered to teachers and students post-implementation.

**Table 2. Practicality Survey Results (N=64)**

| Respondents | Mean Score (/4) | Practicality (%) | Category |
|---|---|---|---|
| Teachers (n=4) | 3.44 | 86 | Practical |
| Students (n=60) | 3.56 | 89 | Very Practical |

Key qualitative feedback from teachers included:

a. *"Students were more active and asked more questions."*
b. *"The badges system motivated even the shy students."*

Students noted:

a. *"We like the story missions—it felt like playing a game."*
b. *"I wanted to collect all the badges!"*

Observation checklists reinforced this data. Engagement indicators (e.g., active participation, turn-taking, peer collaboration) showed an increase from baseline 62% to 88% during gamified sessions.

**Effectiveness of Gamified Materials**

The main objective of the intervention was to assess improvement in students' English achievement. This was measured using a 20-item pre- and post-test.

**Table 3. Comparison of Pre- and Post-Test Scores (N = 60)**

| Test | Mean Score | SD | t-value | df | p-value | Cohen's d |
|---|---|---|---|---|---|---|
| Pre-Test | 61.35 | 7.12 | | | | |


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| | | | | | | |
|---|---|---|---|---|---|---|
| Post-Test | 80.21 | 6.45 | 18.74 | 59 | <.001 | 2.42 |

The paired-sample t-test showed a significant improvement ($p < 0.001$) with a very large effect size (Cohen's d = 2.42). These results provide strong evidence of the effectiveness of the gamified materials.

**DISCUSSION**

The results affirm that gamification principles, when embedded in age-appropriate and curriculum-aligned instructional materials—significantly enhance learner motivation and performance. The high validity scores validate the instructional soundness, while practicality data confirm the accessibility and usability of the materials in real classrooms. These findings are consistent with Deterding et al. (2011) and Hamari et al. (2014), who argue that gamification increases engagement by creating goal-oriented learning environments. The dramatic improvement in student test scores aligns with Zahara (2023) and Alcaide-Martínez & Taillefer (2022), who found similar effects of gamified instruction in language learning contexts.

Moreover, this study addresses gaps in prior research by focusing on young EFL learners in a non-digital, low-resource setting. Unlike Duolingo-style platforms that require personal devices and internet access, the modules developed here were printable and teacher-friendly. Limitations include the study's geographic scope (limited to Parepare), short duration (six weeks), and lack of long-term retention measurement. Future research should examine the sustainability of engagement, assess language retention after several months, and explore digital extensions of the printed modules. Nonetheless, this study offers empirical evidence and a practical framework for developing gamified instructional materials adaptable to a variety of low-tech learning environments, especially in Southeast Asia and similar contexts.

**CONCLUSION**

This study set out to develop and validate gamified English teaching materials tailored for Grade 5 elementary school students in Parepare, Indonesia. Guided by the Alessi & Trollip (2001) instructional development model, the research was structured into three key phases: Planning, Design, and Development. The product, five thematic modules integrating gamification principles such as points, badges, levels, and narrative quests was subjected to rigorous expert validation, classroom pilot testing, and pre-/post-assessment.

The findings of the study indicate that the gamified materials are valid, practical, and



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effective. Expert evaluations averaged 91.6% across dimensions such as content, instructional design, media layout, and cultural relevance, confirming their pedagogical soundness and alignment with curriculum standards. In terms of practicality, teacher and student surveys yielded high ratings of 86% and 89% respectively, supported by classroom observations that showed increased engagement, active participation, and enhanced peer collaboration. Regarding effectiveness, students' test scores significantly improved from a pre-test mean of 61.35 to a post-test mean of 80.21, with a large effect size (Cohen's *d* = 2.42), demonstrating a strong positive impact on learning outcomes.

These results are particularly notable given the low-tech context in which the study was conducted. Unlike many gamified interventions that depend on digital platforms, the materials developed in this study were print-based and suitable for schools with minimal ICT infrastructure. Furthermore, the materials' integration of storytelling and cooperative gameplay contributed to a classroom atmosphere characterized by motivation, inclusiveness, and joy in learning—a stark contrast to the boredom and disengagement reported during the needs analysis phase. The study reinforces the theoretical principles of gamification by demonstrating how properly implemented game elements can address the psychological needs of autonomy, competence, and relatedness in young learners (Deci & Ryan, 2000). It also adds to the growing body of literature showing that gamification can be successfully localized to specific educational contexts, including under-resourced school environments in Southeast Asia.

In conclusion, the gamified English modules developed in this study are an innovative and empirically supported contribution to elementary education in Indonesia. They provide a scalable, curriculum-aligned, and student-centered solution to the problem of low engagement and underachievement in English learning at the primary level.

## FUTURE DIRECTIONS

While the current study offers promising results, several avenues for further research and development remain open. First, long-term retention and transferability should be explored through delayed post-tests and by examining whether gamified learning translates into improved performance in other language domains, such as writing or speaking. Additionally, replicating the study in rural, peri-urban, and remote school settings would help assess the influence of contextual variables such as school infrastructure, teacher readiness, and student literacy. Another critical area is the integration of these materials with digital learning platforms. Transitioning from print-based to mobile or web-based formats could enhance accessibility and


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introduce features like adaptive difficulty, personalized learning paths, and progress tracking, which benefit both students and educators.

Furthermore, effective implementation of gamified instruction depends on teacher competence and confidence. Future research could focus on designing professional development programs, including workshops, mentoring, and instructional guides to support educators. Cross-curricular expansion is also a compelling direction—gamification strategies proven effective in English could be adapted for other subjects to encourage interdisciplinary learning. Lastly, exploring psychosocial outcomes such as student motivation, confidence, and peer collaboration would provide a more holistic understanding of gamification's impact. These future directions can collectively contribute to a more comprehensive, inclusive, and sustainable model of gamified learning in elementary education.

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