DEVELOPMENT OF DIGITAL-BASED COVID-19 MITIGATION MEDIA (MISIMICOTIN) FOR ELEMENTARY SCHOOL

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Abstract: The objectives of the research are (1) the expansion of digital-based COVID-19 mitigation media literacy (Misimicotin) (2) The suitability of digital-based COVID-19 mitigation literacy media. The research method used for research is a combination of quantitative and qualitative (mixed methods) with research design and development (R & D). Based on the research design that has been designed, the stages of R & D research in this study are knowing the potential and problems, data collection, product design, design validation, design revision, and testing. Digital-based COVID-19 mitigation media literacy (Misimicotin) was created using Microsoft PowerPoint software which is then converted into an android application using Inspiring Suite 9 and Website 2 APK Builder. Based on the results of 3 expert validators, it was found that the media was quite feasible with an average score of 3.5, while the user response involving 30 elementary school-age respondents found that the average score of user responses was 89% agree and strongly agree so that user responses to learning media are at very good category.

Keyword: Covid 19 Literacy Media, Self-awareness, Interactive Media
INTRODUCTION

Referring to Indonesia's COVID-19 cluster data (Peta Sebaran COVID-19, 2020), confirmed cases as of July 21, 2021, are 2,983,830 cases. Among the confirmed cases there are child victims. According to the General Chairperson of the Indonesian Pediatrician Association (IDAI), Dr. Aman Bhakti Pulungan, SpA(K), FAAP, the number of coronavirus cases in children is 12.5%. It means that 1 in 8 confirmed cases are children (Dwianto, 2021). Meanwhile, cases aged 6-18 years were 9.9% (Peta Sebaran COVID-19, 2020).

Many factors cause children to be vulnerable to contracting the COVID-19 virus. One of them is the lack of knowledge and understanding of the COVID-19 virus and how to prevent it. Lack of understanding in children is thought to be due to lack of education from schools and parents. So far, the media used is only through social media, print, and electronic. Many of the languages used are not understood by children because they use medical language. Therefore, effective and appropriate literacy media is needed to provide education to children with language that is easier to understand as well as interactive and interesting media so that children feel happy to know more about COVID-19.

To support the government's steps in educating children regarding COVID-19 mitigation, literacy media is needed to convey information and education about the COVID-19 virus. One of the researchers' considerations in developing this media is because there are no child-friendly COVID-19 literacy media. The literacy media available in the field still use language that is too complicated and not interactive to be understood by elementary school-age children. The media developed must prioritize practical, interactive, and fun concepts so that knowledge about COVID-19 can be conveyed and absorbed properly by children. Digital-based COVID-19 mitigation literacy media can be a facilitator in the formation of children's self-awareness characters. Self-awareness or self-awareness is a necessary state to start the process of understanding others (Fluerentin, 2012). If the child has good self-awareness, he will be able to understand the situation of himself and others so that he will become a child who is sensitive to a situation in his environment.

Research on COVID-19 literacy media that has existed previously is only limited to exploring the provision of educational sites as learning resources for school residents (Hanik, 2020). Previously existing literacy media were still in the form of pocketbooks (Hendratno et al., 2021). The results of other studies also state that public education is only carried out through social media (Indra et al., 2017). Some of these studies use social media as a medium for education and literacy. Even if there is media literacy, the target is still aimed at ages above elementary school children.

Social media has many shortcomings including not being able to filter out hoaxes, fake or fake news. The Ministry of Communication and Information (Kominfo) released the findings of the Covid-19 hoax issue in as many as 1,606 cases as of May 24, 2021, and submissions for a takedown on the distribution of hoaxes on social media amounted to 3,475. The distribution of the submissions consists of Facebook, Twitter, Instagram, and YouTube. Of the 3,475 cases reported, 3,056 have been followed up by Kominfo. Meanwhile, 113 hoax cases related to Covid-19 have been carried out by law enforcement (Lestari, 2021). These media are media that can provide literacy about Covid-19, so it will be a problem if the media spreads hoax news and builds false knowledge about Covid-19. In addition, the information provided discussed more the spread of panic regarding the COVID-19 virus than
about how to mitigate COVID-19. The source is not clear and anyone can write down the information in it, information sources cannot be trusted or accounted for.

The current media focuses more on the number of COVID-19 patients and victims than on what the community must do, particularly for elementary school-aged children who are at risk of being exposed to the COVID-19 virus. Social media is even less appealing for primary school-aged children when seen through multimedia material because the graphics, animations, and language utilized are inappropriate for their age. Social media can also cause addiction in children (Mukhlason & Aljawiy, 2012).

Based on the problems and urgency that have been described, the objectives of this study are: (1) Develop digital-based COVID-19 mitigation literacy media (Misimicotin). (2) Knowing the eligibility of digital-based COVID-19 mitigation literacy media (Misimicotin).

LITERATURE REVIEW

COVID-19 Mitigation

Mitigation relates to the prevention or management of natural and non-natural disasters. Disaster literacy in students includes knowledge about how to deal with disasters following Law no. 24 of 2007 that there are four stages of dealing with disasters, namely the first stage of preparedness (preparedness planning, early warning), the second stage of emergency response (emergency assessment, operational planning, emergency assistance), the third post-emergency stage (recovery, rehabilitation, completion, rebuilding), the fourth stage of prevention and mitigation or taming can be carried out simultaneously with the active role of the community (Priyowidodo & Luik, 2013). However, in this study, researchers focused on mitigating non-natural disasters related to the COVID-19 virus. Based on this description, the COVID-19 mitigation literacy in this study aims to provide knowledge and understanding of COVID-19 information about how to prevent it and what to do when exposed to COVID-19.

COVID-19 Literacy Media

Media literacy is an educational medium that is used to convey information and provide an understanding of something. Valid news will help the public understand the pandemic conditions and provide information to the public to take appropriate steps in the Covid-19 pandemic conditions (Linzonia, 2021). Media literacy in this study is a medium in which it conveys information digitally about Covid-19 mitigation. However, this media does not only aim as a media that provides an understanding of Covid-19 but also aims to provide digital literacy, culture, and literacy. This is because when the individual has a high literacy level, he knows how to select all the meaning options and has more power and control to choose the most accurate one from several points of view (cognitive, emotional, aesthetic, and moral) (Sabrina, 2019).

Digital literacy is one of the competencies obtained through digital literacy, namely the competence of compiling knowledge. Evaluation of knowledge compilation is the ability to organize knowledge and build a collection of information obtained from various sources of information. This source of information will be evaluated according to the facts and opinions of an individual who reads it. As explained by Sugihartati in A’yuni explaining that digital literacy is associated with the process of incorporating various mass media and information technology into one technological device that makes it easier for owners to access various information and shows (A’yuni, 2015).

Several researchers from America, Europe, Australia, Asia, and Africa have studied digital literacy (A’yuni, 2015). In the journal, A’yuni explained that the Ministry of Communication and Informatics has released data that the use of digital media among children and
adolescents in Indonesia in the age range of 10-19 years, there are at least 30 million Indonesian children and adolescents who use the internet and use digital media as a source of information. Their preferred channel of communication. This data shows that the potential for children to access digital media is very high. However, media literacy that is not by the age level will create a knowledge gap for readers. Not only that, information that is not under reality (hoax) will worsen the condition and not convey important information that you want to give.

METHOD

The research method used is a combination of quantitative and qualitative research (mixed-methods) where the results of quantitative research will be strengthened by the results of qualitative research. The research design used is a research and development (R & D) design. Researchers limit the research steps to the stages of identifying potential and problems, data collection, product design, design validation, and usage trials.

This research was conducted in the Cirebon Regency area with the research subjects being 30 students of elementary school age in Cirebon Regency who were randomly selected. The instruments used are expert validation sheets and questionnaires to determine user responses to digital-based COVID-19 mitigation literacy media (Misimicotin). The data analysis technique using the feasibility analysis of the product developed was obtained from the average results of the experts (validators) in the validation sheet with the criteria listed in Table 1.

<table>
<thead>
<tr>
<th>The Eligibility Indicators</th>
<th>Category</th>
</tr>
</thead>
<tbody>
<tr>
<td>1,00 ≤ V &lt; 2,00</td>
<td>Not Eligible</td>
</tr>
<tr>
<td>2,00 ≤ V &lt; 2,80</td>
<td>Less eligible</td>
</tr>
<tr>
<td>2,80 ≤ V &lt; 3,60</td>
<td>Eligible enough</td>
</tr>
<tr>
<td>3,60 ≤ V ≤ 4,00</td>
<td>Eligible</td>
</tr>
</tbody>
</table>

The technique of analyzing user response data is to find out the user's response to digital-based COVID-19 mitigation literacy media (Misimicotin) which can then be used on a wide scale using the following percentage criteria.

Table 2. Criteria for Percentage of User Response Questionnaires

<table>
<thead>
<tr>
<th>User Response Indicator</th>
<th>Category</th>
</tr>
</thead>
<tbody>
<tr>
<td>86% - 100%</td>
<td>Very Good</td>
</tr>
<tr>
<td>70% - 85%</td>
<td>Good</td>
</tr>
<tr>
<td>56% - 69%</td>
<td>Good Enough</td>
</tr>
<tr>
<td>40% - 55%</td>
<td>Less</td>
</tr>
<tr>
<td>≤ 40%</td>
<td>Not Good</td>
</tr>
</tbody>
</table>

RESULTS AND DISCUSSION

Research Results

Based on the research design that has been designed, the stages of R & D research in this study are identification of potential and problems, data collection, product design, design validation, design revision, and usage trials. At the potential and problem identification stage, researchers collect various information about problems, potentials, lessons that have been implemented, problem analysis, and identification of learning needs that will be used as a reference in developing digital-based COVID-19 mitigation literacy media (Misimicotin). The results of collecting information found that: 1) The current media is only limited to social media, 2) The media that is targeted is still aimed at ages above elementary school children and the language level is quite high so it is difficult to understand and needs to be accompanied by adults, 3) Existing media reviews more information on the number of victims of COVID-19 compared to reviewing how to mitigate what must be done by the community, especially for elementary school-aged children who are vulnerable to being exposed to the COVID-19 virus.

At the data collection stage, researchers began to collect information and literature on various things that support the development of learning media, namely software, hardware, and materials regarding COVID-19 mitigation
for children. The software and hardware in question are to determine what software and hardware are used when developing applications. Researchers used Microsoft PowerPoint software which was then converted into an android application using Ispring Suite 9 and Website 2 APK Builder, while the hardware used was a computer with Intel(R) Celeron(R) N4000 specifications with 4.00 GB RAM. To obtain accurate information, the researchers took from several sources including the https://promkes.kemkes.go.id, https://covid19.go.id/, and several pre-existing covid prevention management books.

At the product design stage, researchers designed and designed digital-based COVID-19 mitigation literacy media (Misimicotin). The media developed is very easy to be accessed by children. How to use it is quite simple. Children can access anytime and anywhere, with or without parental assistance, this is because the language used to convey information is very easy to understand. In addition, the images and videos displayed are also following the criteria for the age of the child. The feature contained in the media is the menu "what is covid-19?" which contains an explanation of covid-19. The menu "symptoms of covid-19" contains an explanation of the symptoms of the covid-19 virus. The "covid-19 mitigation" menu contains an explanation video regarding prevention and handling before, during, and after being exposed to the covid-19 virus. The following is an overview of the media that will be made in this study.

After the design is completed, the next stage of the product is validated by the material expert validator and media expert who opens 3 people using the validation sheet instrument. The validation instrument contains 5 aspects of the assessment with 28 statements. The 5 aspects consist of learning aspects, material aspects, language aspects, graphic aspects, and presentation aspects. The following are the results of the media and material expert validation test analysis.

<table>
<thead>
<tr>
<th>No.</th>
<th>Validator</th>
<th>Average Score</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Validator 1</td>
<td>3.5</td>
</tr>
<tr>
<td>2.</td>
<td>Validator 2</td>
<td>3.4</td>
</tr>
<tr>
<td>3.</td>
<td>Validator 3</td>
<td>3.6</td>
</tr>
<tr>
<td></td>
<td>Total Score</td>
<td>10.5</td>
</tr>
<tr>
<td></td>
<td>Average Score</td>
<td>3.5</td>
</tr>
</tbody>
</table>

Based on the results of the first expert validator, an average score of 3.5 was obtained, the second validator was 3.4 and the third validator was 3.6. The feasibility of the product score is in the range between 2.80 V < 3.60 which is included in the fairly decent category and can be used with a little revision.
At the design revision stage, revisions are made based on the assessment, notes, and suggestions from experts who have validated them. Improvements were made with minor additions and subtractions in some application designs. The last stage is a usage trial where a usage trial is carried out to determine the response of users (elementary school children) in the use of media, content, language use, and the eligibility of digital-based COVID-19 mitigation literacy media (Misimicotin) which has been developed to provide input/ improvements that will be tested at the trial stage of using small-scale products. The trial was conducted by distributing questionnaires to 30 children of primary school age in Cirebon Regency who were selected randomly. The results of the response obtained that the results of the user's response (elementary school children) an average of 89% answered agree and strongly agree so that the user's response to learning media is in the very good category.

Discussion
Development of digital-based COVID-19 mitigation literacy media (Misimicotin)

Based on the results of the research that has been described previously, it will discuss the development and determination as well as user responses regarding digital-based COVID-19 mitigation media literacy (Misimicotin). Mitigation relates to the prevention or management of natural and non-natural disasters. Disaster literacy in students includes knowledge about how to deal with disasters by Law no. 24 of 2007 in (Priyowidodo & Luik, 2013) that there are four stages of dealing with disasters, namely the first stage of preparedness (preparedness planning, early warning), the second stage of emergency (emergency assessment, operational plans, emergency assistance), the third stage post-emergency (recovery, rehabilitation, completion, rebuilding), the fourth stage of prevention and mitigation or taming can be carried out simultaneously with the role of the community. However, in this study, researchers focused on mitigating non-natural disasters related to the COVID-19 virus. Based on this description, the COVID-19 mitigation literacy in this study aims to provide knowledge and understanding of COVID-19 information about how to prevent it and what to do when exposed to COVID-19.

Digital-based COVID-19 mitigation literacy media (Misimicotin) was created using Microsoft Power Point software which was then converted into an android application using Ispring Suite 9 and Website 2 APK Builder. The initial display design is designed to be attractive and colorful according to the needs of elementary school students. In addition, the media is also designed by taking into account the principles and characteristics of elementary school students (Dewi & Haryanto, 2019). The media developed uses Indonesian which is easily understood by elementary school age and uses educative language. This is because previous research is limited to exploring the provision of educational sites as a source of learning for school residents (Hanik, 2020). The results of other studies also state that public education has only been carried out only through social media (Indra et al., 2017). Furthermore, studies have shown that the public knowledge only come from printed and electronic media (Rochmah & Labudasari, 2020).

The advantage of the developed media is that the media is developed with more updated technology so that learning media using application technology can foster interest in learning in students, to increase the competence of students in understanding the material presented. (Yuwita et al., 2019). The media becomes more interactive so that it will cause interaction between the media and users in this case are elementary school age children. This media was developed by producing new features in which there is...
multimedia content such as visual graphics, audio, video, and moving animations that can be utilized by elementary school-aged children, especially in COVID-19 mitigation education. Submission and presentation of information regarding COVID-19 mitigation in the form of interactive multimedia is certainly more flexible, easy, repeatable, interesting, more colorful and not monotonous. Interactive multimedia can be one of the renewals of student learning to be able to obtain information, provide new innovations for students and make students learn directly with technology (Rahmah & Susilo, 2021).

This technology was developed with an interactive and fun concept for elementary school-age children. Based on research conducted by Hermawanti, Microsoft PowerPoint technology has had a positive effect on student motivation in student learning (Hermawanti, 2019). Microsoft PowerPoint can also be used to create various animated content such as animated cartoons, advertisements, games, and other interactive content for publication. Android-based educational media has also proven to be effectively used to increase students' knowledge (Fitriyanto, 2019). Students are also more enthusiastic and motivated when using Android-based learning media for students tend to be more happy and enthusiastic (Efendi & Pambudi, Bayu; Ngazizah, 2018) (Adam et al., 2014). Furthermore, the results of other studies show that android applications have a positive effect on motivation, creativity, student attitudes, and achievement (Ahmad & Gestwicki, 2013).

The media also provide benefits including the media can improve digital literacy, literacy, and cultural literacy. The media also plays a role to improve the quality of children's learning outcomes (Gunawan & Paluti, 2017). As Frydenberg & And One stated in (Susilowati & Suyatno, 2021) that in the 21st century, children must have critical thinking skills, mastery of technology, and media, digital, and information literacy. Children can access information digitally in which there is a material text about the COVID-19 virus so that they can indirectly improve reading skills. The video tutorial content on the prevention of COVID-19 that is presented can form a culture or healthy living habits so that they can build self-awareness characters in children.

There are three main menus designed in the media including "what is covid?" which contains an explanation of the COVID-19 virus. The "COVID-19 symptoms" menu contains an explanation of the symptoms that appear in children when contracting the COVID-19 virus." The "COVID-19 mitigation" menu contains an explanation of how to prevent the COVID-19 virus by implementing the 3 M's, namely washing hands, wearing masks, and staying away from crowds.

**Eligibility of digital-based COVID-19 mitigation literacy media (Misimicotin)**

Flewitt in (Setiyaningsih & Syamsudin, 2019) children's readiness to achieve literacy development requires various kinds of supporting media Sebelum media dapat digunakan dan Before the media can be used and implemented to achieve its objectives, the media is required to be tested for eligibility. Based on the results of 3 expert validators, data obtained that the media is eligible enough with an average score of 3.5. The validator's assessment was obtained based on the results of the material expert and media expert validation questionnaire. The indicators assessed in the questionnaire consist of learning aspects, content/material aspects, language aspects, graphic aspects, and media presentation aspects. Validator 1 commented that the media was quite interactive, creative, and interesting for elementary school students. Validator 2 commented that the menu displayed was quite interesting and needed to add an “about/about application” menu page.
Validator 3 commented that the screen media was tested and the language used was appropriate for elementary school age, only that there were a few typos in the content, so some improvements needed to be made.

The results also support that appropriate interactive multimedia can improve the digital literacy of elementary school students (Rahmah & Susilo, 2021). With a proper product, it is hoped that it can increase knowledge, understanding of COVID-19 mitigation in elementary school-age children and indirectly shape the character of self-awareness or awareness and concern for oneself and the environment. And it can be used anywhere and anytime, as the characteristics of the Flexible Learning system during the pandemic (Huang dalam Abdul Latip, 2020).

**User response to digital-based COVID-19 (Misimicotin) mitigation literacy media**

The user's response to the digital-based Covid-19 mitigation literacy media (Misimicotin) is known through small-scale usage trials. A small-scale trial was conducted on 30 children of primary school age who were randomly selected in the Cirebon Regency. The indicators assessed are the quality of media use, media display, material content, language use, and the flexibility of the digital-based COVID-19 mitigation literacy media (Misimicotin) developed. The instrument used is a test questionnaire on the use of media.

Based on the results of the questionnaire about the assessment of the quality indicators of media use, media display, material content, language use, and media flexibility, it was found that the average user response (elementary school children) was 89% answered agree and strongly agree so that the user response to learning media is in the very good category. This is under the statement that interactive multimedia can make students feel happy and active (Dewi & Haryanto, 2019). Based on the results of small-scale trials, the media can then be tested on a large-scale.

The results of this study are also in line with media development research conducted by that the use of multimedia-based learning media received a positive response from students with an average of 82.66% (Marisda et al., 2020). Other research also shows that computer/digital-based learning media can improve students' understanding. The results of student responses obtained are 89.78%, which means that the media is classified as very practical (Ramadhani & Andre, 2019).

**CONCLUSION**

COVID-19 literacy media (Misimicotin) was developed based on a research procedure with 6 stages, namely potential and problem analysis, data collection, product design, design validation, design revision, and small-scale usage trials. Based on the results of the development, the media created displays 3 main menus, namely "what is COVID-19?" which contains information about COVID-19. The "COVID-19 symptoms" menu contains an explanation of the symptoms when contracting the COVID-19 virus. The "COVID-19 mitigation" menu contains the prevention of contracting the COVID-19 virus by implementing the 3 M.

The results of the eligibility of the media involving 3 expert validators found that the media was categorized as eligible enough to use with an average score of 3.5, while the user response involving 30 respondents of elementary school-age children found that the average score of the user response was 89% answered agree and strongly agree so that the response users of learning media are in the very good category.

This research is limited to small-scale field trials with the hope that future researchers can develop media to make it
more perfect. In addition, this study was only tested on a small scale with 30 respondents, so it needs to be further investigated to the stage of a large scale trial with a wider sample. In addition, further researchers can also examine in terms of the influence and effectiveness of the developed media.

REFERENCES


