



Developing an E-Comic for History Education: A Digital Learning Intervention on the Samudra Pasai Kingdom

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Abstract: This study aims to develop e-comic-based history learning media on the topic of the Samudra Pasai Kingdom for senior high school students. The urgency of this research lies in the fact that history learning in many schools is still dominated by conventional methods, which often make students less motivated and hinder their ability to engage meaningfully with historical narratives. To address this issue, the Research and Development (R&D) method was employed, adopting the Sugiyono development model that consists of needs analysis, product design, expert validation, and revision. Data were collected through interviews, questionnaires, and classroom observations involving history teachers and tenth-grade students at SMA Muhammadiyah 1 Pekalongan. The findings indicate that: (1) existing learning media at the school remain limited in variety and innovation, resulting in students' difficulties in understanding historical material; (2) the developed e-comics were designed to provide a more engaging summary of content, enriched with relevant illustrations and integrated media elements; and (3) validations by material and media experts confirmed that the e-comics are appropriate and feasible for use in history learning. The study concludes that e-comic media have significant potential to enhance students' motivation, participation, and comprehension of history lessons, particularly concerning the Samudra Pasai Kingdom, while also fostering the integration of digital technology into history education in schools.

Abstrak: Penelitian ini bertujuan untuk mengembangkan media pembelajaran sejarah berbasis e-komik dengan tema Kerajaan Samudra Pasai untuk siswa SMA. Urgensi penelitian ini terletak pada kenyataan bahwa pembelajaran sejarah di banyak sekolah masih didominasi oleh metode konvensional, yang sering kali membuat siswa kurang termotivasi dan menghambat kemampuan mereka untuk terlibat secara bermakna dengan narasi sejarah. Untuk mengatasi masalah ini, metode Penelitian dan Pengembangan (R&D) digunakan, dengan mengadopsi model pengembangan Sugiyono yang terdiri dari analisis kebutuhan, desain produk, validasi ahli, dan revisi. Data dikumpulkan melalui wawancara, kuesioner, dan observasi kelas yang melibatkan guru sejarah dan siswa kelas 10 di SMA

Muhammadiyah 1 Pekalongan. Hasil penelitian menunjukkan bahwa: (1) media pembelajaran yang ada di sekolah masih terbatas dalam variasi dan inovasi, sehingga siswa kesulitan memahami materi sejarah; (2) e-komik yang dikembangkan dirancang untuk memberikan ringkasan isi yang lebih menarik, diperkaya dengan ilustrasi yang relevan dan elemen media terintegrasi; dan (3) validasi oleh ahli materi dan media mengkonfirmasi bahwa e-komik tersebut sesuai dan layak digunakan dalam pembelajaran sejarah. Studi ini menyimpulkan bahwa media komik elektronik memiliki potensi signifikan untuk meningkatkan motivasi, partisipasi, dan pemahaman siswa terhadap pelajaran sejarah, khususnya mengenai Kerajaan Samudra Pasai, sekaligus mendorong integrasi teknologi digital ke dalam pendidikan sejarah di sekolah.

Keywords : e-comic, digital learning media, history education, samudra pasai kingdom.

INTRODUCTION

Education serves as the primary foundation for both individual advancement and societal development (Neundorf et al., 2024; Philosophy et al., 2025; Wang & Guo, 2025). Through education, individuals not only acquire knowledge and skills but also internalize values, ethics, and critical thinking patterns necessary to confront global dynamics (Hidayat et al., 2022; Poitras et al., 2022). The process of education should not be narrowly understood as a mere transfer of information; rather, it encompasses the formation of character, the strengthening of reasoning capacity, and the habituation of creativity (Amirah Ismail et al., 2023; Varenina et al., 2021; Wijnen et al., 2021). An adaptive education system must be capable of addressing the challenges of the times by leveraging technology while simultaneously encouraging innovation within the learning process (Ardiansyah et al., 2024; Febrianto et al., 2020; Kwangmuang et al., 2021; Mariati et al., 2021; Park et al., 2020; Xuan & Xuan, 2021). Without a high-quality education system, social and economic disparities will inevitably widen, thereby slowing down growth and undermining sustainable development (Abbas et al., 2023; Bunari et al., 2023; Fikri et al., 2025; Suhirman et al., 2020; Varenina et al., 2021).

In the Indonesian curriculum context, history occupies a strategic position as a subject that provides students with an understanding of the evolution of human civilization across political, social, economic, and cultural dimensions (Ernst, 2022; Hart, 2021; Wulandari et al., 2023). By studying history, students are expected to connect past events with present conditions and extract meaningful lessons for shaping their future (Anis et al., 2020). History is not merely a collection of memorized facts; rather, it functions as a medium to cultivate critical thinking skills, analyze causal relationships of events, and grasp broader historical contexts (Kysela & Štorková, 2015). This perspective aligns with Asmara, who emphasizes that history education has long been integrated into the Indonesian educational system from the colonial era to the modern age and continues to serve as a vital instrument for fostering national consciousness (Amirah Ismail et al., 2023; Hamid et al., 2022; Munawarah et al., 2020; Ofianto et al., 2019; Watz, 2011).

Nonetheless, numerous studies indicate that history learning in schools continues to encounter significant challenges. Teaching is still predominantly characterized by conventional methods such as lectures and textbook reliance, which are less effective in engaging student interest. Preliminary observations at SMA Muhammadiyah 1

Pekalongan further revealed that the utilization of instructional media remains very limited, resulting in students' difficulties in achieving a deep understanding of historical material. Many learners exhibit a preference for interactive and visually oriented approaches; however, the availability of such media is still scarce in schools. Consequently, this situation negatively impacts students' motivation, engagement, and comprehension of history lessons (Amtu et al., 2020; Gulacar et al., 2020; Patricia Aguilera-Hermida, 2020; Warsah et al., 2021).

In line with the demands of the Fourth Industrial Revolution, educational innovation increasingly requires the integration of digital technologies, particularly in the development of instructional media (Degner et al., 2022; Huang, 2021; Kusumojanto, 2022; Widodo et al., 2023). Interactive digital media has the potential to facilitate more effective, efficient, and enjoyable learning experiences (Corrales et al., 2024; Jayatilleke et al., 2019; Simatupang, 2021; Suwarma & Apriyani, 2022). One promising innovation that has garnered attention is the use of e-comics, which combine visual elements (Corrales et al., 2024; Neundorf et al., 2024; Philosophy et al., 2025; Wang & Guo, 2025), text, and narrative structures to present educational content in an engaging format. Previous research has substantiated the effectiveness of comic-based digital media (Bunari et al., 2024). For instance, Rasiman & Pramasdyahsari (Rasiman, & Pramasdyahsari, 2019) reported that the use of digital comics enhanced students' conceptual understanding of mathematics due to their contextual and communicative features. Similarly, Hidayat et al. (Hidayat, R., Rohman, N., & Lestari, 2021) found that e-comics significantly improved students' reading interest and memory retention in science subjects at the secondary school level. Furthermore, Rahman & Chan (Rahman, M., & Chan, 2022) asserted that the integration of e-comics into history learning

fostered higher levels of motivation and active participation in the classroom.

However, research exploring the application of e-comics in the teaching of historical topics in Indonesia particularly regarding the Kingdom of Samudra Pasai remains very limited (van Straaten et al., 2019). This gap is critical, considering that Samudra Pasai was one of the earliest Islamic kingdoms in the archipelago, playing a pivotal role in political, economic, and religious developments. This study therefore introduces a distinctive novelty by developing a history-based e-comic specifically designed to cover the topic of the Samudra Pasai Kingdom. The innovation aims to enhance student engagement, comprehension, and interest in history learning. Unlike prior studies, which largely focused on science or mathematics subjects, this research emphasizes history education within a digital learning framework tailored to the needs of today's generation of learners.

Accordingly, this study aims to develop and validate an e-comic based instructional medium for teaching the history of the Samudra Pasai Kingdom to grade X students at SMA Muhammadiyah 1 Pekalongan. The development process involves expert validation and field testing to ensure content accuracy, media quality, and instructional feasibility. The findings of this study are expected to contribute to the advancement of digital history pedagogy and to support the development of locally grounded, historically accurate digital learning content for secondary education.

METHOD

Development Model

The research employed the Research and Development (R&D) approach (Haryati et al., 2020), which focuses on producing a specific product while simultaneously testing its effectiveness. In this study, the researcher seeks to create an educational product in the

form of an e-comic, specifically designed to facilitate the teaching of the history of the Samudra Pasai Kingdom. The development framework applied in this research is an adaptation of the research and development model proposed by Sugiyono (Sugiyono, 2020).

Development Procedures

The development stage of this research begins with an internal evaluation of the product design conducted by a team of experts. This team is composed of subject matter specialists and media experts, including history education lecturers from Muhammadiyah Metro University as well as history and ICT teachers from SMAN 1 Pekalongan. In selecting the expert team, the researcher employed purposive and snowball sampling techniques, which are methods chosen based on specific considerations.

Once the experts have reviewed and deemed the product feasible, the next stage involves obtaining feedback from respondents who serve as potential users, namely students. Their role is to provide assessments regarding the product by filling out a questionnaire containing structured statements about the development results. For this trial, 10 students will be involved as respondents.

However, before the product can be declared fully suitable for use, it must first undergo a series of internal tests. These tests are conducted in two phases: the first stage of internal testing, followed by a second stage to refine and ensure that the product meets the intended quality and usability standards. Only after these steps are completed will the product move forward to broader implementation and validation.

Data Collection Instruments

a. Expert Team Validation Instrument

The validation instrument for the expert team serves as a means of testing the developed product to ensure that the collected

data can address the identified problems. The information obtained through this validation process is expected to improve the product's effectiveness, appeal, and efficiency. The validation instruments were administered to material experts as well as media experts.

b. Material Expert Validation Instrument

This instrument was constructed as a questionnaire intended to assess the suitability and correctness of the developed e-comic content.

It was administered to two material experts, who were tasked with assessing the appropriateness of the presented content. Their evaluation focused on indicators such as the accuracy of the material's substance and the correctness of the language used.

Table 1. Blueprint of the Material Expert Instrument

| Aspect | Assessment Indicator | Number of Items |
|--------------|-----------------------------------------------------------------------------------------------------|-----------------|
| Feasibility | 1. The content of the e-comic aligns with the Learning Outcomes (LO) and Learning Objectives (LOs). | 1 |
| | 2. The sequence of material is logically structured. | 1 |
| | 3. The material is presented clearly and is easy to understand | 1 |
| | 4. The correctness of the material is confirmed based on scientific principles. | 1 |
| Presentation | 5. The title presentation reflects the material appropriately. | 1 |
| | 6. The questions are consistent with the learning content. | 1 |
| | 7. The explanation of subtopics corresponds to the main material. | 1 |

| | | |
|-----------------|-----------------------------------------------------------------------------------------------------------|---|
| | 8. The closing section is in line with the discussed material. | 1 |
| | 9. The bibliography corresponds with the cited sources. | 1 |
| Language Use | 10. The language employed follows appropriate linguistic conventions. | 1 |
| | 11. The language used is simple, clear, and easily understood. | 1 |
| | 12. The language complies with the <i>Indonesian Spelling System</i> (PUEBI) standards. | 1 |
| | 13. Consistency and accuracy are maintained across paragraphs. | 1 |
| | 14. The presentation and discussion reinforce the historical content effectively. | 1 |
| E-Comic Quality | 15. The e-comic can be studied independently without direct teacher guidance (<i>self-instruction</i>). | 1 |
| | 16. The material enhances students' understanding of historical concepts. | 1 |
| | 17. The content supports students' independent learning in history. | 1 |

a) Media Expert Validation Instrument

This instrument is designed as a questionnaire aimed at validating the product development process and was administered to two media experts. Their role was to evaluate the appropriateness of the developed product by reviewing its visual aspects, including illustrations, typography, and color composition.

Table 2. Media Expert Instrument Grid

| Aspect | Assessment Item | Item |
|------------------------------------|--------------------------------------------------------------------------------------------------------------------|------|
| Cover Design | 1. The cover design of the e-comic is engaging. | 1 |
| | 2. The overall physical appearance of the e-comic is visually appealing | 1 |
| | 3. The color scheme used on the cover is attractive. | 1 |
| | 4. The cover layout presents a clear and balanced focal point. | 1 |
| | 5. The arrangement of layout elements on the cover is harmonious and consistent. | 1 |
| | 6. The composition and proportion of layout elements (title and image) are appropriate and consistent. | 1 |
| Character Design Feasibility | 7. The character designs are well-developed and visually appealing. | 1 |
| | 8. The characters' traits are relevant and aligned with the storyline. | 1 |
| | 9. The variation of fonts (bold, italic, size) is appropriate and not excessive. | 1 |
| E-Comic Content Design Feasibility | 10. The illustrations are dynamic, coherent, and easy to understand. | 1 |
| | 11. The images provide relevant information and support student learning. | 1 |
| | 12. The illustrations used effectively represent the historical content of the Samudra Pasai Kingdom.. | 1 |
| | 13. The design of the e-comic efficiently conveys the material and accurately represents the historical narrative. | 1 |
| | 14. The design of the e-comic fosters motivation and encourages student learning. | 1 |
| | 15. The placement of images and decorative elements does not | 1 |

| | | |
|--|-----------------------------------------------|--|
| | interfere with the title or text readability. | |
|--|-----------------------------------------------|--|

At this stage, a Likert scale was employed to validate the research instruments used to evaluate the developed e-comic. The scale was adapted from Sugiyono and consisted of five response categories ranging from strongly disagree (1) to strongly agree (5). It was developed to measure expert and user assessments of key aspects, including content accuracy, relevance to learning objectives, media design, interactivity, language clarity, and usability. These criteria were selected to ensure that the e-comic met pedagogical and technical standards. Table 3 presents the scoring categories and weight distributions used in the validation process.

Table 3. Likert Scale

| Category | Score |
|-------------------|-------|
| Strongly agree | 5 |
| Agree | 4 |
| Neutral | 3 |
| Disagree | 2 |
| Strongly disagree | 1 |

The percentage scores derived from this scale were used to assess the appropriateness of the developed product across various aspects under investigation. To further determine the product's feasibility, classification categories were employed. These feasibility levels consist of five categories, each represented by a percentage range, with values starting from a minimum of 10% up to a maximum of 100%. Table 4 below shows the classification of feasibility categories as outlined by Arkianto.

Table 4. Feasibility Category

| Percentage Achievement | Interpretation |
|------------------------|----------------|
| >21% | Very Poor |
| 21%-40% | Poor |
| 41%-60% | Fair |
| 61%-80% | Good |
| 81%-100% | Excellent |

Data collection in this study employed a qualitative approach, which can be conducted through observation, interviews, questionnaires, and documentation. The procedures were carried out as follows: (a) Observation, conducted at SMAN 1 Pekalongan to examine the school environment and learning context; (b) Interview, carried out with history teachers from SMAN 1 Pekalongan and several grade XI students to gather deeper insights; (c) Questionnaires were administered during the product evaluation and trial phases by involving material and design experts, including history lecturers from Muhammadiyah Metro University and history teachers from SMAN 1 Pekalongan, as well as ten students who participated in the internal testing process; (d) Documentation, consisting of photographs of historical artifacts, validation questionnaire data, and images captured during the internal testing process.

RESULTS AND DISCUSSION

Needs Analysis

a. Description of History Learning Resources at SMAN 1 Pekalongan

Based on observations and interviews with the history teacher, Mrs. Nurhayati, the history learning resources utilized at SMAN 1 Pekalongan were found to be relatively sufficient.

However, the resources primarily rely on textbooks available in the school library. Teachers also encourage students to seek additional references from the internet related to the topics being discussed, and students are sometimes assigned to search for further materials in the school computer laboratory. The school provides facilities that support the learning process, such as Wi-Fi access in each classroom. Nevertheless, according to Mrs. Nurhayati, the use of learning resources remains limited, relying mostly on textbooks and online references accessed via smartphones or the computer lab. Technology-based resources, such as e-books, e-modules, flipbooks, or e-comics, have not yet been utilized in history learning at SMAN 1 Pekalongan.

b. Analysis of Needs for History Learning Resources at SMAN 1 Pekalongan

Through the research conducted, it was concluded that the school requires the development of history learning resources that integrate technological advancements. Resources such as e-books, e-modules, flipbooks, and particularly e-comics are highly needed to enrich the learning experience. In response to this need, the researcher designed a learning resource in the form of an e-comic presenting historical content related to the Samudra Pasai Kingdom. The e-comic is designed to be accessible anytime and anywhere via Android smartphones, offering students a more interactive and flexible way of learning history.

c. Product Design to be Developed

Based on the identified needs, the researcher developed an e-comic that aligns with technological developments while addressing history learning requirements. The content of the e-comic includes: the biography of historical figures associated with the Samudra Pasai Kingdom, the role of the

kingdom in disseminating Islam across Indonesia and the influence of trade on its development, significant historical figures and their contributions, and the kingdom's influence on cultural and religious development in the archipelago. The structure of the e-comic is arranged as follows: (1) a cover page with illustrations and the comic title, (2) user guidelines for easier navigation, (3) learning outcomes and objectives aligned with the history curriculum, (4) main content presented in an interactive comic format, (5) practice questions to test student comprehension, (6) author profile to strengthen credibility, and (7) references to provide academic support for the material.

d. E-Comic design



Figure 1. Front cover of the E-comic

Figure 2. Introduction Page of the Story

The illustration above represents the front cover of the developed E-comic. The design is created to be visually appealing through a harmonious blend of colors and customized graphics. On the main cover, the title is displayed along with regional identifiers of several buildings featured in the comic. Meanwhile, the inside cover presents the E-comic's title, the logo of Muhammadiyah Metro University, the compiler's name, and their institutional affiliation.

e. Presentation of Development Result

The e-comic that was developed was then subjected to a validation stage involving experts in both content and media. Material validation was carried out by a history lecturer from Muhammadiyah Metro University, Mrs. Elis Setiawati, M.Pd., in collaboration with a history teacher from SMAN 1 Pekalongan, Mrs. Nurhayati, S.Pd. Meanwhile, the media aspect was evaluated by Mr. Bahtiar Afwan, M.Pd., a history lecturer at Muhammadiyah Metro University, and Mr. Abu Hanifah, S.Pd., an ICT teacher at SMAN 1 Pekalongan. During the validation phase, each expert completed a questionnaire provided by the researcher by marking the appropriate score column based on the given statements. Students, meanwhile, responded via a Google Form, selecting the number corresponding to their assessment of each statement. The collected questionnaire data were then processed using the calculation formula outlined in Chapter III, and the results were analyzed to determine the percentage of eligibility.

• Material Expert Validation

Based on the validation findings, the mean scores provided by the material validators in Stages 1 and 2 are presented in the following table.

Table 5. Stage 1 Material Validator Data

| No | Number of Assessment Scores | Average Number of Eligibility | Description |
|-------------|-----------------------------|-------------------------------|-----------------------|
| 1 | 58 | 0.64 | Usable with revisions |
| 2 | 59 | 0.65 | Usable with revisions |
| Total score | 117 | 0.655 | Usable with revisions |

Based on the Stage 1 material validation results, Validator 1 assigned a total score of 58, with an average feasibility score of 0.64 and a percentage of 64%, indicating that the material was usable with revisions. Validator 2 provided a total score of 59, resulting in an average feasibility score of 0.65 and a percentage of 65%, which also categorized the material as usable with revisions. Overall, the combined assessment from both validators produced a total score of 117, an average feasibility score of 0.65, and a percentage of 65%. These findings suggest that the material is sufficiently feasible for use, provided that revisions are made in accordance with the validators' feedback. During the Stage 1 validation process, comments and recommendations were obtained from both material experts.

Table 6. Feedback and Recommendations from Stage 1 material expert validation

| Material Expert Validator | Feedback and Recommendations |
|---------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Validator 1 | The material is not yet ready for use and requires revision, particularly in reorganizing the numbering of each building variation image to facilitate the development of the e-comic. |
| Validator 2 | Overall, the e-comic writing is considered adequate. |
| | It is recommended that the title explicitly include the term "E-comic" for greater clarity. |
| | The reference list should be further adjusted and refined. |
| | The concluding section needs to be presented more clearly. |
| | For the cover design, it is advisable to include the title at the top, followed by the university logo, the author's name and student identification number (NPM), and the department name. |

Referring to the comments and recommendations provided by Material Validators 1 and 2, the researcher revised the developed e-comic in accordance with the feedback to improve its quality and feasibility. Following these revisions, a second stage validation was conducted. The results of the Stage 2 material validation are presented in the table below.

Table 7. Stage 2 Material Validation Data

| Validator Assessment | Number of Assessment Scores | Average Number of Eligibility | % | Description |
|----------------------|-----------------------------|-------------------------------|------------------|----------------------------|
| 1 | 78 | 0.86 | 86% | Worth using with revisions |
| 2 | 80 | 0.88 | 88% | Very worth using |
| Total score | | 81% | Very worth using | |

Based on the Stage 2 material validation results presented above, Validator 1 awarded a total score of 78, with an average suitability score of 0.86 and a percentage of 86%, indicating that the material is suitable for use with minor revisions. In comparison, Validator 2 provided a total score of 80, resulting in an average feasibility score of 0.88 and a percentage of 88%, which categorized the material as very suitable for use. Overall, the combined evaluation from both validators produced an average percentage of 87%. These findings demonstrate that the material is considered highly feasible and appropriate for use, as reflected in the validation results.

Table 8. Feedback and Recommendations from stage 2 material expert validation.

| Material Expert Validator | Feedback and Recommendations |
|---------------------------|------------------------------------------------------|
| Validator 1 | Considered appropriate for use with minor revisions. |
| Validator 2 | The e-comic aligns well with the |

| Material Expert Validator | Feedback and Recommendations |
|---------------------------|-------------------------------------------------------------------------------------------------------------------------------------------|
| | discussed topic, and the title is consistent with the material content. The e-comic is deemed suitable for use as a learning resource. |

Based on the feedback provided by Material Validators 1 and 2 during the second validation stage, both experts concluded that the developed e-comic met the feasibility criteria. Therefore, the researcher was able to proceed to the subsequent stage, namely the design development of the e-comic, before continuing with validation by media experts.

- **Media Expert Validation**

Based on the validation outcomes, only a single validation stage was conducted. This was because the validators determined that the media evaluation, which focused on the assessment criteria provided by the researchers, indicated that the design of the developed e-comic was highly appropriate for use, allowing the overall mean score to be determined. The assessments from media expert validators 1 and 2 are presented in the table below.

Table 9. Media expert validation data

| No | Number of Assessment Scores | Average of Eligibility | % | Description |
|-------------|-----------------------------|------------------------|----|-----------------------|
| 1 | 72 | 0.96 | 96 | Very suitable for use |
| 2 | 73 | 0.97 | 97 | Very suitable for use |
| Total score | | | 96 | Very suitable for use |

f. Respondent Data

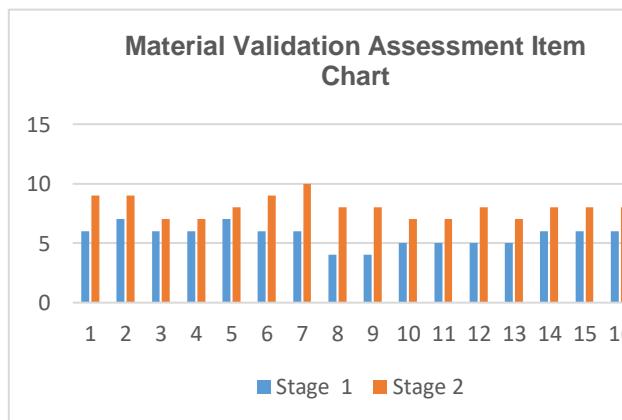


Figure 3. Respondent assessment indicators

In the graph presented above, students' learning progress during the small group trial of the developed e-comic was observable. The findings indicate that the highest evaluation was achieved by five students who rated the e-comic at 100%, placing it in the "very suitable for use" category. On the other hand, the lowest score was given by one student, who assessed the product at 60%, categorized as "fairly suitable with revisions based on suggestions." The remaining students provided scores of 80%, 85%, and 90%, all of which also fall within the "very suitable" category. Based on these results, it can be concluded that the overall average assessment by student respondents placed the e-comic in the "very suitable for use" category.

g. Product Revision

The development of the Samudra Pasai Kingdom history e-comic went through several revision stages to ensure that the final product was valid and appropriate for classroom use, as confirmed by both material and media experts. Revisions were carried out in response to the constructive feedback and recommendations provided by the validators. The validation conducted by material experts was carried out in two phases. The initial phase identified aspects that needed revision,

while the subsequent phase, following improvements, verified that the product met validity criteria and was highly feasible. Meanwhile, the media expert evaluation was completed in a single phase, as the e-comic was considered valid and very appropriate for use as an instructional medium.

Based on the needs assessment conducted at SMAN 1 Pekalongan, it was identified that the school requires the development of additional technology-based learning resources, particularly for history subjects. According to Mrs. Nurhayati, a history teacher at the school, the types of learning resources most urgently needed include e-books, e-modules, flipbooks, animated instructional videos, and e-comics. To address this gap, the researchers designed and developed an e-comic as a supplementary history learning tool. The content and media design were carefully constructed following curriculum guidelines and validated by both material and media experts to ensure feasibility(Rahman, M., & Chan, 2022).

The development process consisted of several phases, beginning with expert validation and followed by student trials using questionnaires. Feedback from experts and practitioners provided the basis for revisions in both the content and design of the e-comic. The material experts suggested improvements such as revising the numbering of building illustrations to improve systematic organization, clarifying the title with the inclusion of the term "E-comic," refining the bibliography, and enhancing the conclusion section. They also recommended that the cover should display essential elements, including the title, institutional logo, author's name, student ID, and department. Meanwhile, media experts confirmed the suitability of the product as a learning resource but advised making the cover more visually engaging and ensuring that the learning objectives were stated more explicitly.

After these revisions, both experts and practitioners concluded that the developed e-comic was highly appropriate for use as a history learning resource, with the validation process categorizing it as “very suitable.” The e-comic contains key elements of historical content, including the biographies of prominent figures from the Samudra Pasai Kingdom, the contribution of the kingdom to the dissemination of Islam in Indonesia and the role of trade in its development, significant leaders and their contributions, as well as the cultural and religious impact of the kingdom in the archipelago. To enhance engagement, the e-comic incorporates visually appealing illustrations and interactive features, including an audio narration function that allows students to listen to explanations of the content. This “tap-to-voice” feature is particularly beneficial for auditory learners and supports differentiated learning styles (Haron, H., Alias, R. A., & Siew, 2022; Mayer, 2021).

Accessibility was also a key design consideration. Students can access the e-comic through a QR code provided by the researchers or via a direct web link, enabling use on mobile devices. Beyond the classroom, the Samudra Pasai Kingdom e-comic has broader applicability, serving as a resource for the wider public interested in Indonesia’s Islamic history. At present, the e-comic can be accessed online through the following link: <https://heyzine.com/flipbook/a2f945563a.html>

CONCLUSION

The results indicate that a validated and engaging e-comic was successfully developed as a digital medium for history learning. Expert evaluations confirmed that the e-comic meets both pedagogical and technical standards, demonstrating its feasibility as an instructional resource for teaching the history of the Samudra Pasai Kingdom. The integration of visual narratives and audio

features enhances student engagement and supports diverse learning preferences. This study contributes to history education by bridging digital learning media with locally grounded historical content, addressing the limited availability of innovative resources that accurately represent Indonesian history. By contextualizing historical material within a digital format, the e-comic supports more meaningful and student centered history learning. Future research is recommended to involve larger-scale implementation, comparative studies with other digital and non-digital learning media, and longitudinal investigations to examine the long-term impact of e-comic based learning on students’ historical thinking skills. From a practical perspective, the findings suggest the need for teacher training on the use of digital learning media, integration of e-comics into the history curriculum, and broader dissemination through open access platforms to increase accessibility and instructional impact.

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