



Development of Comic-Based Arabic Language Learning Materials for Students at Islamic Junior High School, Medan: Implementation of the ADDIE R&D Model

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Article Info	Abstract
<p>Received: 2026-05-22 Revised: 2026-06-09 Accepted: 2026-06-10</p> <p>Keywords: Learning Materials; Comic Books; Arabic; ADDIE; R&D</p> <p>DOI: 10.24256/ideasv14i1.10755</p> <p>Corresponding Author: Lia Mahardika Harahap liamahardikahrp30@gmail.com Postgraduate Programme in Arabic Language Education, Sultan Syarif Kasim State Islamic University, Riau</p>	<p><i>Arabic language learning at lower secondary school level often faces various challenges, such as low student motivation and a lack of engaging and innovative teaching materials. Although a number of studies have examined the use of visual media in language learning, few have systematically developed illustrated comic books specifically for Arabic language learning at Islamic lower secondary schools within the context of local Indonesian culture this gap forms the basis of this research. This study aims to develop illustrated comic-based Arabic language learning materials for Year 8 students at Al-Ulum Terpadu Islamic Junior High School in Medan using the Research and Development (R&D) method with the ADDIE model (Analysis, Design, Development, Implementation, Evaluation). Data were collected through observation, interviews, validation questionnaires, and learning outcome tests. The results of the subject matter expert validation showed a feasibility percentage of 87.5%, whilst the media expert validation yielded 85.0%; both fell within the 'highly feasible' category. The pilot test with students yielded an average positive response score of 88.3%, with a learning gain (N-Gain) of 0.62, which falls within the moderate-to-high category. Unlike Arabic language learning materials, which are generally text-based, the illustrated comic media developed in this study integrates contextual visual narratives with vocabulary and dialogue content in a cohesive manner, thereby making a tangible contribution to the innovation of Arabic language learning materials in Islamic secondary schools.</i></p>

1. Introduction

The Arabic language holds a strategic position within the Islamic education system as it is the language of the Qur'an, the hadith, and both classical and contemporary Islamic literature. At lower secondary school (SMP) level, the mastery of Arabic aims not only to develop linguistic competence but also to prepare students to understand Islamic teachings more deeply. However, the reality on the ground indicates that Arabic language learning at the lower secondary school level still faces significant challenges.

Based on the results of initial observations at Islamic Junior High School in Medan, it was found that Arabic language teaching is still dominated by the use of textbooks and the lecture method. This situation means that student engagement in the learning process is not yet optimal. An initial survey of 32 Year 8 pupils showed that 75% of pupils stated that Arabic felt difficult to learn, 68% felt bored with the existing teaching methods, and only 42% stated that they had high motivation to learn Arabic. These data indicate an urgent need for more engaging and effective teaching materials.

Several previous studies have examined the use of visual media in language learning, including a study by Liu (2004) which demonstrated an improvement in reading comprehension in second language learning through the use of comics. In Indonesia, Castillo-Cuesta and Quinonez-Beltran (2022) reported on the effectiveness of digital comics in enhancing foreign language vocabulary during the pandemic. Furthermore, a systematic review by Hasnida et al. (2024) on trends in research into Arabic language learning media in Indonesia indicates that visual-based approaches have been among the most extensively developed over the past five years.

Nevertheless, these studies have not specifically developed illustrated comic media using a systematic ADDIE model approach tailored to the context of Islamic junior high schools and incorporating Islamic values. It is this gap that serves as the primary justification for the development of media in this study. The theoretical framework of this study is based on four main theories.

Firstly, Mayer's (2021) Cognitive Theory of Multimedia Learning, which asserts that individuals learn more effectively through a combination of words and images than through text alone. Secondly, Dale's (1969) Visual Learning Theory, as outlined in the Cone of Experience, which identifies visual experience as one of the learning modalities with a high retention rate. Third, Vygotsky's Constructivist Theory, which emphasises the importance of social context and scaffolding in building understanding, where comic narratives provide an authentic linguistic context. Fourth,

Brown's (2007) Motivation Theory, which states that interest in learning media directly influences students' engagement and intrinsic motivation.

Against this background, this study formulates three main research questions: (1) What is the process of developing illustrated comic-based media using the ADDIE

model for Arabic language learning at Islamic Junior High School in Medan? (2) What is the level of suitability of the illustrated comic-based media as determined by subject matter experts and media experts? (3) What is the impact of using illustrated comic-based media on students' motivation and Arabic language learning outcomes?

2. Literature Review

Learning Media and Their Role in Language Learning

Learning media are an integral component of the modern teaching and learning process, not merely an instructional supplement. Arsyad (2017) defines learning media as a means of enhancing the delivery of messages so that learning objectives can be optimally achieved. Rusman (2012) emphasises that the use of visual media has been proven to increase students' motivation, interest and engagement in the learning process. In the context of Arabic language learning, a systematic review by Hasnida et al. (2024) of trends in research on Arabic language learning media in Indonesia during 2019–2023 found that the development of technology-based media dominated research topics, with effectiveness in increasing interest and motivation to learn being its main contribution.

This statement is supported by the findings of Flores-González et al. (2024), which show that e-comics are capable of significantly improving lexical competence in a virtual higher education setting. The relevance of these findings to the context of Islamic junior high schools lies in their fundamental principle: media that integrate visual and verbal elements contextually have been shown to be more effective than a purely textual approach, for both adult and adolescent learners.

Comics As a Learning Medium

Comics are a visual medium that combines images and text in the form of sequential story panels. Sadiman (2012) explains that educational comics are a series of images that depict events and dialogue relevant to the learning message. Munir (2013) states that comics are able to present a learning context through a storyline, making the material more relevant to students' experiences. McCloud (1993) adds that comics are able to simplify complex concepts through visual narration, thereby facilitating the process of understanding.

Castillo-Cuesta and Quinonez-Beltran (2022) conducted an experimental study on the use of digital comics in English as a Foreign Language (EFL) vocabulary learning during the COVID-19 pandemic. The findings of this study, published in a Scopus-indexed journal, revealed that digital comics significantly improved students' vocabulary acquisition, engagement and motivation to learn. These findings are consistent with a previous study by Golding and Verrier (2021), which confirmed that visual literacy interventions using educational comics measurably improve reading comprehension.

Specifically in the context of Arabic language learning, Panjaitan and Rasyid (2023) developed Arabic comic-based learning materials using Canva, which proved effective in enhancing the learning interest and vocabulary mastery of students at Madrasah

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Tsanawiyah. At a more specific level, Hijriyah et al. (2022) developed digital comic media for qirā'ah instruction in Madrasah Ibtidaiyah and reported a significant improvement in reading ability. These two studies demonstrate that digital comics hold great potential for Arabic language learning across various levels of Islamic education in Indonesia.

The advantages of comics in Arabic language learning include: (a) the presentation of dialogue in a context relevant to students' lives (Sanjaya, 2016); (b) improved retention of Arabic vocabulary through the visualisation of stories (Sudjana, 2016); (c) the development of reading and speaking skills through conversational models (Djamarah, 2013); (d) the reduction of anxiety in language learning through an engaging narrative approach (Rohani, 2019). Nevertheless, the use of comics also has limitations, including the difficulty of creating communicative storyboards, the need for high-quality illustrations, and the necessity of validation by Arabic language experts to ensure that the dialogue adheres to grammatical rules.

The Addie Development Model

The ADDIE model (Analysis, Design, Development, Implementation, Evaluation) is a systematic framework widely used in instructional design (Branch, 2009). Spatioti, Kazanidis, and Pange (2022), in a meta-analysis published in the journal *Information* (indexed in Scopus, MDPI), reviewed 58 articles on the use of the ADDIE model in distance education and concluded that this model is effective in guiding structured and systematic instructional design.

Adeoye (2024), in his comprehensive study published in the *Indonesian Journal of Education*, identifies current trends in the application of the ADDIE model, including the development of digital teaching materials, the enhancement of digital literacy, and the development of modules for various levels of education. This model was selected for this study because it has a structured, organised sequence of stages, is flexible and iterative, and has been proven effective in producing valid and practical learning media products (Sugiyono, 2019). Compared to other development models such as Dick & Carey or Kemp, the ADDIE model offers ease of implementation with a more concise yet comprehensive sequence of stages.

Arabic Language Learning in Junior High School

Arabic is the second language taught in Islamic schools. Effendy (2009) explains that Arabic language learning must focus on the four language skills (listening, speaking, reading and writing) and can be optimised with the support of appropriate learning materials. In the Indonesian context, a study by Wahdah et al. (2022), indexed in Scopus, shows that innovations in methods and media in Arabic language learning can significantly increase students' motivation to learn, even in distance learning conditions.

Trends in research on Arabic language learning materials in Indonesia between 2019 and 2023, as summarised by Hasnida et al. (2024), reveal the dominance of R&D methods and their contribution to the development of technology-based materials that enhance interest, motivation and the quality of learning. It is within this context that illustrated

comic books emerge as a relevant alternative to bridge the gap between learning objectives and real-world classroom conditions.

2. Method

Research Design

This study employs a Research and Development (R&D) approach using the ADDIE model (Branch, 2009; Sugiyono, 2019). Spatioti et al. (2022) emphasise that the ADDIE model is a flexible and effective instructional design framework for various educational contexts, including the development of digital media. The ADDIE model consists of five interrelated stages: Analysis, Design, Development, Implementation, and Evaluation.

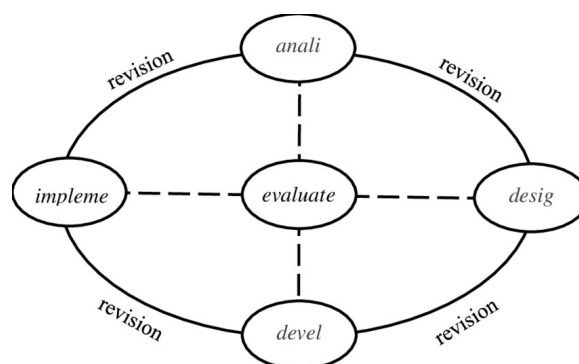


Figure 1. Diagram of the ADDIE development model (Cabang, 2009)

Research Participants and Location

The research subjects were 32 Year 8 pupils at SMP Islam Al-Ulum Terpadu Medan in the 2024/2025 academic year, comprising 17 female pupils (53.1%) and 15 male pupils (46.9%), aged between 13 and 14 years. Subjects were selected using purposive sampling based on the following considerations: (1) Year 8 is the year group with the most complex Arabic curriculum at secondary school level; (2) the Year 8 Arabic teacher was willing to collaborate on the research; (3) the school has facilities that support the implementation of digital media.

Development Procedure (Addie)

Stage 1: Analysis: A needs analysis was conducted through classroom observations (3 sessions), in-depth interviews with 2 Arabic teachers, and a preliminary questionnaire administered to 32 students. The analysis covered: (a) identification of learning issues, (b) analysis of student characteristics, (c) analysis of the Year 8 curriculum content, and (d) analysis of media requirements.

Stage 2 Design: A storyboard, character designs, and a sequence of materials were designed, tailored to themes from the daily lives of students at Islamic junior high schools (school, mosque, family). The materials included mufradat (vocabulary), hiwar (conversation), and basic sentence structures.

Stage 3: Development: A prototype of the illustrated comic was developed in both print (A5, full colour) and digital (PDF) formats. Once the prototype was complete, it underwent expert validation prior to being trialled with pupils.

Stage 4 Implementation: The material was implemented across four lessons in Year 8. A pre-test was administered before the material was used, and a post-test was administered after the four lessons.

Stage 5 Evaluation: Formative evaluation (revision based on validator feedback and limited trials) and summative evaluation (analysis of improvements in learning outcomes and student responses) were carried out.

Instruments, Validity, And Data Analysis

The instruments used included a subject matter expert validation sheet (20 items), a media expert validation sheet (18 items), a student response questionnaire (15 items), and pre- test and post-test questions (25 multiple-choice items and 5 essay questions). The validity of the instruments was tested using Pearson's Product Moment correlation (calculated $r > 0.361$; $n=30$; $\alpha=0.05$) and reliability using Cronbach's Alpha ($\alpha=0.78$ for the questionnaire; $\alpha=0.81$ for the tests). The percentage of achievement was calculated using the formula $P = (\text{score obtained} / \text{maximum score}) \times 100\%$, with a pass criterion of $\geq 61\%$. Improvements in learning outcomes were measured using the N-Gain Score.

3. Result and Discussion

Product Development Results (Addie Phases)

The development process, using the ADDIE model, resulted in an illustrated comic book entitled "Let's Learn Arabic!", comprising three episodes: (1) At School (vocabulary relating to school objects), (2) At the Mosque (vocabulary and dialogue about worship), and (3) Daily Life (dialogue and vocabulary for daily activities). Each episode consists of 12–15 pages of colour comics with Arabic text in diacritical marks, Latin transliteration, and Indonesian translations.

Results Of Expert Validation

Table 1. Results of Validation by Subject Matter Experts and Media Experts

Assessment Aspect	Score	Percentage	Category
Content Expert Validation	70/80	87.5%	Highly Recommended
Media Expert Validation	61/72	85.0	Highly Recommended
Student Response	42/60	88.3	Very Positive

Source: Primary Research Data, 2024



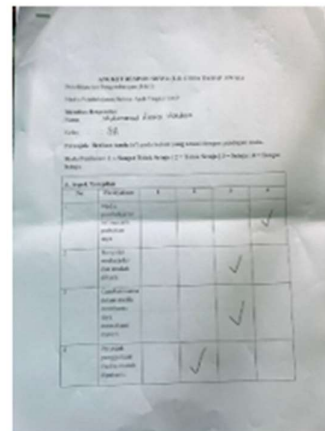
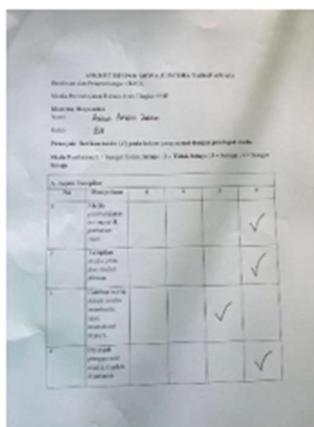
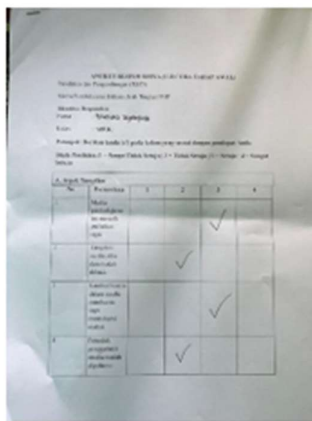
Figure 2. Expert Validation (Content & Media)

Pre - Test and Post - Test Results

Table 2. Comparison of Pre-test and Post-test Results

Indicator	Pre-test	Post-test	N-Gain
Average score	61.25	79.38	0.62 (Moderate)
Students who passed (≥ 75)	10 (31.3%)	26 (81.3%)	+50 percentage points
Highest score	80	96	—
Lowest score	40	62	—

Source: Primary Research Data, 2024



The Effectiveness of Comic Books in Enhancing Learning Motivation

The high level of positive student response (88.3%) to illustrated comic media is consistent with Mayer's (2021) Cognitive Theory of Multimedia Learning, which states that the simultaneous combination of words and images can increase cognitive engagement and strengthen memory. In its development, Mayer (2024) emphasises that this theory continues to evolve by incorporating the affective dimension as a key factor influencing the effectiveness of multimedia learning.

This effectiveness has also been empirically confirmed by Castillo-Cuesta and Quinonez- Beltran (2022), who found a significant improvement in vocabulary acquisition and learning motivation through digital comics. Similar findings were reported by Flores-González et al. (2024) in the context of e-comics for higher education, where students' emotional engagement with visual narratives was shown to enhance information retention. Comic media with contextual visual narratives successfully create an enjoyable learning experience, reduce language anxiety, and enhance intrinsic motivation.

An enjoyable learning experience also supports Vygotsky's constructivist theory in terms of scaffolding as comics provide an authentic linguistic context so that students can build their understanding gradually. In the specific context of Arabic language learning, findings by Panjaitan and Rasyid (2023) indicate that Canva-based comics not only improve vocabulary acquisition but also enhance students' interest and confidence in using Arabic.

The Effectiveness of Comic Media in Improving Learning Outcomes

An increase in N-Gain of 0.62 (moderate category) confirms that illustrated comics are effective in improving learning outcomes. The increase in the pass rate from 31.3% to 81.3% indicates a significant impact. This finding is consistent with the results of the systematic review by Flores-González et al. (2024), which showed a significant improvement in lexical competence through e-comics. The advantage of this medium in improving learning outcomes can be explained through Dale's Cone of Experience (1969): the visualisation of vocabulary and dialogue within a narrative context provides a more meaningful learning experience compared to memorising from a vocabulary list.

Research by Hijriyah et al. (2022), which developed digital comic media for qirā'ah learning in MI, also supports this finding, as digital comics were shown to significantly improve Arabic reading skills. Golding and Verrier (2021), in a study based on visual literacy, demonstrated that training in reading educational comics improves reading comprehension in a measurable and sustainable manner a finding relevant to the improvement in hiwar reading skills observed in this study.

Limitations And Recommendations

This study has several limitations that must be critically acknowledged.

Firstly, the study was conducted in a single school with a relatively small sample (32 pupils), so the results should be generalised with caution. Secondly, there was no control group in the study design. Thirdly, as many as 6 students (18.7%) did not achieve the minimum passing mark, indicating that comic books may be less effective for students with very low Arabic reading skills. Fourthly, this study has not measured the long-term retention of students' understanding.

Based on the research findings, several practical recommendations can be made. For Arabic language teachers, this comic medium can be used as a learning supplement. For future researchers, it is recommended to conduct research using a quasi-experimental design involving a control group, or to develop comic media equipped with audio to accommodate auditory learning styles a direction also recommended by Wahdah et al. (2022) in the context of innovations in Arabic language teaching methods.

4. Conclusion

This study successfully developed a comic-based Arabic language learning resource using the ADDIE model at SMP Islam Al-Ulum Terpadu in Medan. Three main conclusions can be drawn: Firstly, the comic-based resource developed was deemed highly suitable based on validation by subject matter experts (87.5%) and media experts (85.0%), and received a very positive response from students (88.3%).

Second, the use of the illustrated comic medium effectively improved students' Arabic learning outcomes, as evidenced by an N-Gain of 0.62 (moderate category) and an increase in learning achievement from 31.3% to 81.3%. Thirdly, the ADDIE model proved effective in producing media products that are systematic, validated, and aligned with learning needs, consistent with the findings of Spatioti et al. (2022) regarding the effectiveness of ADDIE in instructional design. This media makes a tangible contribution to the innovation of Arabic language learning at secondary-level Islamic schools, although there remain limitations that need to be addressed in future research.

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