International Journal of Engineering Trends and Technology
ISSN: 2231–5381 / https://doi.org/10.14445/22315381/IJETT-V73I9P108

Volume 73 Issue 9, 79-90, September 2025

Original Article

A Hybrid ADDIE-RAD Approach to Developing a Multimedia Learning Application

Lulu Jola Uktolseja[1*], Melda Agnes Manuhutu[2], Windy Wonmaly[3]

[1]*English Education Study Program, University of Victory Sorong, Indonesia.*
[2]*Information System Study Program, Victory University of Sorong, Indonesia.*
[3]*Education in Indonesian Language and Literature, University of Victory, Sorong, Indonesia.*

[*]*Corresponding Author : lulujola39@gmail.com*

Received: 26 May 2025 Revised: 01 September 2025 Accepted: 09 September 2025 Published: 30 September 2025

Abstract - *A learning application based on myths and legends was created to preserve local culture and support character education and multilingual learning. This research aims to create and develop a hybrid ADDIE-RAD-based application that will help users understand stories, expand their multilingual vocabulary, and understand the values of Pancasila. The method used is the ADDIE-RAD hybrid approach, which combines the ADDIE learning model with Rapid Application Development (RAD). While RAD enables quicker prototyping and iteration, the ADDIE paradigm guarantees an organized instructional design. After development, the application was tested using the black-box testing method to ensure its functionality. Test results show that all main features work well. This includes an interactive dictionary, a collection of stories in text, color, and image formats, and a reflection on the values of Pancasila. Users can easily switch between languages on the site, which improves their word retention and understanding in English and Moi. Additionally, this application combines character, language, and culture education in a multimedia-based digital platform. This application contributes to educational technology, preserves Papuan culture, and improves students' multilingual skills. The learning elements for navigation and linguistic structure are currently well-designed, with the opportunity for additional refinement to make them even more effective and user-friendly.*

Keywords - *ADDIE model, Multimedia learning, Multilingual, Indonesian character building, RAD model.*

1. Introduction

Modernization is a term that has been commonly heard since the early 2000s, when various fields began to shift from traditional formats or systems to the use of computers in carrying out various activities. This transformation certainly brings various benefits and significant positive impacts. The transformation is increasingly felt in providing increased effectiveness, efficiency, and optimization in various professional activities, including education. Traditional education has given way to contemporary education, which incorporates digital resources for flexible, customized, and interactive learning [1-8].

The modernization process, driven by technology adoption, has become the main driver for improving the quality of activities in various fields, including adaptive, innovative, and flexible learning processes, by adopting new media, such as multimedia, which combines text, color, and images. The use of new media in education is a complex matter, not only due to the use of technological tools but also because these tools can shape the social environment shaped by educational practices. However, transformation in the current era of modernization is undoubtedly unavoidable, so insight is needed so that this adaptation process can run well and provide a significant positive impact [9, 10]. One innovative new media in learning is multimedia learning applications, which are used in education. The role of multimedia is to facilitate access to learning and make it more flexible and dynamic [11-14]. This is also in line with the characteristics of Tech-Savvy Kids, especially students at the Klasaman 2 Christian Education Foundation Elementary School, Sorong City, Southwest Papua, who are used to and like the use of multimedia.

However, many schools, including this one, still use traditional media in learning, often only using writing on the whiteboard. Using multimedia learning applications can increase student involvement in learning, create an engaging and dynamic learning environment [15], and also prepare students to be competitive in the future because the use of multimedia learning applications encourages the development of analytical and critical thinking skills [16-18]. Using this new media can enable personalizing learning experiences for individuals with specific backgrounds [19]. For example, with diverse cultural backgrounds. The hybrid approach combines Analysis, Design, Development, Implementation, and

Evaluation. The sequence of stages, known as ADDIE [20-23], is integrated with Rapid Application Development (RAD) in developing multimedia learning applications to increase innovation in learning. This approach is very reliable, especially in maximizing learning in the current era of modernization. This hybrid approach is a strategy for transforming existing learning to create more dynamic and flexible multimedia-based learning solutions. In this research, it is necessary to develop a mobile multimedia application with sufficient iteration speed that can be built to adapt to user needs quickly.

The multimedia learning application that was built aims to answer the need for multilingual learning in three languages, namely English, Indonesian, and the regional language of the Moi tribe (the native tribe of Sorong city). The concept is that three languages are combined in one multimedia learning application that can be easily accessed from anywhere. The urgency is that students at this school have gadgets, but they mostly only use them for games. This learning concept will encourage students to use devices for learning needs by providing interesting information through text, color, and images. Apart from that, based on the report of Kompasiana in 2024, many elementary school students in the city of Sorong still show bullying behavior. This indicates that character strengthening in education needs to be improved. One way is to use this multimedia learning application that contains three languages and reflects stories about how students should react according to the Pancasila profile values contained in it.

The increasing use of multimedia in education makes this research increasingly relevant [24, 25]. The ADDIE-RAD hybrid approach can be explicitly applied in this multimedia learning application, especially at this school. The ADDIE model has been widely used in developing learning media, especially multimedia-based [26]. These three studies still focus on one field, while the current research is multilingual, namely English, Indonesian, and Moi. This application also encourages the growth of Pancasila student profiles, which was not done in the three previous studies. The current research will also be built using RAD, not only with ADDIE, for faster improvement based on feedback. This research aims to design and develop a hybrid ADDIE-RAD-based multimedia application that presents stories from the Land of Papua, by packaging three languages in one application and including reflections on Pancasila values. After that, the application is tested to ensure each feature works as expected. This research makes a real contribution to educational technology in Sorong City because it provides innovation in multilingual learning, improves the quality of education, and utilizes multimedia in basic education.

2. Related Works

ADDIE is known as a structured approach to instructional materials [27], while Rapid Application Development (RAD) emphasizes rapid iteration and prototyping [28, 29]. Previous studies [30, 31] have successfully created multimedia learning materials based on ADDIE to enhance proficiency in Indonesian and Lampung languages; however, their application remains limited to the pure ADDIE paradigm, monolingual content, and without reflection on Pancasila values. No research has yet combined ADDIE with RAD to accelerate learning development and incorporate multilingual, local cultural, and character education elements into a single multimedia program. By creating a multimedia application using the hybrid ADDIE-RAD method, this research bridges the gap in previous research and promotes language acquisition, cultural preservation, and the enforcement of Pancasila principles. This is also a novelty of the current research.

Additionally, there has been no specific discussion in previous research about integrating ADDIE-RAD in the combined learning of the national, foreign, and regional languages for schools in Sorong City, Southwest Papua. As acknowledged by the author and the existing literature, there has been no research on the application of hybrid ADDIE-RAD technology for multilingual learning in the Southwest Papua region.

However, students in this region are well equipped to receive learning using modern technology. Given this research gap, this study aims to fill the void by exploring this topic. As such, this research is expected to contribute both theoretically and practically. This research focuses on myths and stories from Papua and is presented in Indonesian, English, and Moi. These myths and stories include traditional tales that emphasize respect for nature and legends that emphasize community unity. These narratives are not only culturally significant but also align with the principles of Pancasila, making them relevant for cultural preservation and character education.

3. Materials and Methods

3.1. Requirements Specification

This application is developed to run on various gadgets powered by Android. This application supports multimedia features such as text, color, and images. It includes myth and legend from the Land of Papua in Indonesian, a dictionary of Indonesian, English, and Moi words, and a reflection on the values of Pancasila. This application provides digital access to Papuan myth and legend to preserve local culture, provides an interactive dictionary to improve understanding of Indonesian, English, and Moi, and instils Pancasila values through reflection in the form of text, color, and image. The functional requirements of this application, especially key features, are:

1. Collection of myth and legend in text, color, and image formats.
2. Translation of words inside the tale from Indonesian to English and Moi.

3. This usage is used to understand the application of Pancasila values in everyday life.
4. After the data is downloaded, this application is accessible without an internet connection.

Regarding non-functional requirements, this application supports Android compatibility with a responsive and user-friendly UI/UX design. The hardware and software requirements to build this application are as follows: the processor must have a minimum of Intel Core i3, equivalent, or more. The minimum RAM required is 4 GB. Also, storage should be at least 2 GB. The mobile device used for testing is Android, with a minimum of Android 7.0 or higher. This is because all the students at the school use Android, but none use iOS. The app requires at least 300 MB of storage space to install and test. When accessed via a computer, the required operating system is Windows 10 or above. The application was built and accessed via a web-based platform, requiring a supported browser like Mozilla Firefox, Microsoft Edge, Google Chrome, or another suitable browser. The users of this application are elementary school students at the Klasaman 2 Christian Education Foundation Elementary School, Sorong City, Southwest Papua, who are involved in the development of this application.

This application also does not rule out the possibility that the general public can access it to get to know the culture and life values contained in it. In addition, cultural researchers can access it to obtain linguistic data. One limitation of this application is that the stories provided come from the Land of Papua. The story can be updated at any time.

The validity and credibility of the application are guaranteed through translations by native speakers of the Moi language, data that has also been validated from the written Moi Language Dictionary, material testing by users, and technological evaluation on numerous Android devices. Furthermore, repeated assessments are conducted based on the RAD principle, whereby input from teachers and students is used to modify prototypes before finalization, ensuring consistent functionality and performance. This hybrid method enables the creation of interactive learning materials for elementary school students that are more appropriate and successful.

3.2. Process Design

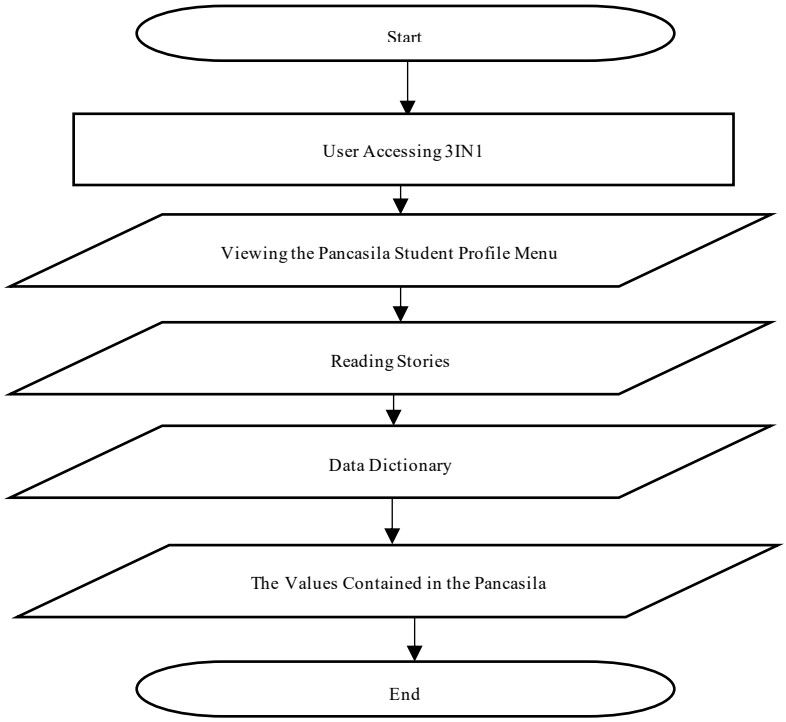

Fig. 1 System flowchart

This image explains the flow of this application. Users start using this application by accessing it through their respective devices. After logging in, users can explore the menu, which displays Pancasila student profiles. Next, users can choose to read stories containing myths and legends from districts and cities in Papua. After reading, users can use the vocabulary dictionary in Indonesian, English, and Moi. After completing the story, users will be directed to the reflection section on the Pancasila values contained in the story. Thus, students gain cultural insight and Pancasila values, which can be applied in everyday life while improving language skills, especially vocabulary in three languages. The process then ends when the user has explored all the features in the application.

3.3. System Design

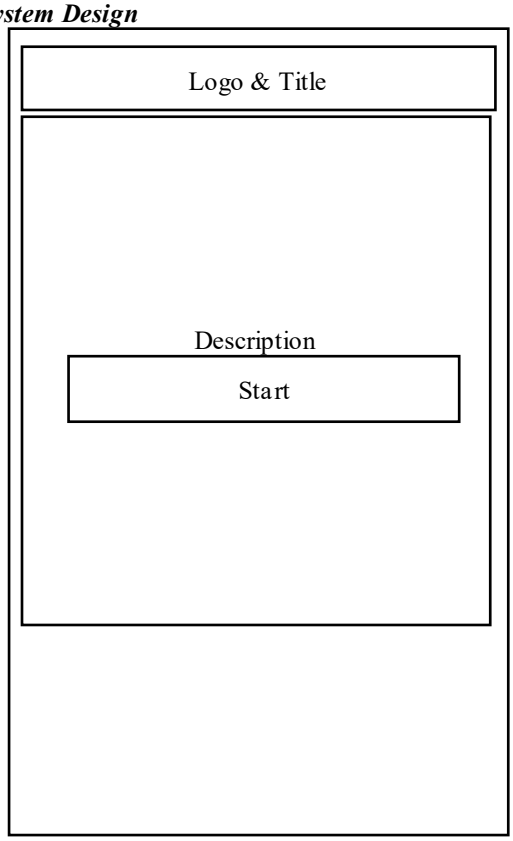

Fig. 2 UI mockup multimedia learning application

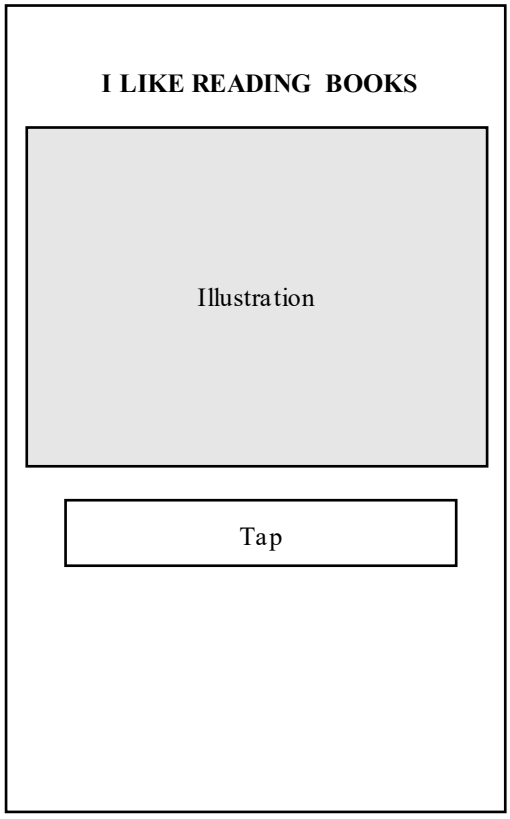

Fig. 3 UI mockup multimedia learning application

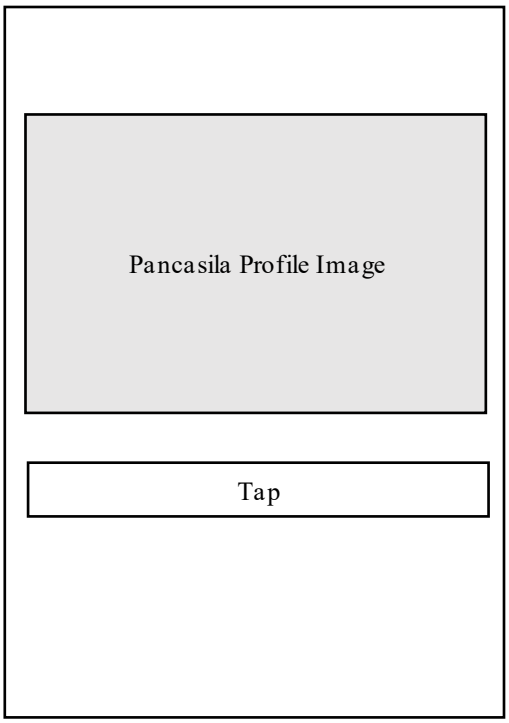

Fig. 4 UI mockup multimedia learning application

The home page displays the application's name and a short description. Then, a start button directs users to the next stage. After logging in, users will read an explanation of the importance of reading and the values of Pancasila.

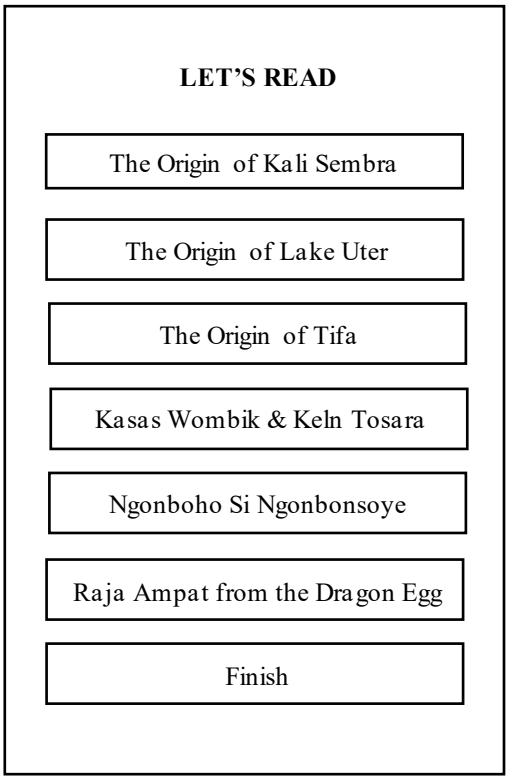

Fig. 5 UI mockup multimedia learning applications

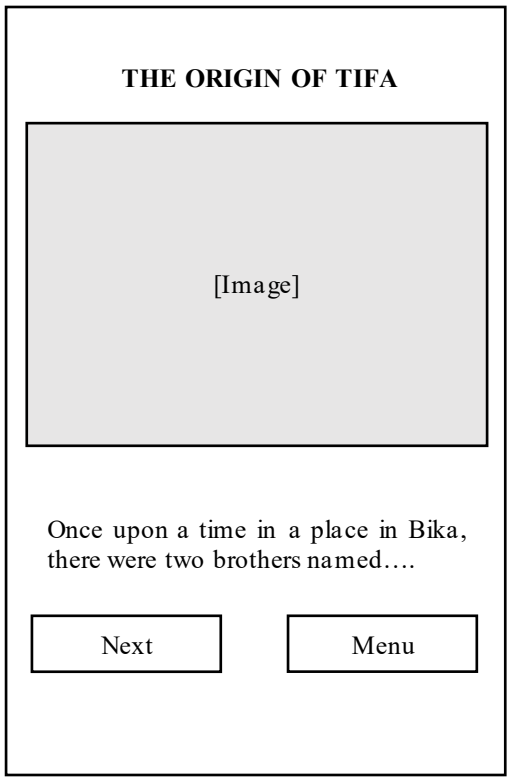

Fig. 6 UI mockup multimedia learning applications

Fig. 7 UI mockup multimedia learning applications

Figure 5 shows a selection of stories from various regions. When the user has selected a story, the user will be redirected to the story page, as shown in Figure 6. On this page, users can read the selected stories. The story's title is displayed at the top, followed by illustrations and the story's contents. There are two navigation buttons: "Next" to continue to the Word Dictionary page and "Menu" to return to the story list. The third screen is the page where the user clicks the "next" button. A Word Dictionary has a vocabulary list in three languages:

Indonesian, English, and Moi. Users can see equivalent words in these three languages. At the bottom of the Word Dictionary is a reflection on the Pancasila values contained in the story and a "Back" button to return to the story page.

3.4. System Modelling Language

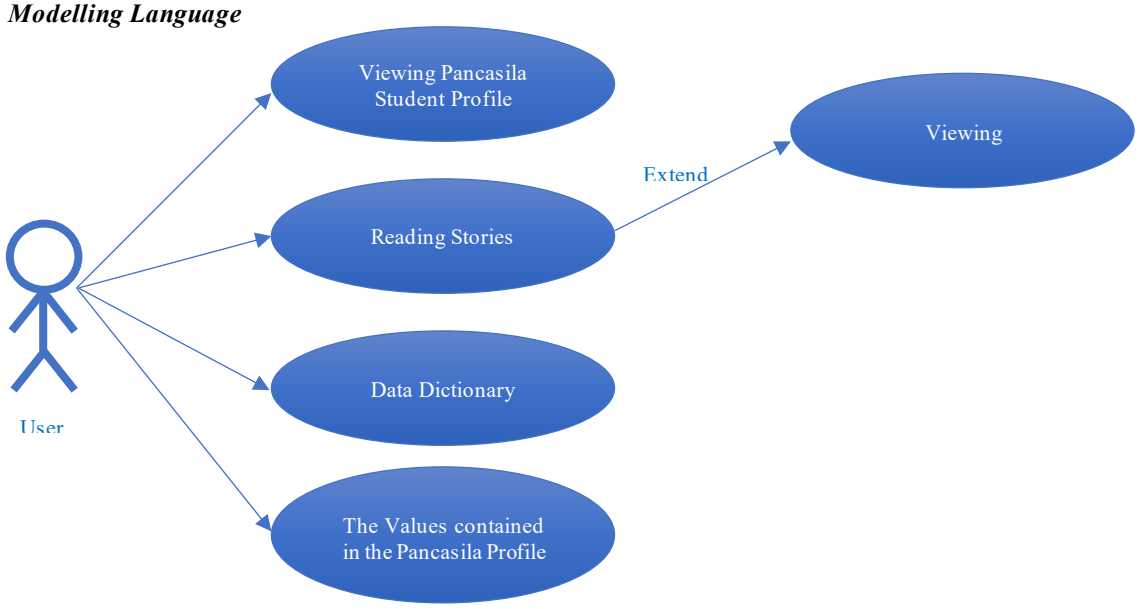

Fig. 8 Use case diagram

Use case shows user interactions with various features provided in this application. When using the application, users can carry out several activities, such as viewing Pancasila student profiles, which provide information about the character and values a student must have based on Pancasila principles. Then, users can read the available stories. When reading, users can see illustrations with interesting visual elements, mainly depicting various elements of Papuan culture, which can enrich the reading experience. The extended relationship in the diagram indicates this. A vocabulary dictionary feature also helps users understand words in three languages: Indonesian, English, and Moi. The application can allow users to relate the story's content to the character they want to develop daily.

3.5. System Development Model

The application design and development method in this research is Rapid Application Development (RAD), shown in the following figure [32]:

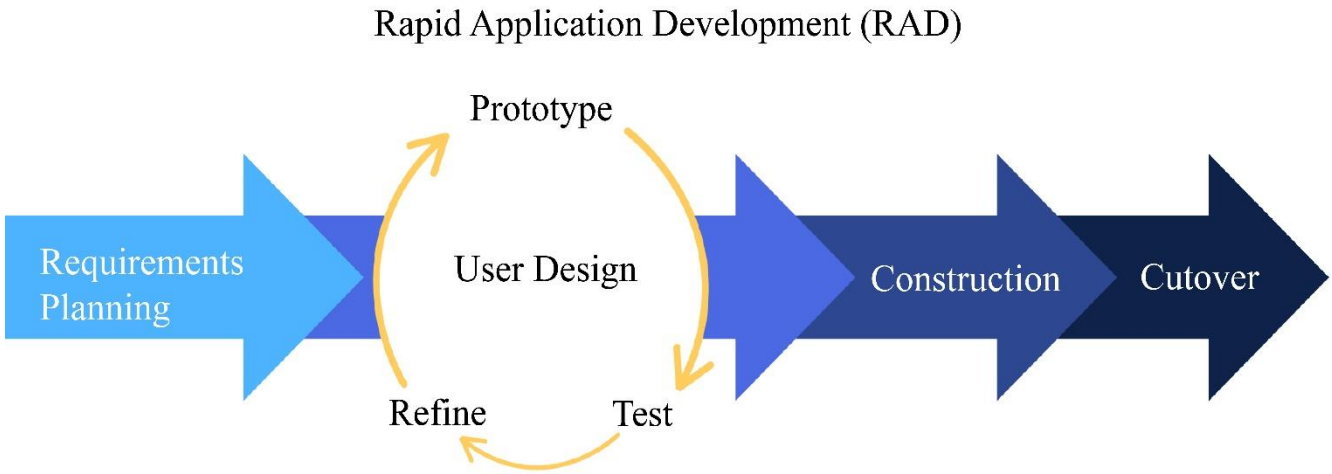

Fig. 9 Rapid Application Development (RAD) model

3.6. Instructional Design Models

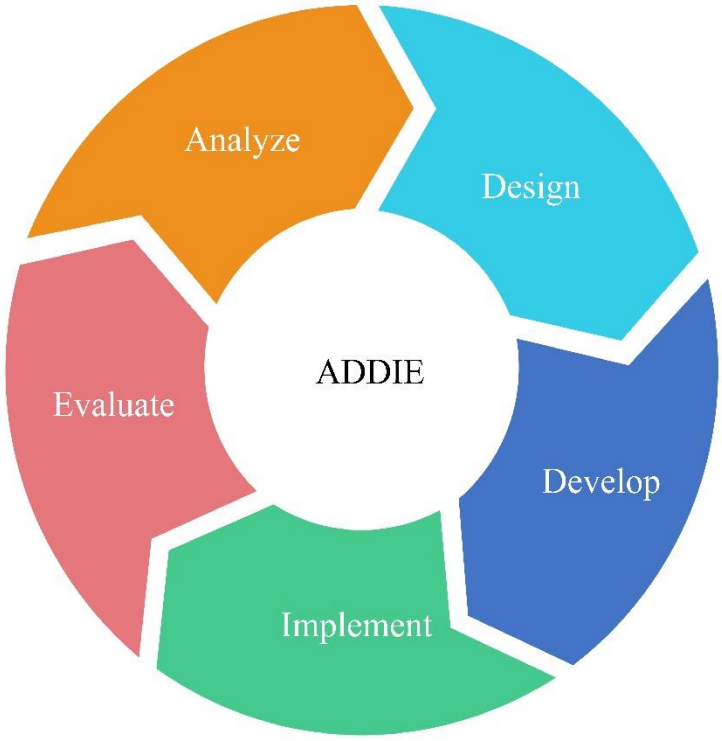

Fig. 10 ADDIE model

Educational designers often use ADDIE to compile and develop innovative instructional models [33]. Research also explains that ADDIE proves robust due to its highlighting of the content of the substance and the suitability of its implementation [34]. The ADDIE model has five stages that provide a framework for reflecting on its development. [35]. The ADDIE model comprises the phases represented by the acronym from the analysis to the evaluation [36]. It serves as an organized guide to develop applicable instructional activities.

3.7. Integration in Hybrid ADDIE-RAD

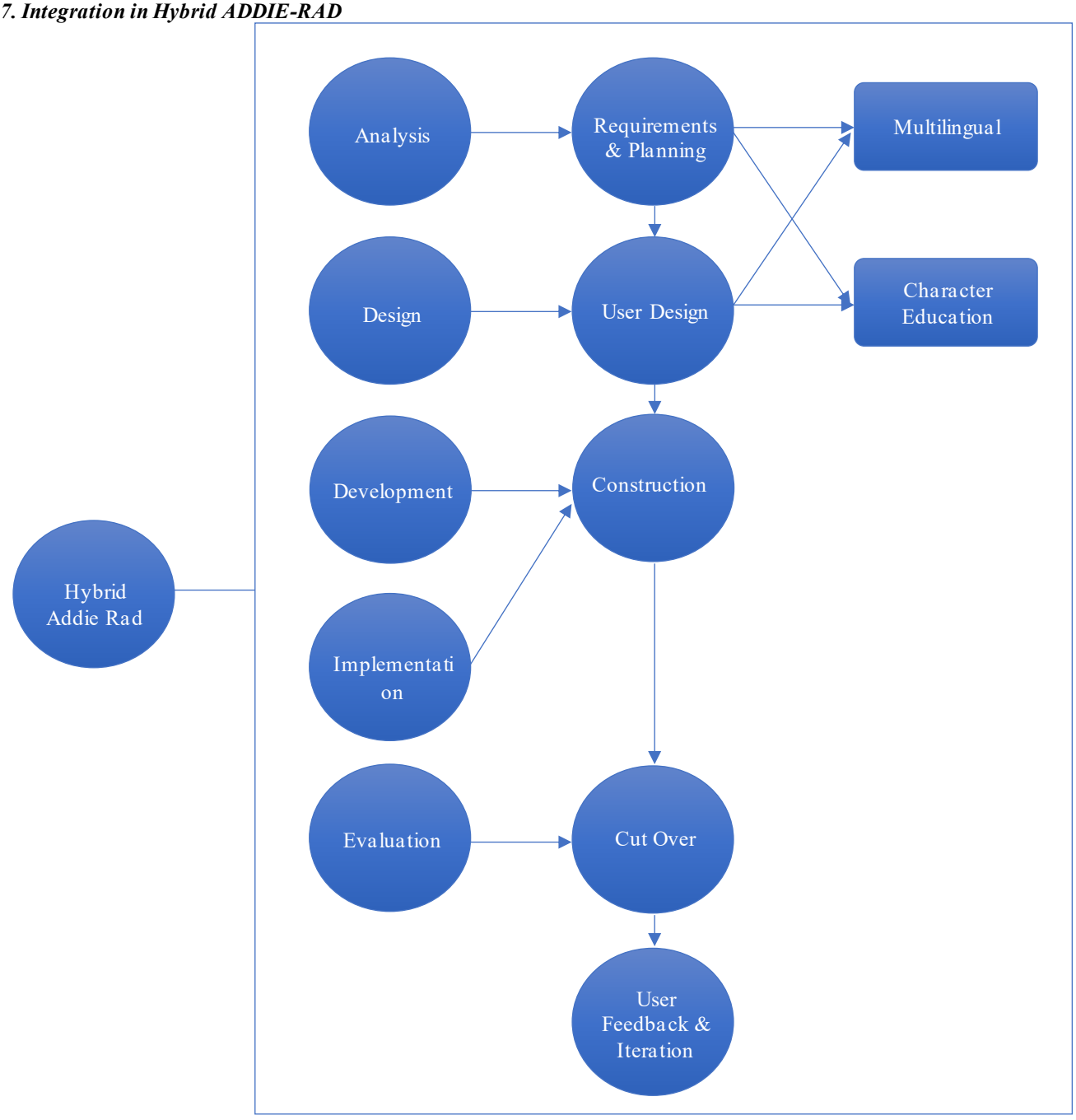

Fig. 11 The hybrid of ADDIE-RAD with multilingual and character education

In this research, a hybrid integration of ADDIE and RAD was carried out to build this application. In developing this application, the ADDIE and RAD approaches were integrated. ADDIE will provide a learning instructional design framework, while RAD provides a framework for developing applications quickly with repeated iterations according to user input. Several stages are integrated, which can be explained as follows:

1. Analysis - Requirements and Planning
   Combining learning needs analysis with application system specifications.
2. Design - User Design
   Pedagogy-based design combined with interactive prototype development.
3. Development – Construction
   Develop learning materials and content. Then, learning content is integrated into iteration-based application development.
4. Implementation – Construction
   Testing applications in a learning environment. Iterate on creating and testing application prototypes and conducting system trials with users. The implementation is tested in real scenarios with early users.
5. Evaluation - Cut Over
   Measuring the effectiveness of learning and system improvements. User feedback for app improvement. Pedagogical and technical evaluations will be used for the next iteration.

This hybrid model provides several advantages, such as flexibility in development and updates, supports multilingualism and character education, and is based on user needs.

4. Result and Discussion

4.1. Presentation of Findings

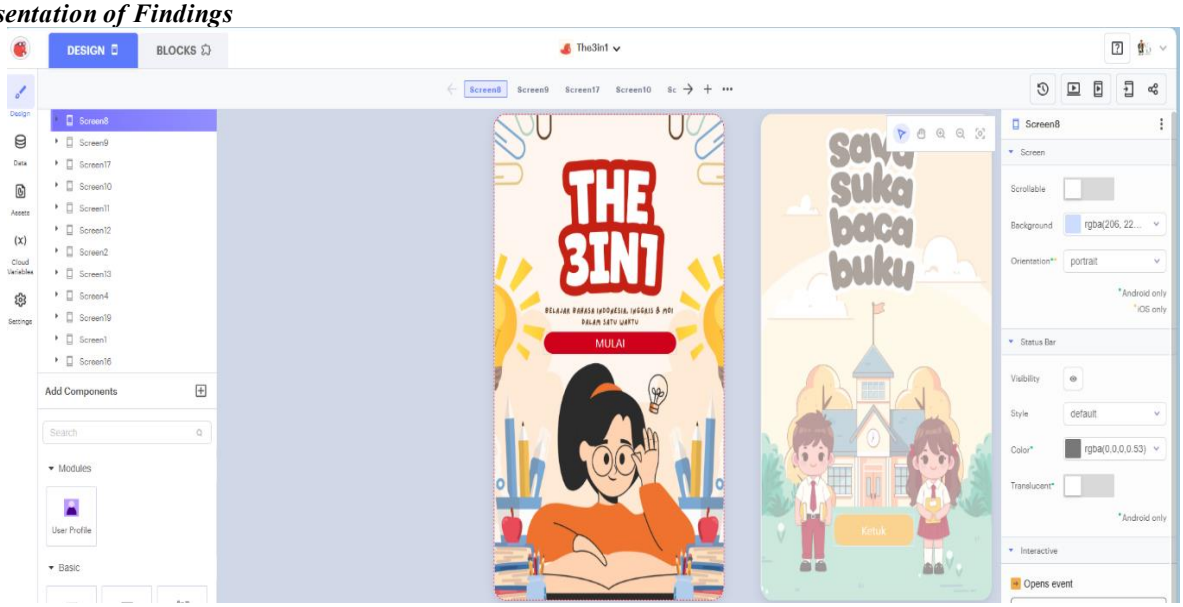

Fig. 12 Design page view

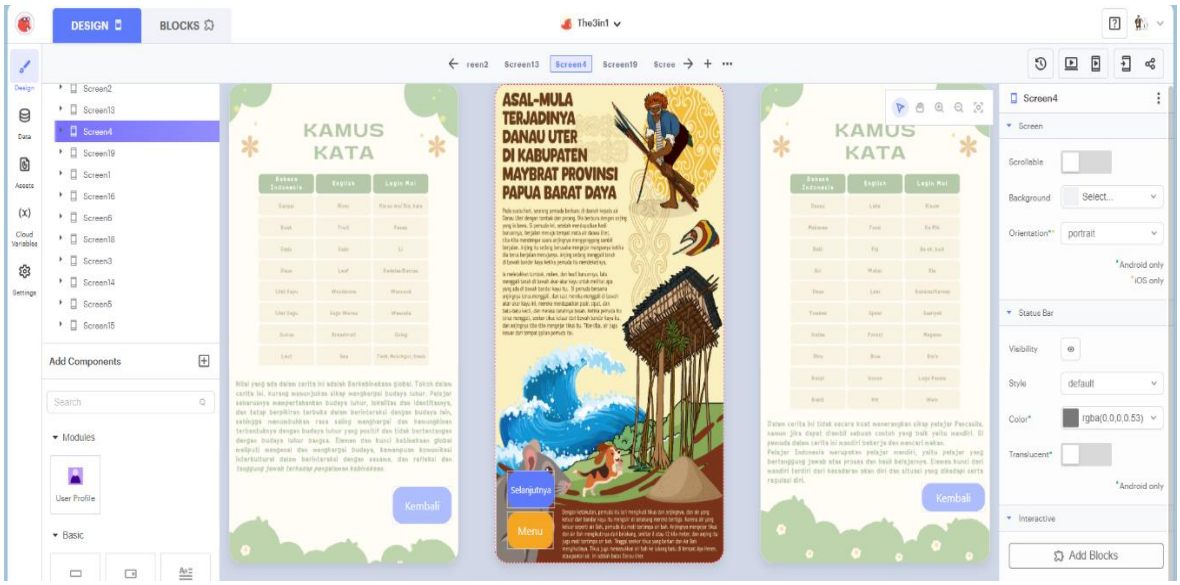

Fig. 13 Design page view

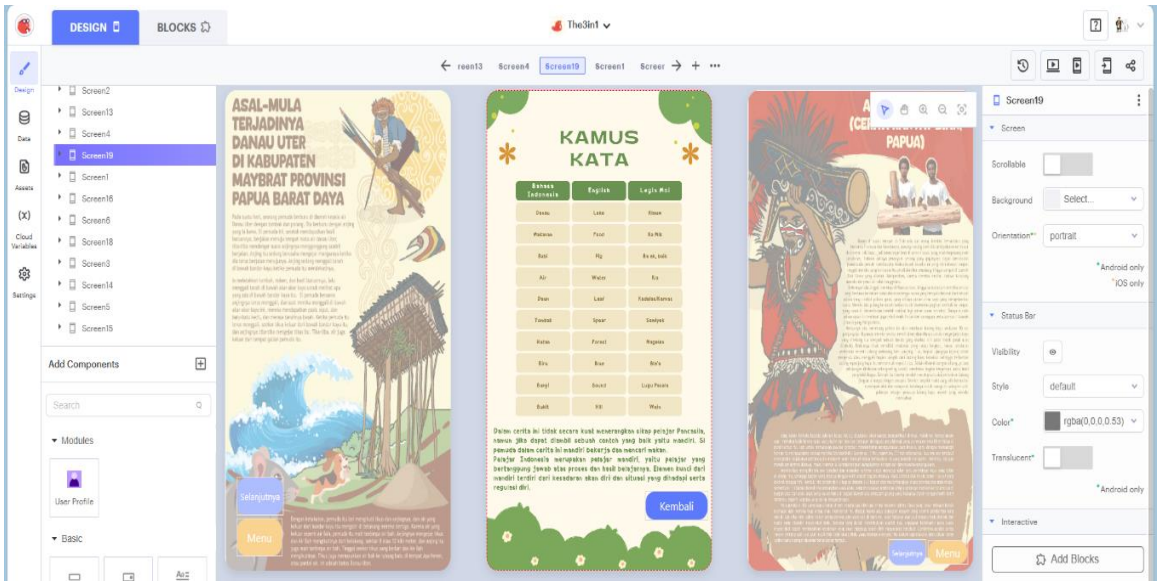

Fig. 14 Design page view

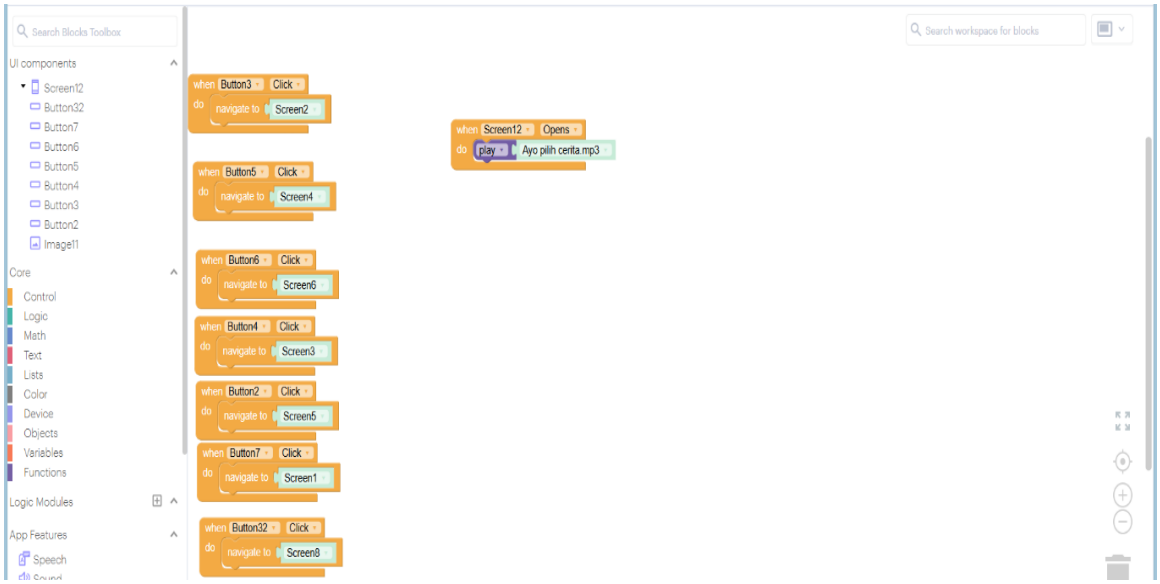

Fig. 15 Coding

4.2. Application Testing

After the system is designed and built, the next stage is to test the application using the black-box testing method to ensure that each feature functions well and as expected. This test is carried out by testing the input and output. The following is the explanation in the table:

Table 1. Black-box testing

No.	Testing Aspect	Expected Result	Actual Result	Notes (Bug/Issue)	Stage in Hybrid ADDIE-RAD
1	Key feature (Main Function)	Core features work as designed	Success	-	Implementation (ADDIE)/construction (RAD)
2	User interface and user experience (UI/UX)	Buttons, layout, and design are displayed properly	Success	No issues found	User design (RAD)/Evaluation (ADDIE)
3	System Security and reliability	The application runs stably without crashes/errors	Success	No intrusion or interference	Construction (RAD)/cutover (RAD)

4	Responsiveness and performance	Page loading < 3 seconds	Avg. 2.7 sec	Within normal limits	Implementation (ADDIE)/Construction (RAD)
5	Navigation and user experience	Users can navigate between menus smoothly	Success	-	User design (RAD)/evaluation (ADDIE)

Based on this table, this test ensures that every important aspect functions properly. The main features, interface, reliability, compatibility, performance, and navigation run well and as expected. After carrying out this research, it can be compared with several previous studies, which will be explained here. The current research is mobile-based with an ADDIE model, unlike previous research, which was desktop-based [37]. This current study focuses on digital implementation, not just the development of theory-based learning [38]. This research builds a mobile application, not an e-book [39]. This research focuses on multilingual applications and the profile of Pancasila, and does not only focus on social aspects [40]. This research uses a hybrid model, namely the ADDIE model for instructional learning and RAD for the system development model. Thus, this research focuses on and balances the two fields, namely education and technology, with integration. Thus, this research makes a more profound contribution to science.

In addition to black box testing, trials were conducted with students and teachers at Klasaman 2 Christian Education Foundation Elementary School, Sorong City, Southwest Papua. At this stage, respondents were given a feedback form and observed directly to assess their experience with the application, with an emphasis on overall impressions and practicality. The findings indicate that the program is easy to use, well understood, and highly valued by users. These findings are also correlated with the demographic and students' educational interests in Southwest Papua, especially in this school, which requires simple, interactive, interesting, and contextual learning media. These findings further reinforce the results of functional testing, which show that the application has been running according to its development objectives and has good technical effectiveness.

Apart from that, this application is undoubtedly more effective than traditional models. There were no significant obstacles in implementing this activity because the students were very enthusiastic about learning. If there was a challenge, it is only because applications with three languages, especially regional languages, are not commonplace and require adjustments. Moreover, through further study, this application can be modified for similar educational levels in the Sorong City area or even used in other areas of Indonesia with different language and cultural needs. To improve the adaptability and usability of the application, the integration of new features that are appropriate to local needs and different curricula is being explored.

5. Conclusion

A learning application based on Papua myths and legends has been successfully developed and tested using black-box testing. The results show that all the main features are working correctly. This application is for Android devices and supports multimedia features such as text, color, and images. A collection of Papuan myths and legends, an interactive dictionary in three languages, and a representation of Pancasila values in text, color, and image make the app easier to use. Once the data is downloaded, offline access is also allowed. The ADDIE-RAD hybrid approach was used to develop this application, specifically for multilingual learning in elementary schools. It can teach language, protect Papuan culture, and spread Pancasila values. Overall, the app has shown improved story comprehension, support for multilingual learning, and character education. Additionally, this research shows advances in media-based learning, which is a real contribution to educational technology. However, certain features can still be improved to improve the user experience. For example, features of teaching language structures and improving navigation are possible. For future plans, other myths and legends in Southwest Papua will continue to be added to the application so that students can study more deeply.

Acknowledgments

The researchers acknowledge the support granted by Kemenristekdikti, now referred to as Kemdiktisaintek, which is responsible for higher education.

References

[1] Babu George, and Ontario Wooden, "Managing the Strategic Transformation of Higher Education through Artificial Intelligence," *Administrative Science*, vol. 13, no. 9, pp. 1-20, 2023. [CrossRef] [Google Scholar] [Publisher Link]

[2] Nayef Shaie Alotaibi, "The Impact of AI and LMS Integration on the Future of Higher Education: Opportunities, Challenges, and Strategies for Transformation," *Sustainability*, vol. 16, no. 23, pp. 1-21 2024. [CrossRef] [Google Scholar] [Publisher Link]

[3] Firuz Kamalov, David Santandreu Calonge, and Ikhlaas Gurrib, "New Era of Artificial Intelligence in Education: Towards a Sustainable Multifaceted Revolution," *Sustainability*, vol. 15, no. 16, pp. 1-27, 2023. [CrossRef] [Google Scholar] [Publisher Link]

[4] Chrysovalantis Kefalis, Constantine Skordoulis, and Athanasios Drigas, "Digital Simulations in STEM Education: Insights from Recent Empirical Studies, A Systematic Review," *Encyclopedia*, vol. 5, no. 1, pp. 1-18, 2025. [CrossRef] [Google Scholar] [Publisher Link]

[5] Wenyang Cao, Nhu Tam Mai, and Wuyuan Guo, "Personalized Learning and Adaptive Systems: AI-Driven Educational Innovation and Student Outcome Enhancement," *International Journal of Education and Humanities*, vol. 20, no. 2, pp. 173-182, 2025. [CrossRef] [Google Scholar] [Publisher Link]

[6] Mamdouh Alenezi, "Digital Learning and Digital Institution in Higher Education," *Education Science*, vol. 13, no. 1, pp. 1-18, 2023. [CrossRef] [Google Scholar] [Publisher Link]

[7] Brian Whalley et al., "Towards Flexible Personalized Learning and the Future Educational System in the Fourth Industrial Revolution in the Wake of Covid-19," *Higher Education Pedagogies*, vol. 6, no. 1, pp. 79-99, 2021. [CrossRef] [Google Scholar] [Publisher Link]

[8] Louis Major, Gill A. Francis, and Maria Tsapali, "The Effectiveness of Technology-Supported Personalised Learning in Low- and Middle-Income Countries: A Meta-Analysis," *British Journal of Educational Technology*, vol. 52, no. 5, pp. 1935-1964, 2021. [CrossRef] [Google Scholar] [Publisher Link]

[9] Teresa Galanti et al., "Digital Transformation: Inevitable Change or Sizable Opportunity? The Strategic Role of HR Management in Industry 4.0," *Administrative Science*, vol. 13, no. 2, pp. 1-19, 2023. [CrossRef] [Google Scholar] [Publisher Link]

[10] Oluwadunsin Ajulo, Jason Von-Meding, and Patrick Tang, "Upending the Status QUO Through Transformative Adaptation: A Systematic Literature Review," *Progress in Disaster Science*, vol. 6, pp. 1-10, 2020. [CrossRef] [Google Scholar] [Publisher Link]

[11] Husam Yaseen et al., "The Impact of Adaptive Learning Technologies, Personalized Feedback, and Interactive AI Tools on Student Engagement: The Moderating Role of Digital Literacy," *Sustainability*, vol. 17, no. 3, pp. 1-27, 2025. [CrossRef] [Google Scholar] [Publisher Link]

[12] Aaron Haddock et al., "Positive Effects of Digital Technology Use by Adolescents: A Scoping Review of the Literature," *International Journal of Environmental Research and Public Health*, vol. 19, no. 21, pp. 1-17, 2022. [CrossRef] [Google Scholar] [Publisher Link]

[13] Vicente Javier Clemente-Suárez et al., "Digital Device Usage and Childhood Cognitive Development: Exploring Effects on Cognitive Abilities," *Children*, vol. 11, no. 11, pp. 1-27, 2024. [CrossRef] [Google Scholar] [Publisher Link]

[14] He Huang, and Chuanyin Cheng, "The Benefits of Video Games on Brain Cognitive Function: A Systematic Review of Functional Magnetic Resonance Imaging Studies," *Applied Science*, vol. 12, no. 11, pp. 1-10, 2022. [CrossRef] [Google Scholar] [Publisher Link]

[15] Eka Selvi Handayani et al., "The Urgency of Using Interactive Learning Media in Elementary School Education in the Cybernetics Era," *Innovative: Journal of Social Science Research*, vol. 4, no. 5, pp. 8522-8530, 2024. [Google Scholar] [Publisher Link]

[16] Akylbek Meirbekov, Inga Maslova, and Zemfira Gallyamova, "Digital Education Tools for Critical Thinking Development," *Thinking Skills and Creativity*, vol. 44, pp. 1-21, 2022. [CrossRef] [Google Scholar] [Publisher Link]

[17] Suryanti et al., "STEAM-Project-Based Learning: A Catalyst for Elementary School Students' Scientific Literacy Skills," *European Journal of Educational Research*, vol. 13, no. 1, pp. 1-14, 2024. [CrossRef] [Google Scholar] [Publisher Link]

[18] Laili Ulviah, "The Use of Interactive Multimedia in Improving Critical Thinking Skills of Elementary School Students," *Social, Humanities, and Educational Studies (SHES): Conference Series*, vol. 7, no. 3, pp. 976-985, 2024. [CrossRef] [Google Scholar] [Publisher Link]

[19] Emeka Joshua Chukwuemeka, and Musa Garba, "Technology as a Catalyst for Learning and Unlearning: A Tool for Navigating Education in a Dynamic Society," *European Journal of Interactive Multimedia and Education*, vol. 5, no. 2, pp. 1-8, 2024. [CrossRef] [Google Scholar] [Publisher Link]

[20] Shariful Islam Shakeel, Md Abdullah Al Mamun, and Md Faruque Ahmed Haolader, "Instructional Design with ADDIE and Rapid Prototyping for Blended Learning: Validation and its Acceptance in the Context of TVET Bangladesh," *Education and Information Technologies*, vol. 28, no. 6, pp. 7601-7630, 2022. [CrossRef] [Google Scholar] [Publisher Link]

[21] Diana Rossa Martatiyana, Herlina Usman, and Hasanah Dewi Lestari, "Application of the Addie Model in Designing Digital Teaching Materials," *Journal of Elementary School Teacher Education and Teaching (JPPGuseda)*, vol. 6, no. 1, pp. 105-109, 2023. [CrossRef] [Google Scholar] [Publisher Link]

[22] Liangyue Lu, and Meredith L.C. Sides, "Instructional Design for Effective Teaching: The Application of ADDIE Model in a College Reading Lesson," *NOSS Practitioner to Practitioner*, vol. 11, no. 1, pp. 4-12, 2022. [Google Scholar] [Publisher Link]

[23] Mat Reduhan Samsudin et al., "Mobile Application Development Through ADDIE Model," *International Journal of Academic Research in Progressive Education and Development*, vol. 10, no. 2, pp. 1017-1027, 2021. [CrossRef] [Google Scholar] [Publisher Link]

[24] Genç Osman Ilhan, and Sahin Oruç, "Effect of the use of Multimedia on Students' Performance: A Case Study of Social Studies Class," *Educational Research and Reviews*, vol. 11, no. 8, pp. 877-882, 2016. [Google Scholar] [Publisher Link]

[25] Xiaodong Sun et al., "Effects of Multimedia Integrated Fine Arts Education on Students' Learning Attitude and Learning Satisfaction," *Frontiers in Psychology*, vol. 13, pp. 1-8, 2022. [CrossRef] [Google Scholar] [Publisher Link]

[26] Nor Hasbiah Ubaidullah, Aizu Khalili Zohedi, and Norasikin Fabil, "Development of a New Application for Multimedia Learning with Animation Exaggeration Based on Addie Model," *The International Journal of Multimedia & Its Applications (IJMA)*, vol. 9, no. 4/5/6, pp. 39-49, 2017. [CrossRef] [Google Scholar] [Publisher Link]

[27] Roslina Suratnu, "The Adoption of The Addie Model in Designing an Instructional Module: The Case of Malay Language Remove Students," *IJIET International Journal of Indonesian Education and Teaching*, vol. 7, no. 2, pp. 262-270, 2023. [CrossRef] [Google Scholar] [Publisher Link]

[28] Agustinus Noertjahyana, "Analysis Study of Rapid Application Development as an Alternative Software Development Methods," *Journal of Informatics*, vol. 3, no. 2, pp. 64-68, 2002. [CrossRef] [Google Scholar] [Publisher Link]

[29] Sofiansyah Fadli, "Rapid Application Development Model in Developing Hotel Room Reservation and Rental Systems," *Journal of Informatics and Electronic Engineering*, vol. 1, no. 1, pp. 57-64, 2018. [CrossRef] [Google Scholar] [Publisher Link]

[30] Haryuning Tias, and Usep Saprudin, "Interactive Learning Media for Mastering Lampung Language Vocabulary in 4th-5th Grade Elementary School Using the ADDIE Model," *International Journal Software Engineering and Computer Science (IJSECS)*, vol. 5, no. 1, pp. 429-441, 2025. [CrossRef] [Google Scholar] [Publisher Link]

[31] Ardhika Taruna Eras Sasongko, Wahid Wijaya, and Riyan Abdul Aziz, "Indonesian Language Learning Media Design for Elementary School Children," *Intechno Journal*, vol. 6, no. 1, pp. 19-26, 2024. [CrossRef] [Google Scholar] [Publisher Link]

[32] Rafael Claveria, John Mark Amar, and Kristine T. Soberano, "Guardian Insight: Empowering Safety through Advanced Data Analytics," *GAS Publisher*, vol. 2, no. 9, pp. 379-387, 2024. [CrossRef] [Publisher Link]

[33] Adamantia G. Spatioti, Ioannis Kazanidis, and Jenny Pange, "A Comparative Study of the ADDIE Instructional Design Model in Distance Education," *Information*, vol. 13, no. 9, pp. 1-20, 2022. [CrossRef] [Google Scholar] [Publisher Link]

[34] Hasna Nirfya Rahmandhani, and Ema Utami, "Comparative Analysis of ADDIE and ASSURE Models in Designing Learning Media Applications," *Jurnal Educative: Journal of Educational Studies*, vol. 7, no. 2, pp. 125-138, 2022. [CrossRef] [Google Scholar] [Publisher Link]

[35] Hussein Ahmed Shahat, Sherif Adel Gaber, and Hussam Khalifah Aldawsari, "Using the ADDIE Model to Teach Creativity in the Synthesis of Raw Materials," *International Journal of Learning, Teaching and Educational Research*, vol. 22, no. 6, pp. 262-281, 2023. [Google Scholar] [Publisher Link]

[36] Hassan Abuhassna et al., "Synthesizing Technology Integration within the Addie Model for Instructional Design: A Comprehensive Systematic Literature Review," *Journal of Autonomous Intelligence*, vol. 7, no. 5, pp. 1-28, 2024. [CrossRef] [Google Scholar] [Publisher Link]

[37] Masyitah Rusli, and Hadi Sutopo, "Implementation of Multimedia Based Graph Coloring Learning Model," *Journal of Theoretical and Applied Information Technology*, vol. 95, no. 11, pp. 2516-2522, 2017. [Google Scholar] [Publisher Link]

[38] Moses Adeleke Adeoye et al., "Revolutionizing Education: Unleashing the Power of the ADDIE Model for Effective Teaching and Learning," *Indonesian Journal of Education*, vol. 13, no. 1, pp. 202-209, 2024. [CrossRef] [Google Scholar] [Publisher Link]

[39] Najuah and Sidiq, Ricu and Lukitoyo, and Pristi Suhendro, "The Development Electronic Module of History Using ADDIE Model," *International Journal of Educational Research & Social Sciences*, vol. 2, no. 6, pp. 1658-1663, 2021. [Google Scholar]

[40] Dadan Nugraha, Fasli Jalal, and Sofia Hartanti, "Development of Digital Media Based on Visual Novel (Pros-VN) to Improve Prosocial Behavior in Early Childhood," *Journal of Theoretical and Applied Information Technology*, vol. 101, no. 14, pp. 5725-5733, 2023. [Google Scholar] [Publisher Link]