



The Effectiveness of Digital Comics in Arabic Vocabulary Teaching

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Abstract: This article discussed the role of technology in the learning process, especially in Arabic language teaching at MTsN 1 Makassar City. Teachers are faced with the challenge of improving students' ability to master vocabulary which conventional methods are often less interesting. This research proposes using visual media, such as digital comics, to make the learning process more interesting and effective. Digital comics are considered as media that can increase students' motivation and understanding and have been proven effective in increasing students' interest and understanding, especially in learning vocabulary. Research and Development (R&D) method was used in this research with the Four-D model which includes the stages of define, design, develop, and disseminate. This research was conducted at MTsN 1 Makassar City, with subjects consisting of two media experts, four material experts, and twenty-seven students of grades VII, VIII, and IX. The results showed that Arabic digital comics have a very good level of feasibility based on the responses of media experts, material experts, and students, with an average score percentage of 90.66% from the media aspect, 91.5% from the material aspect, and 78.07% from student responses. Visual media such as digital comics can attract students' interest, increase learning motivation, and help them understand Arabic vocabulary better. It is expected that this research can be a reference in developing innovative and effective language-learning media in the future.

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Introduction

Learning is the process of distributing knowledge between students and teachers. Teachers assist students in the process of changing their understanding of themselves, overcoming self-doubt, developing self-control and character traits, and becoming aware of their own values.¹ The success of the educational process needs to be balanced with the ability of teachers to identify appropriate and interesting materials to be used in

¹ J Beno, A.P Silen, and M Yanti, "Developing Digital Comic Media for Learning Qira'ah for the Fifth Grade Students of Madrasah Ibtidaiyah Umi", *Braz Dent J.* 33, no. 1 (2022): 1–12.

improving the learning process. It illustrates how their priority is to support students in developing accurate and relevant technical skills in the utilization of technology and developing the skills to think appropriately related to the use of digital tools.²

Over time, a previously unimaginable influence was the development of technology in the field of education or other fields. Meanwhile, teachers in all school programs are required to have digital literacy skills in order to effectively utilize various challenging learning materials. The collapse of the global education system due to the pandemic has forced educators to work in different situations.³ Technology as a teaching medium needs to be developed systematically so that teachers can easily use it. In addition, education that is fully integrated with technology can increase the effectiveness of dialogue-based learning and improve the quality of student understanding in digital learning.⁴ This is supported by research on the state of digital learning during the COVID-19 pandemic. It showed that educational success depends on students' digital competence, self-awareness, emotional intelligence, and access to digital resources.⁵ The utilization of technology in education, teachers' motivation and knowledge must always be improved to support the learning process, especially Arabic.⁶ One of the most important languages in the world, Arabic is spoken by about 313 million people worldwide.⁷ In addition, Arabic is prominent in Islamic education because many Indonesian students learn Arabic as part of their religious education in Islamic schools. However, the most common problem experienced by students in Arabic learning is the inability to understand the language.

Many students experienced the difficulty especially when it comes to vocabulary. In fact, vocabulary mastery is crucial to communicate well in the language. This phenomenon is caused because Arabic language learning is often negatively influenced

² Anastasia Gouseti and et al., "Exploring Teachers' Perceptions of Critical Digital Literacies and How These Are Manifested in Their Teaching Practices", *Educational Review* (2023): 1–35.

³ Hadi Mousavi and Majid Davoudi Nasr, "Evaluating the Relationship between Overconfidence of Senior Managers and Abnormal Cash Fluctuations with respect to Financial Flexibility in Companies Listed in Tehran Stock Exchange", *Technium Social Sciences Journal* 11, (2020):210-225.

⁴ Dandan Yang and et al., "The Role of Bilingual Discussion Prompts in Shared E-Book Reading", *Computers & Education* 190 (2022): 104622.

⁵ Ole Engel and et al., "Digital Studying in Times of COVID-19: Teacher-and Student-Related Aspects of Learning Success in German Higher Education", *International Journal of Educational Technology in Higher Education* 20, no. 1 (2023): 1-20.

⁶ Haniah, Mahira, and Muh. Napis Djuaeni, "The Development of Interactive E-Book-Based Teaching Materials for Senior High School Students", *Arabiyatuna: Jurnal Bahasa Arab* 7, no. 1 (2023): 53-78.

by several factors such as learning materials that are mostly teacher-centered and learning resources that are less interesting.⁸ Therefore, teachers must develop more creative and engaging teaching methods to help students become proficient in Arabic vocabulary.⁹ Moreover, one of the strategies to integrate technology into education and learning usually focuses on improving teachers' ability to teach.¹⁰ In other words, it can be said that technology-based vocabulary learning materials and practices are indispensable in the current curriculum to improve the quality of vocabulary teaching and learning.¹¹ Hence, the students need to be motivated to understand and use vocabulary in Arabic learning.¹²

Language teaching in Indonesia is one of the main components of national education as stated in the Article 37 Paragraph 1. As mentioned: "Kurikulum pendidikan dasar dan menengah wajib memuat: (a) pendidikan agama; (b) pendidikan kewarganegaraan; (c) bahasa; (d) matematika; (e) ilmu pengetahuan alam; (f) ilmu pengetahuan sosial; (g) seni dan budaya; (h) pendidikan jasmani dan olahraga; (i) keterampilan/kejuruan; (j) muatan lokal".

The above-mentioned laws are very effective for the language learning needs of educational students. This highlights the government's concern for the ability of the younger generation to communicate in Indonesian and foreign languages, including Arabic. It is hoped that with the advent of educational technology adopted by the two most important parties, the government and teachers, it will be possible to provide guidance on how to create a more productive and collaborative learning environment¹³ although the role of teachers has been described as a support for students in the

⁷ David Doochin, *How Many People Speak Arabic Around the World, and Where? Babel Magazine*, 2019.

⁸ Muhammad Zul Iman, Muhammad Yaumi, and Yusring Sanusi Baso, "Pengembangan Bahan Ajar Bahasa Arab Berbasis Mobile Learning", *Shaut Al Arabiyyah* 9, no. 1 (2021): 11-22.

⁹ Abdul Aziz Fakhruddin, Mochammad Firdaus, and Lailatul Mauludiyah, "Wordwall Application as a Media to Improve Arabic Vocabulary Mastery of Junior High School Students", *Arabiyatuna: Jurnal Bahasa Arab* 5, no. 2 (2021): 217-234.

¹⁰ Maria Hvid Stenalt and Helle Mathiasen, "Towards Teaching-Sensitive Technology: A Hermeneutic Analysis of Higher Education Teaching", *International Journal of Educational Technology in Higher Education* 21, no. 1 (2024): 1-15.

¹¹ Ulku Coban Sural and Zehra Yasar Saglik, "Next-Generation Learning Experience: The Effect of Technology-Assisted and Printed Context-Based Vocabulary Activities on Vocabulary Knowledge and Learning Motivation", *Education and Information Technologies* (2024): 1-31.

¹² Safira Aura Rachmawati, Zaim Elmubarok, and Muchlisin Nawawi, "Analisis Kesulitan Penguasaan Kosakata Bahasa Arab pada Siswa", *Lisanul Arab: Journal of Arabic Learning and Teaching* 12, no. 1 (2023): 46-50.

educational process to ensure effective learning outcomes. The quality of learning is also influenced by several factors to become an ideal teacher, which is in accordance with the findings of *Monterrey Technological Studies*, which identifies five attributes needed by teachers. They must be inspiring, at the forefront of their discipline, innovative, professional in their profession, and skilled in technology. It can be said that the success of teaching is based on the design created from the beginning and how each approach, strategy, and learning method has a function to achieve meaningful learning goals.¹⁴ Thus, it can provide knowledge of foreign languages, especially Arabic, so that the younger generation can contribute both domestically and globally.

The implementation of the law can also be seen from the number of Islamic-based schools that generally teach foreign languages, especially Arabic, not only in formal institutions, but also non-formal in Indonesia, such as tutoring and language training programs that are carried out both offline and online.¹⁵ Strictly speaking, the essence of Islam is not limited to the initial stage of Islam, but is introduced or understood comprehensively, globally, and holistically.¹⁶ Therefore, in Indonesia there are non-formal schools that are better known as Islamic boarding schools. Islamic boarding schools are one of the non-formal educational institutions that consistently perform well in teaching Arabic while incorporating Islamic principles. Arabic is used in Islamic texts such as the Qur'an, Hadith, and daily prayers. Therefore, to understand it, students must have a strong mastery of Arabic language skills.

However, it is undeniable that formal schools have Arabic teaching as one of the learning languages covered in the curriculum. This can be observed in MTsN 1 Makassar City, where this school is based on Islamic teachings, so it is very suitable for learning Arabic. Based on observations on students and teachers of Arabic in MTsN 1 Makassar City, many factors are identified contributed to the decline in vocabulary mastery in

¹³ Amos Tay and et al., "Learning Technology as Contested Terrain: Insights from Teaching Academics and Learning Designers in Australian Higher Education", *Australasian Journal of Educational Technology* 39, no. 1 (2023): 56–70.

¹⁴ Alvaro H. Galvis and Diogenes Carvajal, "Learning from Success Stories When Using ELearning and BLearning Modalities in Higher Education: A Meta-Analysis and Lessons towards Digital Educational Transformation", *International Journal of Educational Technology in Higher Education* 19, no. 1 (2022): 1-31.

¹⁵ Syindi Oktaviani R. Tolinggi, "Pembelajaran Bahasa Arab di Indonesia pada Era Revolusi Teknologi Tak Terbatas (Strengths, Weaknesses, Opportunities, and Threats)", *An Nabighoh: Jurnal Pendidikan dan Pembelajaran Bahasa Arab* 23, no. .1 (2021): 33-50.

¹⁶ Ahmad Mujahid and Haeriyah, "Interpretasi Ayat-Ayat Ihsan dalam Pengembangan Hukum Islam", *Jurnal Mazahibuna* 2, no. 2 (2020): 270–283.

Arabic language proficiency, due to conventional Arabic learning materials that only concern on teachers during the teaching process. In other situations, there is often a tendency for teaching methods to become more rigid. This tendency tends to have a negative impact on the quality of material comprehension, especially in vocabulary comprehension. On the other hand, to increase student participation, interactive and engaging learning activities are needed. Therefore, it is expected to provide a solution to increase the number of Arabic language users by utilizing visual media, such as digital comics.

The utilization of visual media, such as graphics or two-dimensional text, is one way to improve understanding of the Arabic language. Learning with graphic media aims to provide an interesting learning environment for students so that they will not be saturated with the learning process that is less interesting and can become more involved in the learning process. These visual aids are very effective in teaching Arabic because they make it easier for students to understand the material and increase their motivation to learn Arabic vocabulary.¹⁷ Therefore, in the context of technology and education, the development of educational curriculum is a response to the trend of globalization. Utilizing technology effectively is crucial in the world of education to produce a generation that can understand the material quickly and use technology in education effectively.¹⁸

Previous research on the use of digital media in language learning has been carried out, such as the Izzah and Ma'sum study¹⁹ which has a relevance to this article topic that focuses on the development of digital comics used as a learning medium, but with a different scope and product offerings. The research conducted by Izzah and Ma'sum noted that there is a uniqueness in the learning process or differences in students' educational backgrounds that cause difficulties when reading Arabic texts. So, this research provides a clear framework for understanding the ongoing advancement of digital comics among students. However, the results of this study were limited by

¹⁷ Andi Agussalim, Zuhriah, and Yuliana, "Efektifitas Penggunaan Media Visual (Grafis) dalam Penguasaan Kosakata Bahasa Arab Bagi Snatriwati Pondok Pesanteren Immim Putri Pangkep", *Jurnal Sarjana Ilmu Budaya* 3, no. 2 (2023): 71-80.

¹⁸ Muflihah Muflihah, Sholehah Sholehah, and Muhammad Baihaqi, "Integration of Four Language Skills in Arabic Language Learning", *Jurnal Al Bayan: Jurnal Jurusan Pendidikan Bahasa Arab* 16, no. 1 (2024): 69-87.

¹⁹ Meladia Aqidatul Izzah and Ali Ma'sum, "Pengembangan Komik Digital Sebagai Media Pembelajaran Bahasa Arab Maharah Qira'ah untuk Siswa Kelas X MA Almaarif Singosari", *JoLLA: Journal of Language, Literature, and Arts* 1, no. 8 (2021): 1081-1094.

comparing traditional teacher-led learning methods with student-centered learning robots that use technology to improve language proficiency. The main focus is on the effectiveness of Arabic language teaching and the analysis of teaching methods. The resulting product is a flipbook that can be accessed offline via web browser.

Meanwhile, research by Akla²⁰ showed a strong relevance between the study and this study. Akla's research discovered that there is significance in the mastery of vocabulary with the story method. Specifically, it discussed that children who learned through modeling showed an increase in their proficiency in Arabic compared to those who received traditional instruction based on obedience. In addition, this study highlighted the role of teachers in managing a supportive learning atmosphere. The study suggested that teachers carefully consider local storytelling habits and adapt them to students' proficiency levels in spoken language. This approach proves that storytelling is an appropriate method to master vocabulary mastery and emotional involvement in Arabic language education. The content of the digital comic was developed using a delivery method in the form of a narrative story.

Meanwhile, Dwita²¹ evaluated the use of animated videos in improving Arabic vocabulary. All of these studies show how relevant visual media Video animation, in particular, has the potential to increase students' interest and understanding of new concepts in a more effective way compared to traditional methods. In contrast, research by Maulana et al. that used *Tarjamah Fauriyah Indunisiyah* Arabic Learning to create web-based educational materials through a platform supported by Google Sites can show that Google's pedagogical methodology is a suitable tool for educational activities. Although the success of such advanced products is reported using the Google Sites website to explain the interpretation of the Arabic language, the study did not address the evaluation of the product's effectiveness in different educational settings outside of universities, such as technical colleges or high schools. Compared to conventional methods, this article provides more comprehensive information about the impact of technology integration and multiple platforms on the success of Arabic language learning by looking at the two points above.

²⁰ Akla, "Storytelling Method to Improve Vocabulary for Non-Native Arabic Speaker Children", *Arabiyatuna: Jurnal Bahasa Arab* 6, no. 1 (2022): 171-192.

²¹ Diana Dwita, "Pengaruh Penggunaan Media Video Animasi Terhadap Peningkatan Penguasaan Mufrodat (Kosa Kata) Pembelajaran Bahasa Arab Peserta Didik Kelas VII Mts Mathla'ul Anwar

Research by Haniah et. al²² that discussed about interactive e-book learning resources for tenth grader students in Madrasah Aliyah have outstanding relevance to increase the validity and practicality of independent learning known as *Heyzine Flipbook al tahiyat wa al ta'aruf* learning material which is part of the comparison in this study. Relevance of this includes emphasizing the importance of integrating interactive books with user needs and traditional texts to create more engaging learning materials by incorporating audio and visual elements to make instruction more dynamic. This literature highlights the importance of developing interactive e-books that meet the needs of students and teachers, ensuring that the material is reliable and useful for effective learning outcomes. Therefore, the article above is a guide for authors to conduct in-depth research on the use of digital comics that have a significant impact on achieving learning goals when compared to traditional teaching methods and current teaching methods.

Based on the description of five previous studies, it has been shown that digital media, such as digital comics, animated videos, and e-books are very effective in increasing students' motivation and understanding in learning Arabic. This is supported by many studies that show that visual media is very helpful in the learning process.²³ However, many studies are still limited to technical aspects and do not assess the long-term impact comprehensively. To overcome these limitations, an innovation in Arabic language learning media that is recommended is digital comics. It provides attractive visuals, interesting and simple storylines, and high accessibility. Additionally, the combination of narrative and characters in digital comics can provide a more immersive and engaging learning experience that has not been explored in previous research. By combining technology-based teaching with digital-based teaching, students are more involved in understanding Arabic language proficiency material.²⁴ Thus, the education

Cemplang Tahun Pelajaran 2022/2023", *Shawtul Arab: Jurnal Pendidikan Bahasa Arab* 3, no. 1 (2023): 20–34.

²² Haniah, Mahira, and Muh. Napis Djuaeni, "The Development of Interactive E-Book-Based Teaching Materials for Senior High School Students", *Arabiyatuna: Jurnal Bahasa Arab* 7, no. 1 (2023): 53-78.

²³ Nadi Suprpto and et al., "Scientific Mapping and Analysis of Digital Comics, Animation, and Digital Cartoon Production in Education", *Communication Humanities and Social Sciences* 11, no. 1 (2024): 1–13.

²⁴ Budi Pratama and et al., "Modern vs Traditional: A Comparative Study of Effective Arabic Language Learning Methods", *Al Bayan Journal: Journal of the Department of Arabic Language Education* 16, no. 1 (2024): 239-257.

management process between teachers and students can be involved in continuous communication in the educational environment to achieve learning goals.²⁵

This article provides insight from theory by expanding the literature on the use of digital media in language learning, especially Arabic language learning, and providing materials for further research on the effectiveness of digital media. From a practical point of view, this article helps the educators in digital comics utilization as innovative and interesting teaching media, as well as serve as a guide for the development of educational media that is more innovative and relevant to the needs of students. With R&D method and the Four D (define, design, develop, disseminate) development model, this article defined the learning needs and objectives, design appropriate digital comics, develop effective learning materials, and disseminate the results of the research to improve the standard of Arabic language teaching in the digital era.

Methods

This research was categorized as Research and Development (R&D), or alternatively, research on growth. This kind of research methodology is called empirical development research and is intended to produce a product.²⁶ These empirical techniques are used to identify, evaluate, adjust, and amplify the validity of the targeted products offered. Therefore, R&D will only produce sustainable innovations that will increase productivity if the investments made are closely coordinated with governments and educational institutions.²⁷ The design of this study focuses on the development method of the Four D Model that has been modified by Thiagarajan. According to Thiagarajan, the Four D Model consists of four phases of research: *define, design, develop, and disseminate*.²⁸

²⁵ Rodhy Harisca, Ahmad Bukhari Muslim, and Abdulahi Hussein Moalim Shariif, "Arabic Language Teaching Curriculum for the Stages of Indonesian General Education in the Era of Society 5.0", *Al Bayan Journal: Journal of the Department of Arabic Language Education* 15, no. 1 (2023): 100–117.

²⁶ Sri Gustiani, "Research and Development (R&D) Method as a Model Design in Educational Research and Its Alternatives", *Holistics Journal* 11, no. 2 (2019): 12–22.

²⁷ David Sarpong and et al., "The Three Pointers of Research and Development (R&D) for Growth-Boosting Sustainable Innovation System", *Technovation* 122 (2023): 1-9.

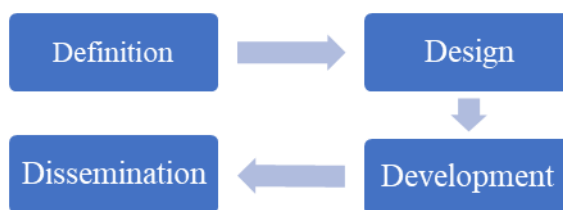


Figure 1. 4D Model Research Stage²⁹

At the definition stage, the concept of digital comics is explored based on pre-established ideas and field research is conducted to collect relevant data for the development of relevant material.³⁰ The purpose of this study was to clarify the current theories and practices about the use of digital comics as a medium for learning Arabic. The second step is the design, or the process of creating digital comics. This research includes understanding topics and topics, creating comic frameworks, and making narrative sketches with interactive elements.³¹ In addition, writers began to manipulate comics by using digital comic creation applications. At this stage, the format, visual realism, panels for each chapter, and the appropriate number of pages for the learning process will be determined. The third step is called Development, modifying the shape of the product to be produced.

This includes the following steps: identifying supporting components, preparing supporting tools and books, and conducting an assessment of the functionality of supporting tools.³² The goal is to understand student responses and ensure that digital comics are engaging to students and effectively contribute to improving students' understanding of the Arabic language. This evaluation was collected from media sources, educational materials, and students in MTsN 1 Makassar City with questionnaire to obtain the responses to digital comic books for the teaching process at MTsN 1 Makassar

²⁸ Jasmine Riani Johan, Tuti Iriani, and Arris Maulana, "Penerapan Model Four-D dalam Pengembangan Media Video Keterampilan Mengajar Kelompok Kecil dan Perorangan", *Jurnal Pendidikan West Science* 1, no. 6 (2023): 372–378.

²⁹ Nurul Aisyah Salsabila Panjaitan and Harun Al Rasyid, "Pengembangan Media Pembelajaran Komik Bahasa Arab Berbasis Canva", *Journal of Education Research*.4, no. 2 (2023): 484-495.

³⁰ Jasmine Riani Johan, Tuti Iriani, and Arris Maulana, "Penerapan Model Four-D dalam Pengembangan Media Video Keterampilan Mengajar Kelompok Kecil dan Perorangan", *Jurnal Pendidikan West Science* 1, no. 6 (2023): 372–378.

³¹ Irnando Arkadiantika and et al., "Pengembangan Media Pembelajaran Virtual Reality Pada Materi Pengenalan Termination dan Splicing Fiber Optic", *Jurnal Dimensi Pendidikan dan Pembelajaran* 8, no. 1 (2020): 29-36.

³² Albet Maydiantoro, "Model-Model Penelitian Pengembangan (Research and Development)" *Jurnal Pengembangan Profesi Pendidik Indonesia (JPPPI)* 10 (2021): 1–8.

City. The last step is called dissemination, where the digital comic production process has been completed, approved, and published.³³ However, due to time limitations, the authors of this study have only reached the development stage.

This research was conducted at MTsN 1 Makassar City, with subjects consisting of two media experts, four material experts, and twenty-seven students from seventh, eighth, and ninth grades. The purpose of this study is to produce digital Arabic comics as a learning medium. In this study, digital comic data in Arabic is being researched using quantitative data analysis techniques. However, the quantitative data was based on students' responses to questions asked by media experts, material experts, and students of MTsN 1 Makassar City from seventh, eighth, and ninth grades randomly to find out the responses of all students from different grade levels about the use of digital comics as a teaching tool. This quantitative method encourages the study of samples that are usually carried out during the data collection process using statistical methods or questionnaires using numbers.³⁴ The purpose of this study was to provide learning materials in the form of digital comics in MTsN 1 Makassar City. The research process took three months to complete, starting from July to September 2024. This article focused on concept clarification, digital comic creation, and response collection.

A questionnaire was used to obtain the responses from media experts, material experts, and students of MTsN 1 Makassar City and Likert scale analysis was utilized. The assessment score of the author's response questionnaire uses a score of 1 to 5 with the following description: 1 (strongly disagree), 2 (disagree), 3 (neutral), 4 (agree), 5 (strongly agree). The calculation results use the formula:

$$x_i = \frac{\sum S}{S_{max}} \times 100 \%$$

Information:

x_i = Feasibility value of each aspect of the questionnaire

$\sum S$ = Sum of all validation scores

S_{max} = Maximum score³⁵

³³ Birru Muqdamien and et al., "Definition Stages in a Four-D Model in Research & Development (R&D) of Snake and Ladder Educational Aids to Improve Science and Mathematics Knowledge of Children Aged 5-6 Years," *Intersections* 6, no. 1 (2021): 23–33.

³⁴ Karimuddin Abdullah and et al., *Metodologi Penelitian Kuantitatif*, Yayasan Penerbit Muhammad Zaini, 2022.

³⁵ Otang Kurniaman and et al., "4-D Model: Teaching Materials to Reading Comprehension With DRTA Strategy For Elementary School Students", *Jurnal Basicedu* 5, no. 2 (2021): 672–682.

Below is a table of feasibility criteria for responses from experts and students of MTsN 1 Makassar City which serves to assess the feasibility results of a product/media before it is disseminated. The classification of eligibility criteria is as follows:

Table 1. Eligibility Criteria for Responses of Media Experts and Material Experts³⁶

Score in percent	Eligibility Criteria
< 21 %	Very Unworthy
21 - 40 %	Not Eligible
41 - 60 %	Quite Decent
61 - 80 %	Proper
81 - 100 %	Highly Worthy

The scoring ranges are classified into five distinct categories, each representing a different level of feasibility: 1) Very Unworthy (< 21%): Scores below 21% indicate that the product or media is considered highly unsuitable for dissemination. Significant revisions or a complete overhaul may be necessary; 2) Not Eligible (21-40%): A score in this range suggests that the product or media is not fit for use in its current form, requiring substantial modifications before it can be considered; 3) Quite Decent (41-60%): Products falling within this score range are deemed moderately acceptable but still require some adjustments or improvements to enhance their feasibility and effectiveness; 4) Proper (61-80%): A score between 61% and 80% suggests that the product or media is considered feasible and largely effective, though minor improvements may still be necessary; 5) Highly Worthy (81-100%): Products that score in this range are considered highly feasible, effective, and ready for dissemination with little to no changes required.

To determine the eligibility of a product or media, responses from experts are converted into percentage scores, reflecting their assessment of various aspects such as content, design, usability, and relevance. Each score is then classified based on the percentage-based criteria provided in Table 1. The collected data are analyzed quantitatively by calculating the percentage score based on the total score obtained, divided by the maximum possible score, and then multiplying the result by 100. This percentage score is then matched against the eligibility criteria to determine the overall feasibility of the product or media. By applying this method, the researchers can objectively evaluate the level of readiness of the product for broader use and dissemination.

³⁶ Ulfa Rahmatin and et al., "Pengembangan Media Komik untuk Pembelajaran Materi Logika dan Algoritma Komputers 3, no. 1 (2021): 11–19.

Results and Discussion

The development of Arabic comic books uses a research methodology described by S. Thiagarajan, Dorothy S. Semmel, and Melvyn I. Semmel, namely the Four D Model. However, due to time constraints, this research only focused on creating digital comic learning materials which are then modified into 3-D models, namely the definition, design, development, and final stages, dissemination had not been applied to this research, but would be carried out after the product has been validated and perfected thoroughly. The steps taken are as follows:

1) Definition Stage: The definition phase aims to reduce concerns about the Arabic learning process in schools. In addition, observations were made of instructors and students at MTsN 1 Makassar City regarding the Arabic learning process at the school concerned. The goal is to understand the learning environment in the classroom as well as the specific needs that must be met to support Arabic language learning. Based on the observation results, it was concluded that Arabic language teaching at MTsN 1 Makassar City mostly uses conventional media, which means that students' attention span is limited to written material. In addition, teaching methods often show constant resistance.

2) Design Stage: Arabic comics were introduced as one of the solutions that are expected to be able to overcome obstacles in mastering Arabic vocabulary among MTsN 1 Makassar City students. The story in this comic is generated from the author's creative ideas through a brainstorming process. There are two main stages in making this comic, namely designing the material concept and designing the comic using *the Medibang Paint Pro* application. Once the material concept for the Arabic comic is compiled, the next stage is to integrate the content with pre-designed visual and animation elements. Background visuals and comic illustrations are attractively designed to capture students' attention. Imaginative characters and interesting stories were added to enhance media interactivity, which was then incorporated into the creation of digital comics with special designs.

The main factor that is the foundation of every educational media is the material. In this digital Arabic comic, the author chooses to access material in the form of a flashcard book in Arabic published by KORAN (Arabic Daily Vocabulary). The reasons why this book was selected as a reference for the vocabulary that appears in comic books are varied, interesting and always up to date. a) The first step is to open the software

application first. To create a new worksheet, open the app and select the "File" menu -> click "New" or use the shortcut Ctrl + N. A window will appear, as shown in the image below, showing two options: "Standard" and "Comic". I select "Standard", then choose the paper size. Here the author uses A4 size in landscape orientation, then click "OK". After that, start sketching or inserting an existing sketch. b) Create rough sketches according to your creations. *Chibi* character was drawn with a place in the story.



Figure 2. Initial Sketch

c) Create line art on the sketch. A brush pen was used with a thickness of 10 for body parts and clothes, as well as a *tool pen (sharp)* for hair. Thinner clothing and hair patterns can be made using a *pen (sharp)* with a thickness of 6. Follow the existing sketch pattern.



Figure 3. Line Art on Sketch

d) Add a base color to the sketch that has been given line art. A bucket tool was utilized to color the base.



Figure 4. Addition of Base Colors

e) Once the basic coloring is complete, add highlights and shadows to the object. An airbrush was used to cast shadows on the skin of objects. The final result can be seen in the image below.

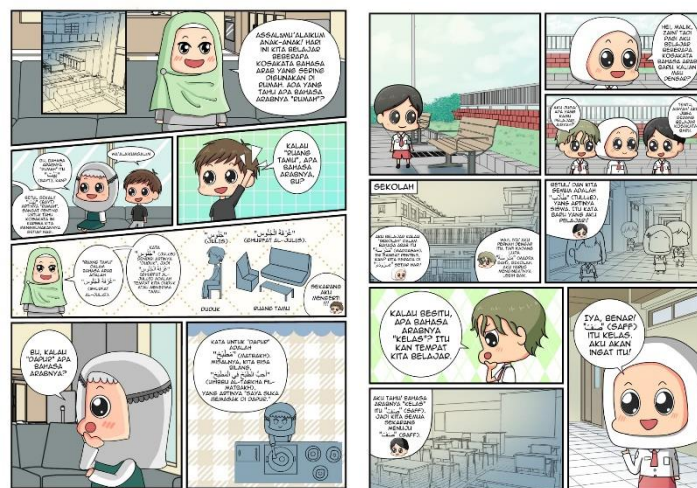


Figure 5. Design and Coloring Results

3) Development Stages: This stage was completed after the digital comic editing process using Medibang Paint had completed. At the development stage, a product layout was made by utilizing materials and media obtained through questionnaires. The media and materials presented were in the form of responses, consisting of Arabic literature lecturers from Hasanuddin University and IT/editing experts. The purpose of this feasibility study was to identify digital comic books that had been completed. This process was carried out by creating a digital comic book and cover using a Google Form

with a checklist and a Likert scale as an evaluation tool for the submitted digital comic book. The results of the feasibility assessment are presented in the following sections.

Table 2. Media Response Results

Aspects	Percentage (%)	Criterion
Visual display	92 %	Highly Worthy
Table of contents display	91,66 %	Highly Worthy
Feasibility	88,33 %	Highly Worthy
Average	90,66 %	Highly Worthy

Source: Media Expert Response

Table 2, it can be observed that the average score obtained from the test feasibility media has reached 90.66%. The overall result of media analysis is between 81 and 100%, which is categorized into a very narrow category. As a result, it can be said that Arabic-language digital comics are quite rare. In addition to the feasibility test through the media, this digital comic also conducts a material feasibility test process, which is explained as follows:

Table 3. The Result of Material Feasibility

Aspects	Percentage (%)	Criterion
Material	92 %	Highly Worthy
Language	90 %	Highly Worthy
Engineering Quality Average	92,5 %	Highly Worthy
	91,5 %	Highly Worthy

Source: Arabic Language Expert Response

Based on Table 3, the material test produced an average score of around 91.5%, which is included in the very good category. After going through the media and material stage, digital comics in Arabic then continue to the next stage, namely the response stage. At this stage, it is critical for students to determine whether digital comics are suitable for use as a learning medium. This questionnaire is intended to help students understand whether digital comics can help improve their mastery of Arabic and can be applied well in the classroom at MTsN 1 Makassar City. In this questionnaire, the respondents were two students from seventh, eighth, and ninth grades. The following table presents the results of a survey conducted with students of MTsN 1 Makassar City.

Table 4. Student Response Results

Aspects	Percentage (%)	Criterion
Interest	78,37 %	Proper
Material	77,28 %	Proper
Language	83,11 %	Highly Proper
Engineering Quality Influence on Learning Average	78 %	Proper
	73,62 %	Proper
	78,07 %	Proper

Source: Response of MTsN 1 Makassar City Students

Based on Table 4 which presents the results of the responses from the questionnaire distributed to students at MTsN 1 Makassar City, five main aspects were found which included students' interest in digital comics, ease of understanding of the material and language used, as well as the quality and impact of this media on learning, especially in terms of mastery of Arabic vocabulary.

Overall, this article showed that digital comics are a teaching tool that is able to improve students' proficiency in Arabic at MTsN 1 Makassar City. This medium not only provides a more engaging and dynamic learning experience, but it also helps students develop their own learning styles, increase motivation, and deepen their understanding of the material being studied. The results of this study also have important implications for future research. First, it is said that comics with positive content design can improve students' ability to memorize vocabulary. The score improvement as well as significant differences was noted in the test results. It proved that content and text editing are effective in improving student performance. The material mentioned above also highlights the importance of teaching materials.

In an educational environment, text development that is characterized by the effectiveness of the goals has the potential to be an important tool in improving student learning outcomes. The positive impact revealed in this study reinforces the fact that the provision of the right teaching materials has the potential to produce more satisfactory academic outcomes. By conducting a systematic review of the current literature on the effectiveness of textbooks and their impact on students' work habits, researchers can provide a comprehensive analysis that contributes to long-term studies being conducted in the field.³⁷ In the context of Arabic language teaching, the use of thematic materials in this study has the potential to significantly improve student understanding and performance.

This study recommends research conducted by Malmen because it indicates that thematic education provides contextual information to students who relate their learning to instructive or challenging real-world situations.³⁸ In addition, this research is also in line with Yin's statement that students can develop more advanced language

³⁷ Anna Nissen, "Cognitive Activation as an Aspect of Literature Instruction", *LI-Educational Studies in Language and Literature* 23 (2023): 1–20.

³⁸ Evangelos Malmen, "Teaching Thematic Structure in Greek through Design-Based Research: Its Effects on Student Argumentative Written Productions", *LI-Educational Studies in Language and Literature* 23 (2023): 1-28.

understanding and practical applications by connecting Topics relevant to daily life and school, or the education system at a given time.³⁹ Thematic content not only aims to instill confidence in students, but also facilitates the integration of grammar, vocabulary, and critical thinking in an engaging context.⁴⁰

This approach allows students to make connections between words, phrases, and usage which improve their understanding of the Arabic language. Furthermore, according to Sariyani et al., revealed that thematic material improves students' ability to analyze at a high level, such as in critical, interpretive, and synthetic analysis, because students are faced with texts that seem to be able to answer questions related to the subject matter.⁴¹ In addition, motivation among Arabic language learners will be added with an emphasis on interesting and stimulating material, as well as attractive layouts and designs. If students find material that is engaging, visually appealing, and relevant to their experiences and feelings, they will become increasingly motivated to actively engage with the content. Increased motivation has an impact on increased focus, increased concentration, and increased willingness to learn and apply knowledge. Visually striking texts and layouts also improve students' ability to learn in a comprehensive way, making textbooks easier to understand and more enjoyable for students.⁴²

Conclusion

The results of this study on the development of Arabic digital comics for students at MTsN 1 Makassar City with the Four D (4D) model showed that this digital comic book has a positive response and is considered an excellent resource for Arabic learning and teaching, especially in vocabulary mastery. Therefore, teachers can develop more creative and varied learning materials by utilizing digital comic technology. However, due to limited research time, it may not be enough to measure the long-term impact of the use of digital comics on the effectiveness of Arabic learning. Therefore, further

³⁹ Sheng-Kai Yin, "A Study of the Effects of Thematic Language Teaching on the Promotion of Multimedia Design Students' Listening and Speaking Skills", *Frontiers in Psychology* 13 (2022): 1–7.

⁴⁰ Muhammad Nuraripin and Suherli Kusmana Jaja, "Thematic Teaching Materials Based on Interactive Multimedia in Elementary School", *International Journal of Secondary Education* 9, no. 2 (2021): 62-73.

⁴¹ Sariyani Sariyani, Yaningsih Yaningsih, and Fazrol Rozi, "Implementing Content-Based Instruction (CBI) on EFL Student's Writing through Technology-Enhanced Language Teaching", *Education Quarterly Reviews* 5, no. 1 (2022): 174-184.

⁴² Xinyi Sun, "Design and Construction of University Book Layout Based on Text Image Preprocessing Algorithm in Education Metaverse Environment", *Journal of Environmental and Public Health* 2022, no. 1 (2022): 1-10.

research can measure the long-term impact of the use of digital comics on various aspects of learning, such as vocabulary mastery, speaking skills, and students' attitudes toward learning Arabic. It is expected that this digital comic will be an innovation that can be used by other teachers to create more interesting learning materials, especially to help students understand concepts more thoroughly and improve their understanding.

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