

Feasibility Of Electronic Comics For The Introduction Of Clean And Healthy Living Behaviors At Mulya Fajar Kindergarten, Indragiri Hulu Regency

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ABSTRACT

This research aims to develop an electronic comic (e-comic) as an innovative learning medium for introducing clean and healthy living behaviors at Mulya Fajar Kindergarten in Indragiri Hulu Regency. The e-comic is designed to enhance the interest and understanding of 4-5-year-old children in the importance of maintaining a clean and healthy lifestyle, which is a crucial aspect of early childhood education. The research began with an initial study to gather information and understand the current situation of teaching and learning activities at Mulya Fajar Kindergarten, particularly in the context of teaching about clean and healthy living. The researcher conducted observations and interviews with the school supervisor and teachers to identify any issues in the learning process, especially related to the introduction of clean and healthy living behaviors. The design of the e-comic was planned in stages, considering the appropriate materials for children to learn about clean and healthy living, the amount of information to be introduced, and any obstacles faced by teachers or students in teaching these concepts. The e-comic was created using the Canva platform, which offers a variety of tools for drawing illustrations, applying color palettes, adding text and dialog balloons, and incorporating graphic elements relevant to the theme of cleanliness and health. The final product of this research is an e-comic that has been tested and revised to ensure its quality and effectiveness. The e-comic is intended for use as an electronic learning medium for children aged 4-5 at Mulya Fajar Kindergarten in Indragiri Hulu Regency. The research also includes a statement of originality, confirming that the work is the researcher's own and free from plagiarism, and a validation sheet for the progress of the research project. The e-comic is expected to be a specific product that can be used to introduce clean and healthy living behaviors to young children, promoting interactive visual narratives that can develop children's language skills and creativity, as well as providing teachers with creative and innovative experiences to teach these concepts.

Keywords: *Electronic Comic Development, Early Childhood Education, Clean and Healthy Living Behaviors*

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INTRODUCTION

Health is a state of both mind and body that allows a person to carry out his duties and functions (Alam, 2017). The current level of children's health cannot be said to

be very good, especially school-age children who are not aware of the importance of knowing and understanding clean and healthy living behaviors in daily life. This is supported by the findings of the London School of Hygiene & Tropical Medicine (LSHTM) which shows that two-thirds (76.6%) of children aged 5-15 years experience pain every two months every day.

Problems with clean and healthy living behaviors and school environments include germ diseases in early childhood as much as 18.7%, correct handwashing behavior with soap as much as 17.2%, and abnormal food poisoning incidents in schools as many as 2,959 cases in 2023. From the data, it can be seen that the clean and healthy living behavior of young children is still very low (Novika et al., 2023).

One of the health programs implemented by the government in schools is Clean and Healthy Living Behavior. This clean and healthy living behavior is mainly to get children used to living a healthy life. Children's clean and healthy living behavior should start as early as possible, because childcare habits, including the care provided by the people around them, will have a direct effect on the next healthy behavior. Clean and Healthy Living Behavior is all healthy behavior that is consciously carried out by each individual and group (Nurmahmudah et al., 2018).

Through the habit of clean and healthy living behaviors, children will get used to doing activities such as washing hands, maintaining personal hygiene, disposing of garbage in its place, and others. This habit will carry over until they become adults and become a positive lifestyle. However, in the field, there are still many early childhood children who do not have the understanding and awareness of the importance of clean and healthy living. They are still often seen playing without washing their hands, littering, and other clean living behaviors that have not been properly formed.

Indragiri Hulu Regency is facing serious problems related to children's health. Data from the local Health Office in 2022 shows that the incidence of diseases due to unclean and unhealthy lifestyle behaviors is quite high, with 1,287 cases of diarrhea, 742 cases of ISPA, and 319 cases of skin diseases in children. This fact emphasizes the need for effective educational efforts to increase children's understanding of clean and healthy living.

Based on field observations on December 1, 2023 conducted by researchers, a comparison of the implementation of Clean and Healthy Living Behavior (PHBS) in schools such as Mulya Fajar Kindergarten and Indragiri Hulu Regency found that Mulya Fajar Kindergarten only adopted 4 indicators, namely washing hands with clean running water, using clean toilets, weighing and measuring height, and disposing of garbage in its place. while Fafitri Kindergarten implements 3 indicators of clean and healthy living behavior (PHBS), namely washing hands with running water, weighing, measuring height, and disposing of garbage in its place. The right place, the advantage of Mulya Fajar Kindergarten is that the school has implemented 7 indicators, namely washing hands with running water and soap, eating healthy snacks in the school canteen, using clean and

healthy toilets, exercising regularly every day. , eradicate mosquito larvae every 6 Weigh your height once a month and dispose of garbage in its place.

This is further strengthened by the author's interview with *Buatkan* in English. The Head of Mulya Fajar Kindergarten and Indragiri Hulu Regency said that clean and healthy behavior is achieved through the socialization of sustainable Clean and Healthy Living behaviors. Mulya Fajar Kindergarten, Indragiri Hulu Regency, will implement 7 Clean and Healthy Living Behavior Indicators starting in 2023. The application of 7 indicators of clean and healthy living behavior includes washing hands with running water and using soap, consuming healthy snacks provided in the school canteen, using clean and healthy toilets, exercising regularly, removing mosquito larvae, weighing and measuring height every 6 months, and disposing of garbage in its place (Kementerian Kesehatan Republik Indonesia, 2018). It is very important to apply clean and healthy living behaviors in early childhood so that children can live healthy and learn smoothly. However, not all children develop clean and healthy living behaviors

One of the challenges in teaching clean and healthy living behaviors to early childhood is how to present interesting and easy-to-understand learning materials. Children at this age have a relatively short attention span and are more interested in visual and interactive media. Therefore, conventional learning media such as textbooks or lectures may be less effective in attracting their interest and facilitating their understanding. More interesting and interactive learning media are needed, such as electronic comics (Junioviona et al., 2020).

Along with the times, digital technology is increasingly touching various aspects of life, including in the world of education. Various digital technology-based learning innovations have been widely developed and applied to improve the quality of the teaching and learning process. One form of innovation is the use of electronic comics (e-comic) as a learning medium. Electronic comics have the advantage of presenting material visually and interactively, so that they can attract the interest and attention of students, especially early childhood.

The findings of Widyastuti (2016) show that clean and healthy living behaviors can be introduced by providing training on the use of learning media in the form of video games to early childhood (Widyastuti et al., 2016). Teachers provide knowledge about Clean and Healthy Living Behaviors (PHBS) and conduct simulations of children using video games to practice clean and healthy living behaviors. Furthermore, the research of Karuniawati & Putrianti (2020) states that the application of clean and healthy living behaviors can maintain and improve health and prevent the threat of infectious diseases (Karuniawati & Putrianti, 2020).

However, the use of electronic comics as a learning medium at the Kindergarten (TK) level is still not widely explored. In fact, early childhood has a distinctive characteristic, where they tend to be more interested in things that are visual, interactive, and fun. This problem needs to be solved properly, one of which is to develop learning media that is interesting and in accordance with the characteristics of early childhood.

Electronic comics are considered to be an effective alternative media to introduce the concept of clean and healthy living to kindergarten children.

Electronic comics have great potential as a learning medium that can meet the needs of early childhood children at Mulya Fajar Kindergarten, Indragiri Hulu Regency. This media combines engaging visual elements, dynamic narratives, and interactivity that can increase children's involvement in the learning process. In addition, electronic comics also allow children to learn independently or with the guidance of teachers, providing flexibility in the learning process.

The development of electronic comics also allows for the adjustment of content, design, and interactivity according to the needs and preferences of children at Mulya Fajar Kindergarten. This can help increase the effectiveness of the learning media in achieving educational goals, namely instilling clean and healthy living behaviors from an early age.

One of the research gaps that has emerged is the limited number of studies that specifically examine the development of electronic comics in instilling clean and healthy living behaviors in early childhood. Most previous research has focused more on the use of electronic comics in academic learning contexts such as language, mathematics, or science. However, there are still few who explore the use of electronic comics in the context of health education and healthy living behaviors for early childhood.

In addition, there are also research gaps related to the design and development of electronic comics that are in accordance with the needs and characteristics of early childhood in Indragiri Hulu Regency. Although there is previous research on the development of electronic comics, most of them are carried out in different regions or contexts. Therefore, it is necessary to conduct research that specifically explores the design and development of electronic comics that suit the needs, preferences, and characteristics of children in Indragiri Hulu Regency.

METHOD

This research is a type of research and development (Research and Development). Research and Development (R&D) is the initial stage and exploration stage by conducting research and development as well as testing on a product and service to find out how effective the product will be developed. Research & Development (R&D) development is often interpreted as a process or step to develop a new product or improve an existing product, while the research and development model of education (Research and Development) is carried out adopting the 4-D development model (Four-D). The Four-D research and development model was developed by Sivasailam Thiagarajan, Dorothy S. Semmel and Melvyn I. Semmel (1974) with the stages of research, namely, define, design, develop, and dissemination (Thiagarajan, 1974). Based on the trial to be carried out, the trial subjects must be adjusted to the needs of the research (Yudha, 2020). The subjects in this electronic comic media development research are as many as 10 children, consisting of children aged 4-5 years from Group B of Mulya Fajar Kindergarten,

Indragiri Hulu Regency. In development research, the quality of the instrument is based on the validation and reliability of the instrument as well as the quality of data collection related to the accuracy of the method used to collect data. The percentage distribution formula used by the researcher is to find out the percentage of children's achievement in each aspect in the ability to recognize clean and healthy living for children at Mulya Fajar Kindergarten, Indragiri Hulu Regency.

Tabel 1. Instrument Grille

| No. | Instrument | Purpose | Subject |
|-----|------------------------------------|--|--------------|
| 1 | Media Validation Questionnaire | Obtaining design advice and feasibility | Expert Media |
| 2 | Teacher Practicality Questionnaire | Obtain advice and assessment of the feasibility of the learning media used | Teacher |

Tabel 2. Criteria for Decision-Making Expert Judgment Results

| Kriteria | Tingkat Validitas | Keterangan |
|----------------|-------------------|-------------------------------------|
| 81 -100 | Very High | Can be used without revision |
| 61 - 80 | High | Can be used with minor revisions |
| 41 - 60 | Considerable | Can be used with multiple revisions |
| 21 - 40 | inferior | Numerous revisions and revalidation |
| 0 - 20 | Very Low | Unusable and revalidation |

Tabel 3. Product Feasibility Achievement Rate

| Tingkat Pencapaian | Kualifikasi |
|--------------------|---------------|
| 90% - 100% | Excellent |
| 75%- 89% | Good |
| 65% - 74% | Considerable |
| 55% - 64% | Not Eligible |
| 0% - 54% | Very Unworthy |

FINDING AND DISCUSSION

The results of the research on the development of electronic comics for the introduction of clean and healthy living behaviors at Mulya Fajar Kindergarten, Indragiri Hulu Regency, include a description of data about Mulya Fajar Kindergarten teachers in Indragiri Hulu Regency who do not know how to also carry out electronic comics. Based on the four steps of Four-D research and development, in this study, in the implementation process, adaptations are made that refer to the approach model. The adaptation of this

development research generally consists of three stages of main activities, namely: (1) Product design stage (2); and product development.

Design

The design stage is designing a child-centered product. We took this opportunity to design an electronic comic learning media that fosters children's exposure to clean and healthy living behaviors. The following is an initial description of the prototype of the electronic comic learning media product:

Tabel 4. Electronic Comic Media Product Prototype

| No. | Description | Visual |
|-----|-----------------------------|--|
| 1 | Initial view of Media cover | <p>The cover illustration shows a central girl with a green shirt and orange suspenders carrying a shopping bag. To her left, a boy is washing his hands at a sink. To her right, a dog is sitting, and a doctor in a white coat is examining a child. The title 'AKU ANAK SEHAT' is written in large, colorful letters at the top.</p> |
| 2 | First start page | <p>The comic strip consists of four panels. The first panel shows children playing happily in a school playground. The second panel shows a teacher talking to the children about handwashing. The third panel shows a child refusing to wash hands. The fourth panel shows a child sitting on the ground, holding their stomach in pain.</p> <p>Panel 1: Anak-anak sedang bermain di taman sekolah dengan riang.</p> <p>Panel 2: Bu Guru: Halo, anak-anak! Saatnya mencuci tangan sebelum kita lanjut masuk kelas! Bu Guru: Zhaih klabour.</p> <p>Panel 3: Aku tidak mau mencuci tangan, Bu Guru. Aku ingin terus bermain! Mencuci tangan adalah cara terbaik untuk menjaga agar tubuh kita tetap sehat, nak.</p> <p>Panel 4: OUCH! Perut ku sakit sekali. Zhaih, Anak yang tidak mau mencuci tangan, dia memanggi perutnya yang sakit.</p> |

3 Second page start view



4 Home View of the third page



5 Home View of page four



6 Home View End Page



Develop Stage

The purpose of this development stage is to produce learning media that is revised according to the direction of experts and to find out the level of practicality of electronic comic learning media. This phase of development includes the following steps:

The purpose of this stage is to evaluate the product that has been developed. The validation was carried out by two expert lecturers in the field of early childhood education media. This validation is carried out by filling out the electronic comic learning media validation form. Through this process, we can obtain validated electronic comic learning media that aims to introduce the concept of clean and healthy living behavior in children.

The data from the validation of electronic comic learning media from expert validators is presented in the table of the results of the processing of learning media validation data:

Tabel 5. Validation Test Results by Media Experts

| No | Aspect | Indicator | Assessment Criteria | V 1 | V 2 | Mean | % | Category |
|----|-------------------|---|---|-----|-----|------|------|--------------|
| 1 | Media eligibility | Efficiency of electronic comic learning media | Easy-to-use electronic comic learning media | 4 | 3 | 3,5 | 87,5 | Highly Worth |
| | | | Electronic comic learning media is made in the right way | 4 | 4 | 4 | 100 | Highly Worth |
| | | Accuracy of electronic comic learning media | Electronic comic learning media is in accordance with the level of development of children aged 4-5 years | 4 | 4 | 4 | 100 | Highly Worth |
| | | | The use of language in electronic comic learning media is easy for children | 4 | 3 | 3,5 | 87,5 | Highly Worth |
| | | Aesthetic | The design of electronic comic learning media is attractive to children | 3 | 4 | 3,5 | 87,5 | Highly Worth |
| | | | The color combination used in the electronic comic learning media must be | 4 | 4 | 4 | 100 | Highly Worth |

| | | | | | | | | |
|------------------|-------------|----------------------|---|--------|--------|--------|------|--------------|
| | | | The use of images in electronic comic learning media must be clear and attractive to children | 4 | 4 | 4 | 100 | Highly Worth |
| 2 | Eligibility | Material Suitability | The introduction of clean and healthy living behavior material must be in accordance with the stages of child development | 3 | 4 | 3,5 | 87,5 | Highly Worth |
| | | Material Accuracy | Accuracy of the concept of introducing clean and healthy living behaviors for | 4 | 3 | 3,5 | 87,5 | Highly Worth |
| | | | The accuracy of the image and color on the medium must be appropriate | 4 | 3 | 3,5 | 87,5 | Highly Worth |
| | | Materiality | Images and vocabulary are easily recognizable in everyday life | 3 | 4 | 3,5 | 87,5 | Highly Worth |
| | | Encourage Curiosity | Encourage curiosity in children | 4 | 4 | 4 | 100 | Highly Worth |
| Total Amount | | | | 45 | 44 | 44.5 | | |
| Total Presentase | | | | 93.7 | 91.6 | 92.71 | | |
| Category | | | | Highly | Highly | Highly | | Worth |

The information presented in the table illustrates the results of the validation of electronic comic learning media on the cultivation of clean and healthy living behaviors in early childhood. The results show a high level of validity, with an average percentage of 92.70%, especially in the category of very valid for the media suitability aspect of 93.75%, and for the content feasibility aspect of 91.66%.

Based on the validation results presented in the table above, there are several suggestions or inputs that may be given by the two expert validators for this electronic comic learning medium:

1. Validator 2 gives a score of 3 for the media ease of use criterion, while Validator 1 gives a score of 4. This shows there is room for improvement in terms of ease of use. Tip: Improve the navigation and user interface to make it more intuitive and easy for kids to use.
2. For the criteria of ease of language understanding, Validator 2 gives a score of 3 while Validator 1 gives a 4. Suggestion: Further simplify the language used to better suit the level of comprehension of children aged 4-5 years.
3. Validator 1 gives a score of 3 for design appeal, while Validator 2 gives a 4. Tip: Improve the visual aspects of the electronic comic to make it more appealing to children, perhaps by adding more interactive elements or simple animations.
4. Validator 1 gives a score of 3 for the suitability of the material to the child's developmental stage. Tip: Review the material to make sure it is fully appropriate for the cognitive abilities of the 4-5 year old.
5. Validator 2 gave a score of 3 for the accuracy of the concept of recognizing clean and healthy living behaviors. Tip: Double-check the content to make sure all information presented is accurate and in accordance with the latest health guidelines for children.
6. Validator 1 gives a score of 3 for easy recognition of images and vocabulary in daily life. Tip: Update some pictures or vocabulary to be more relevant to children's daily experiences today.
7. Validator 1 and Validator 2 suggest adding a minimum of 10 pages

The results of the feasibility assessment based on the teacher's response at the stage of product practicality as a learning medium were obtained through a teacher response questionnaire filled out by two educators at Mulya Fajar Kindergarten, Indragiri Hulu Regency.

Tabel 6. Product Practicality Feasibility Test Results

| Aspect | Indicator | Assessment Criteria | Teacher | | Me an | % | Category |
|-------------------------------|---------------------------------------|---|---------|---|----------|------|----------------|
| | | | 1 | 2 | | | |
| Aspects of learning materials | Material suitability | Electronic comic learning media contains material to increase the introduction of clean and healthy living behaviors in children | 4 | 4 | 4 | 100 | Practical |
| | | The electronic comic learning media developed has images and language vocabulary that are easy for children to understand | 4 | 3 | 3,5 | 87,5 | Very Practical |
| | Actuality | Electronic comic learning media makes it easier for teachers to introduce clean and healthy living behavior materials to children | 3 | 4 | 3,5 | 87,5 | Very Practical |
| | | Electronic comic learning media is educational learning media | 4 | 4 | 4 | 100 | Very Practical |
| Media feasibility | Completeness and quality of materials | Electronic comic learning media is easy to use and suitable for children | 3 | 4 | 3,5 | 87,5 | Very Practical |
| | | Electronic comic learning media can be used repeatedly | 4 | 3 | 3,5 | 87,5 | Very Practical |

| | | | | | | |
|-------------------------|---|------|------|-----|------|----------------|
| Ease of understanding | The development of electronic comic learning media facilitates children in recognizing clean and healthy behaviors | 4 | 4 | 4 | 100 | Very Practical |
| | The developed electronic comic learning media contains material that can enhance the awareness of clean and healthy living behavior in children | 4 | 4 | 4 | 100 | Very Practical |
| Clarity | Electronic comics in educational media contain images that are easily recognizable by children | 4 | 4 | 4 | 100 | Very Practical |
| | The vocabulary used is still basic, namely everyday vocabulary | 4 | 3 | 3,5 | 87,5 | Very Practical |
| | Interactive audio in media can be clearly heard by children | 4 | 3 | 3,5 | 87,5 | Very Practical |
| Provide feedback | Electronic comic learning media can develop children's communication | 4 | 4 | 4 | 100 | Very Practical |
| | The use of electronic comic media can motivate children in learning about clean and healthy behavior | 4 | 4 | 4 | 100 | Very Practical |
| Total amount | | 54 | 52 | 53 | | |
| Total Persentase | | 96,4 | 92,8 | | | Very Practical |

The table above displays the results of practitioners showing positive reception from teachers towards electronic comic learning media. They demonstrate very practical results with an average material suitability percentage of 964% and media suitability of 9285% in the highly practical category. The research findings indicate that the use of electronic comic learning media is practical for introducing clean and healthy living behaviors to young children; it can serve as a resource for this purpose without hesitation based on these results.

Introduction to clean and healthy behavior for children through electronic comics has been proven to be highly valid and practical based on validation and practical testing results. Therefore, it can be used as a learning resource for introducing clean and healthy behavior to children. Using electronic comics as a medium will make it more engaging for children and facilitate their learning of clean and healthy habits.

The electronic comic learning media product developed using the Canva application aims to introduce clean and healthy living behaviors to children. The process involves creating engaging educational materials that capture children's interest, making it easier for them to learn about clean and healthy living. Therefore, this media can also be easily accessed on smartphones, allowing children to learn wherever and whenever they are.

Based on the information conveyed in the dialogue, it appears that the e-comic learning media created with the purpose of introducing good and healthy behavior to children aged 4-5 years has reached a very reasonable and appropriate stage. Developing electronic comic learning media to introduce clean and healthy living habits to children of this age is in accordance with their nature. New and interesting things are what attract children, so using this electronic comic learning media will pique their interest in the learning process.

CONCLUSION

The validation findings of electronic comic learning media for instilling clean and healthy behaviors in children at K Mulya Fajar, Indragiri Hulu Regency, resulted in an overall percentage of 9270%, which falls into the category of highly valid based on media suitability. Specifically, the score for media suitability was 9375%, and the content suitability aspect was also deemed highly valid at 9270%. Field practitioners' testing of the same electronic comic learning media for the same purpose and location reported highly practical results with an effectiveness rate of 964%, categorizing it as 'very practical'. Additionally, the media's suitability received a score of 9285%, also considered highly practical. The results of this research will have implications for early childhood education media development institutions. Electronic comic learning media is also used to introduce clean and healthy behaviors to children.

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