Development of Comic Media for PJOK Subject on "The Dangers of Smoking at School Age" for Grade V Student’s at SDN 29 Cakranegara

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Abstract: This research aims to develop comic-based media on the topic of Physical Education, Sports, and Health (PJOK) on the topic of the dangers of smoking for fifth-grade student’s at SDN 29 Cakranegara. The research method used is research and development (R&D) with the ADDIE model approach, which includes analysis, design, development, implementation, and evaluation. This study involves all fifth-grade student’s at SDN 29 Cakranegara, consisting of 25 student’s and 1 teacher. The result of this research is a PJOK comic media that contains material about the dangers of smoking for school-age children. This comic is comprehensively structured with a title, usage instructions, main material, and exercise questions. Based on validation by media experts, this comic obtained an average feasibility percentage of 82.22%, and subject matter expert, it received 89.3%. Additionally, the results of small and large-scale trials, involving responses from teachers and student’s, indicate that this comic media falls into the very feasible category. This PJOK comic media can be used as a learning tool for the dangers of smoking, attracting student’s interest in learning, increasing learning motivation, and enhancing student’s knowledge and understanding of the dangers of smoking.

Keywords: Development; Media; Comics; Smoking

Introduction

The issue of smoking remains an unresolved problem in Indonesia. Despite the World Health Organization's (WHO) warnings that smoking is one of the leading causes of preventable death worldwide, the number of smokers continues to rise (Sari et al., 2019). According to the Ministry of Health's Data and Information Center, Indonesia has the fourth-highest smoking rate among ASEAN countries, with a prevalence of 49.6% in 2021. The Basic Health Research (Risksdas) 2018 survey revealed that 24.3% of individuals over the age of 10 smoke daily, while the proportion of 10-14-year-olds who smoke is 0.7% (Risksdas, 2018). The increasing trend of smoking initiation among 10-14-year-olds is a serious concern, especially with the increase from 9.5% to 17.5% (Rahman, 2022). Additionally, the high level of secondhand smoke (SHS) exposure among schoolchildren is also alarming, with 64.2% of surveyed children reporting exposure to secondhand smoke at home or elsewhere (Syaputra, 2022). The WHO estimates that the number of smokers in Indonesia will reach 90 million by 2025, and even more concerning, 45% of the population considers smoking a necessity (Hasanah & Hayati, 2022).

Smoking is no longer just an adult habit; it is becoming increasingly prevalent among adolescents and even children in Indonesia. Many elementary school-aged children (SD) start smoking between the
The consumption of cigarettes in Indonesia has reached alarming levels. Around 37% of Indonesia’s 70 million children, or about 25.9 million children, are smokers, making Indonesia the country with the highest number of child smokers in Asia (Ranos et al., 2021). Research also shows that children have started smoking between the ages of 5 and 9, meaning they are still in kindergarten or elementary school grades 3 or 4 (Setyawati, 2016). The high prevalence of child smoking in Indonesia highlights a critical gap in their understanding of the detrimental effects of smoking on their health. This lack of knowledge often leads them to experiment with smoking out of curiosity. Several studies have confirmed the low level of awareness among children regarding the dangers of smoking. For instance, a study by Fauziah et al. (2021) found that 97.3% of children aged 10-13 years had inadequate knowledge about the risks associated with smoking, and 52.7% of them were even unaware of the harmful effects of secondhand smoke.

The alarming prevalence of child smoking in Indonesia stems from a complex interplay of factors, including unfavorable environmental influences, parental smoking habits, and uncontrolled peer interactions. A survey conducted by the Indonesian Heart Foundation revealed that the majority of teenagers who initiate smoking fall within the 9-12 age range. The study further indicated that peer pressure, exposure to tobacco advertising, and a lack of awareness about the detrimental effects of smoking are the primary drivers of this behavior, leading children to unknowingly succumb to the harmful effects of tobacco on their bodies (Putri et al., 2020).

The impact of cigarettes on health can be felt by the lungs, especially in children who are still developing (Firmansyah et al., 2019). Many negative consequences can occur due to the habit of smoking, especially for school-age children. Behavioral changes can be observed in children who smoke, such as lack of concentration, learning difficulties, impaired understanding, decreased energy, anxiety disorders, and mild depression (Tulenan et al., 2020). This phenomenon causes widespread public concern, and public concern about the rise of novice smokers is increasing. The government intensively socializes the dangers of cigarettes at the school level, especially in elementary schools. The Ministry of Health made the Quitina application as a smoking cessation consultation service in the form of an automatic message that is present to reach more people who want to quit smoking, through social media accounts, but this application will work if the community is aware of the dangers of cigarettes (Mawan et al., 2020). This awareness needs to be built at the school level, especially elementary schools. Through the Independent curriculum, it reinforces the dangers of smoking in the PJOK teaching educational material X material "The Dangers of School-Age Smoking".

Regarding the learning of PJOK educational materials teaching X material "The Dangers of School-Age Smoking"; the learning needs to be designed so that the delivery is interesting and effective. Based on the results of structured interviews at SDN 29 Cakranegara, the delivery of educational materials for PJOK educational materials teaching X material "The Dangers of School-Age Smoking" still uses the lecture method. The kuraang lecture method is effective because student’s do not have many opportunities to develop the courage to express opinions that result in the absorption of knowledge is not optimal. This is due to an approach that is too one-way-centered, so that student’s have limitations in developing creativity. In addition, it is difficult to detect the extent of student’s overall understanding, and student’s tend to easily forget the material that has been delivered (Aditya, 2019). As student’s usually learn from what they see, they think of images in their minds to be able to increase the speed of learning through the use of visual displays (Marpaung, 2016). Comics as a medium will
become more interesting and not boring, this shows the effectiveness of comics in supporting learning activities (Augustin, 2023). Therefore, in this study, media is used as an attraction used in learning. This media is in the form of illustrated comic books that have validity and feasibility.

Comics as a medium will become more interesting and not boring, this shows the effectiveness of comics in supporting learning activities (Augustin, 2023). The previous description shows that comics are a form of visual communication and a structured storyline to facilitate the delivery of messages or information so that they are always remembered by the readers. At first, comics were only used as entertainment materials, but now with the development and advancement of technology and the emergence of various new forms of creativity, comics can be used as a mediator of educational information. Comics can be an effective learning tool because of their characteristics that can attract attention, especially through brightly colored cartoon images (Subroto, 2020). The role of comics in supporting learning is to create an interest in reading and develop reading habits, which is an advantage of the use of comic media in learning (Astuti et al., 2021).

The urgency of the smoking problem and based on the needs analysis that has been carried out at SDN 29 Cakranegara made the researcher want to conduct with the title "Development of PJOK Comic Media "The Dangers of School-Age Smoking" Class V at SDN 29 Cakranegara". The research will be conducted in grade V because range age of children who try smoking for the first time is 10-12 years old, which in the mapping of PJOK material, material related to the dangers of smoking is in grade V of elementary school. The resulting comic learning material products are expected to be useful in attracting student's attention and understanding of the subject matter, being able to solve problems and satisfy their curiosity. Especially knowledge about the dangers of school-age cigarettes. This educational material is an effort by researchers to create quality educational materials in schools and encourage student’s openness to reading.

Method

This research uses Research and Development (R&D), a research methodology used to create certain products and evaluate their effectiveness (Sugiyono, 2016). Development is not limited to the creation of new products, but can also include improving existing products to increase their practicality, efficiency, and usability. The ADDIE (Analysis, Design, Development, Implementation and Evaluation) model was used as the research framework in this study. As the name suggests, this model consists of five different phases, namely analysis. Model ADDIE (Analysis, Design, Development, Implementation dan Evaluation). As the name suggests, this model consists of five different phases, namely analysis, planning, development, implementation and evaluation which are illustrated below.

![ADDIE Models](image)

**Figure 1. ADDIE Models**

In research and development using the ADDIE model, there are two types of evaluation, namely formative and summative evaluation. However, in this study, the evaluation carried out is only a formative evaluation because the focus of the research is on product development to improve the quality of the products being developed or produced. The ADDIE model was chosen because of its ability to demonstrate structured and systematic learning designs. This research was carried out at SDN 29 Cakranegara, while the object of the research is PJOK comic media with smoking hazard material.

Data collection techniques are carried out using observation sheets, interviews, questionnaires or questionnaires, and documentation. The study uses a structured interview approach, in which the researcher asks participants a series of questions with predetermined or limited response options. Questionnaires or questionnaires are used to obtain assessments from experts as well as student and teacher responses to the media developed. The documents used in this study are in the form of images and The photo taken during the research was when the researcher used PJOK comic media in class V of SDN 29
Cakranegara

Qualitative data analysis techniques are used to describe the results of observations, interviews, and revisions from media experts and material experts. Meanwhile, quantitative data analysis is used to process data in the form of scores from questionnaires obtained from the responses of media experts, material experts, teachers, and student’s. The questionnaire was compiled using a Likert scale with a range of 1-4, where 4 means very good, 3 is good, 2 is not good, and 1 is very bad (Sugiyono, 2018). The Questionnaire filled out by media experts and experts material to assess the feasibility of PJOK comic media in small and large group trials. Teacher and student response questionnaires were used to assess whether comic media was suitable for use in learning PJOK smoking hazard material. The assessment is carried out by putting a check mark on the scale column that corresponds to the statement in the questionnaire. The value is then converted using a predetermined calculation formula.

\[ P = \frac{\sum X}{\sum X_i} \times 100\% \]

(Source: Sugiyono, 2018)

Information:
\[ P = \text{Eligibility Percentage} \]
\[ \sum X = \text{Number of Scores Obtained} \]
\[ \sum X_i = \text{Highest Number of Scores} \]

Media validation can be said to be satisfactory if it meets the scoring criteria for all elements in the assessment questionnaire assessed by media and material experts, as well as through feedback from teachers and student’s. Assessment scores that meet the eligibility requirements for comic media can be categorized as feasible or valid if they reach the good or excellent category as listed in table 1 and table 2.

Table 1. Product Validation Rate Qualification Based on Percentage

<table>
<thead>
<tr>
<th>Achievement Level (Score)</th>
<th>Integration</th>
</tr>
</thead>
<tbody>
<tr>
<td>81% - 100%</td>
<td>Highly Valid</td>
</tr>
<tr>
<td>61% - 80%</td>
<td>Valid</td>
</tr>
<tr>
<td>41% - 60%</td>
<td>Quite Valid</td>
</tr>
</tbody>
</table>

Table 2. Qualification of Product Practicality Level Based on Percentage

<table>
<thead>
<tr>
<th>Achievement Level (Score)</th>
<th>Integration</th>
</tr>
</thead>
<tbody>
<tr>
<td>81% - 100%</td>
<td>Excellent</td>
</tr>
<tr>
<td>61% - 80%</td>
<td>Good</td>
</tr>
<tr>
<td>41% - 60%</td>
<td>Pretty Good</td>
</tr>
<tr>
<td>0% - 20%</td>
<td>Not Good</td>
</tr>
</tbody>
</table>

Result and Discussion

The results of this research product are in the form of PJOK comic media. There are 5 stages that must be passed in order to create a final product in the form of comic-based Physical Education, Sports and Health (PJOK) media. The results obtained from each stage of research and development can be described in the following sub-sub-sections:

Analyze

1. Curriculum Analysis

This analysis is used to see the scope of material contained in PJOK lessons in class V in order to find out the learning outcomes and learning objectives that must be achieved by student’s. Smoking hazard material is one of the mandatory materials in PJOK lessons to be studied by phase C student’s on the element of Utilization of movement according to the independent curriculum in accordance with the learning contained in the class V package book. The following are the learning outcomes and learning objectives:

Table 3. Learning Outcomes and Learning Objectives

<table>
<thead>
<tr>
<th>Learning Outcomes (CP)</th>
<th>Learning Objectives (TP)</th>
</tr>
</thead>
<tbody>
<tr>
<td>In Phase C, student’s have the knowledge to develop healthy living behavior patterns in the form of hazards smoking, drinking, and abuse narcotics,</td>
<td>Explain the dangers of smoking (the meaning, of cigarettes, the content of cigarettes, and the consequences smoking), to</td>
</tr>
</tbody>
</table>
additives (NARCOTICS) and other dangerous drugs, as well as having the knowledge and ability to avoid injuries and various risks in physical activity and sports.

2. Analyze Relevant Materials

Based on the results of the material analysis carried out by analyzing the learning resources used in learning activities, namely the Teacher Package Book and the 5th grade Student Package Book of the Independent Curriculum Elementary School, information was obtained that the material used for PJOK learning activities in the smoking hazard sub-material by the title of this study was raised material on "The Dangers of School-Age Smoking". The content of the material is in Lesson X(10) material on the Dangers of Cigarettes, Liquor and Drugs with the sub-material "The Dangers of School-Age Smoking". Of course, the material provided is adjusted to the student's experience in daily life so that student's can more easily understand the content of the reading in comic-based teaching materials. From the material in the comic, student's are able to understand the dangers of cigarettes from the results of answering evaluation questions contained in the comic The Dangers of Smoking.

Design

After the analysis is carried out, the next stage is product design. At this stage, the focus is given on two main activities, namely the selection of materials and the design of products that suit the needs and problems faced by student's. Some of the activities carried out in the design stage are as follows:

1. Material Selection

The results of this research product are in the form of PJOK comic media. There are 5 stages that must be passed in order to create a final product in the form of comic-based Physical Education, Sports and Health (PJOK) media. In this study, the selected material has been determined from the beginning by taking the content of PJOK lessons from the Teacher's Book and Student Book of Grade V Elementary School Independent Curriculum, Lesson X about the Dangers of Cigarettes, Liquor, and Drugs with the sub-material "The Dangers of Smoking for Body Health".

In the development of media products, this material will be expanded to improve student's knowledge, especially through illustrations or images that help understanding. The developed comic will contain demonstration of the practice of smoking hazards so that student's can better understand the impact of smoking or exposure to cigarette smoke.

2. Product design

At the product design stage, researchers determine and create stories for comic media. The first stage in making this comic is to produce story ideas or storylines that will be used. This comic story is based on the material on the Dangers of School-Age Smoking contained in the Teacher's Book and Student's Book. The material is packaged and developed into a story with a clear plot to read. This process involves several steps, such as determining the theme of the comic, the characters, The big outline of the story idea, and the setting of the story. Overall, this process is called storyline creation.

The comic was developed with the theme of the Dangers of School-Age Smoking, with 6 characters/characters communicating about the dangers of smoking and cigarette smoke demonstrated by a teacher in practice. The selection of these 6 characters aims to make readers remember them easily and these comic characters are easy to recognize. The character of Mrs. Sarah who works as a teacher was chosen to give the impression that the information conveyed in the story is valid or reliable, while the character of the student's. It is used so that readers are interested in reading because it is in accordance with the age range of the reader.

The main setting of the story is in a school, so that the reader can feel the atmosphere that student's usually experience in their daily lives. This also helps the storyline look closer to real life and the lessons conveyed can be applied in everyday life.

Development

The development of this comic-based media is based on the analysis of the problems and needs of student's, as well as the designs that have been made in the previous stage. Some of the activities carried out in the development stage include:
1) Creating a Comic Story Script

Figure 4. Comic Script

2) Create a Comic Structure Design

After the script is completed, the next step is to arrange the structure of the comic to be created. Given that this comic is an educational comic and will be presented as a media, the comic will be designed with an appropriate media structure. Creating Comic Characters

The first step in designing a comic is to create a comic character, because the character will be the main guide in making a comic. The characters must be completed first so that their style, shape, color, and characteristics remain consistent from the beginning to the end of the story. Characters in comics are given facial expressions that match the dialogue given. Red and white colors are used to match the characteristics of the student’s. All character creation processes are done digitally using Corel Draw and Canva. Here are some of the stages in the creation of comic characters in this study:

- Sketch of Comic Characters
- Line Art
- Coloring of Comic Characters

Figure 5. Sketch of Comic Characters

Figure 6. Line Art

Figure 7. Coloring of Comic Characters

3) Storyboard Creation

- Storyboard Creation

Figure 9. Storyboard Creation

4) Comic Sketching

- Comic Sketching

Figure 10. Comic Sketching

5) Line Art

- Line Art Comic
Product validation was carried out to test comic-based media by conducting an assessment of the feasibility of the product developed which was reviewed from the perspective of media and materials, media validation was carried out by media experts, namely Asri Fauzi, M.Pd. and material validation was carried out by Gita Prima Putra, M.Pd. The assessment was carried out by showing products in the form of comic-based Physical Education, Sports and Health (PJOK) media on smoking hazard materials. Product validation is carried out by filling out a questionnaire assessment by media experts and material experts using an assessment scale of 1-4.

Table 4. Media and Material Validation Test Results

<table>
<thead>
<tr>
<th>No.</th>
<th>Expert</th>
<th>Percentase</th>
<th>Criterion</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Media</td>
<td>82.22%</td>
<td>Very Worthy</td>
</tr>
<tr>
<td>2.</td>
<td>Material</td>
<td>89.3%</td>
<td>Very Worthy</td>
</tr>
</tbody>
</table>

Based on table 4, it can be seen from the results of the percentage of media and material experts, Product Validation by media experts obtained a score of 82.22% with very feasible criteria and validation by material experts obtained a score of 89.3% with very feasible criteria and can be continued for the media in teaching at SDN 29 Cakranegara in the next stage with revisions.

Product revision

Product revisions are carried out on the improvement of the media that has been developed, in the previous media still used language that was not yet standard, the order of reading comics was still not implemented, clarifying the background, adding the order for reading comics, and adding instructions for using comic media. The following are the results of the revision of the PJOK comic media material on the dangers of smoking at school age.

Table 5. Product revision

<table>
<thead>
<tr>
<th>Before Revision</th>
<th>After Revision</th>
</tr>
</thead>
<tbody>
<tr>
<td><img src="image1" alt="Before Revision" /></td>
<td><img src="image2" alt="After Revision" /></td>
</tr>
<tr>
<td><img src="image3" alt="Before Revision" /></td>
<td><img src="image4" alt="After Revision" /></td>
</tr>
<tr>
<td><img src="image5" alt="Before Revision" /></td>
<td><img src="image6" alt="After Revision" /></td>
</tr>
</tbody>
</table>

No Media Usage Instructions
Product Trial

The small group product trial and the large group product trial were carried out with a small group product trial of 8 student’s and a large group trial with 17 student’s and also teachers gave their responses to this comic media. The following are the results of the product trial of small groups, large groups, and teachers:

Table 6. Small Group Trial

<table>
<thead>
<tr>
<th>Respondents</th>
<th>Score obtained</th>
<th>Highest Score</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Student 1</td>
<td>37</td>
<td>40</td>
<td>95%</td>
</tr>
<tr>
<td>Student 2</td>
<td>39</td>
<td>40</td>
<td>87.5%</td>
</tr>
<tr>
<td>Student 3</td>
<td>38</td>
<td>40</td>
<td>95%</td>
</tr>
<tr>
<td>Student 4</td>
<td>30</td>
<td>40</td>
<td>95%</td>
</tr>
<tr>
<td>Student 5</td>
<td>39</td>
<td>40</td>
<td>80%</td>
</tr>
<tr>
<td>Student 6</td>
<td>38</td>
<td>40</td>
<td>80%</td>
</tr>
<tr>
<td>Student 7</td>
<td>38</td>
<td>40</td>
<td>87.5%</td>
</tr>
<tr>
<td>Student 8</td>
<td>38</td>
<td>40</td>
<td>82.5%</td>
</tr>
</tbody>
</table>

Number of scores obtained: 297
Maximum number of scores: 320
Overall Percentage: 92.81%
Category: Very Practical

Table 7. Large Group Trial

<table>
<thead>
<tr>
<th>Respondents</th>
<th>Score obtained</th>
<th>Highest Score</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Student 1</td>
<td>38</td>
<td>40</td>
<td>95%</td>
</tr>
<tr>
<td>Student 2</td>
<td>35</td>
<td>40</td>
<td>87.5%</td>
</tr>
<tr>
<td>Student 3</td>
<td>38</td>
<td>40</td>
<td>95%</td>
</tr>
<tr>
<td>Student 4</td>
<td>38</td>
<td>40</td>
<td>95%</td>
</tr>
<tr>
<td>Student 5</td>
<td>32</td>
<td>40</td>
<td>95%</td>
</tr>
<tr>
<td>Student 6</td>
<td>32</td>
<td>40</td>
<td>95%</td>
</tr>
<tr>
<td>Student 7</td>
<td>35</td>
<td>40</td>
<td>87.5%</td>
</tr>
<tr>
<td>Student 8</td>
<td>33</td>
<td>40</td>
<td>82.5%</td>
</tr>
<tr>
<td>Student 9</td>
<td>38</td>
<td>40</td>
<td>95%</td>
</tr>
<tr>
<td>Student 10</td>
<td>34</td>
<td>40</td>
<td>85%</td>
</tr>
<tr>
<td>Student 11</td>
<td>38</td>
<td>40</td>
<td>95%</td>
</tr>
<tr>
<td>Student 12</td>
<td>36</td>
<td>40</td>
<td>90%</td>
</tr>
<tr>
<td>Student 13</td>
<td>37</td>
<td>40</td>
<td>92.5%</td>
</tr>
<tr>
<td>Student 14</td>
<td>38</td>
<td>40</td>
<td>95%</td>
</tr>
<tr>
<td>Student 15</td>
<td>32</td>
<td>40</td>
<td>80%</td>
</tr>
<tr>
<td>Student 16</td>
<td>39</td>
<td>40</td>
<td>97.5%</td>
</tr>
<tr>
<td>Student 17</td>
<td>38</td>
<td>40</td>
<td>95%</td>
</tr>
</tbody>
</table>

Number of scores obtained: 611
Maximum number of scores: 680
Overall Percentage: 89.9%
Category: Very Practical

Based on the results of the percentages of table 7, it shows that the student’s response to comic-based media in the PJOK lesson on the dangers of smoking gets the category of "Very Practical" and without revision.

Table 8. Teacher’s Response

<table>
<thead>
<tr>
<th>Aspects</th>
<th>Score obtained</th>
<th>Highest Score</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Material</td>
<td>31</td>
<td>32</td>
<td>96.87%</td>
</tr>
<tr>
<td>Media</td>
<td>16</td>
<td>20</td>
<td>80%</td>
</tr>
</tbody>
</table>

Number of scores obtained: 47
Maximum number of scores: 52
Overall Percentage: 90.38%
Category: Very Practical

Based on the results of the percentages of table 6, it shows that the student’s response to comic-based media in PJOK lessons on the dangers of smoking gets the category of "Very Practical" and without revision. So that products that have been tested in small groups can be implemented to large groups.
Based on these results, it shows that the teacher's response to comic-based media in PJOK material lessons gets the category of "Very Practical".

The learning process carried out by PJOK teachers at SDN 29 Cakranegara for grade V on the dangers of smoking material only uses Teacher Books and Independent Curriculum Student Books available at the school, with a lecture delivery method. Based on the results of observations and interviews, it is known that teachers do not use any other media besides textbooks, causing student's to easily feel bored and less enthusiastic during learning activities. Many elementary school teachers are still unable to conduct effective learning sessions. Not only is the learning sequence (Ermiana, 2020) unsuitable, but the use of learning media is also inadequate. Using engaging media can significantly help increase student's interest and enthusiasm in learning.

Media development is crucial for learning activities in the classroom because well-developed media enable student's to more easily understand the material and become more active in learning (Magdalena et al., 2020). Media can assist teachers in the learning process and make student's more interested in participating in learning activities. Picture storybooks, for example, can attract attention because they are very popular with children (Muhaimin et al., 2023).

The lecture method is currently considered less effective as a learning method, especially if it is not accompanied by supporting media. This method is seen as ineffective and inefficient because it fails to arouse student's interest and motivation to learn (Aditya, 2019). Teachers also face difficulties in delivering material about the dangers of smoking due to a lack of innovation in creating media that can present the material in an interesting yet informative way. The results of the study show that several factors contribute to teachers' difficulties in developing learning media. These factors include time limitations, difficulties in using digital editor tools, age factors, high costs, lack of knowledge, and network constraints (Pratiwi & Nugraheni, 2022).

The results show that the use of learning media has a significant influence compared to not using it, with higher learning outcomes seen when teaching media is utilized in learning activities (Moto, 2019). Additionally, to take advantage of existing technological developments, improvements in the learning process are necessary. One way to achieve this is by presenting and developing learning media that help student's understand the material better. Teachers can use this media to motivate and encourage student's, making the learning process more meaningful (Fauzi et al., 2023).

The material presented through comic media can help student's understand the dangers of smoking due to the numerous pictures and visual illustrations. Moreover, the use of comic-based learning media is expected to increase student's interest and motivation in the learning process. As stated by Yosri et al. (2021), material delivered in the form of comics is able to attract and motivate student's to learn. The design stage involves creating comic-based media for student's to use in learning PJOK smoking hazard material. Comic-based media is developed by designing both the media content and media display using Corel Draw Portable X5.

At the stage the development stage, comic-based media validation is carried out to media experts and material experts to test the feasibility of the product developed before being implemented to student's at the next stage. The assessment from media experts as a whole obtained a percentage of validity achievement rate of 82.22% with a very valid category. Meanwhile, the assessment from the subject matter experts as a whole obtained a percentage of validity achievement rate of 89.3% with the category of very valid. From the results of the validation, the data obtained is in the form of quantitative and qualitative data. Based on the validation of media and material experts, quantitative assessment data obtained from assessments on the questionnaire sheets on a scale of 1 to 4 can be obtained, while qualitative data is obtained from criticism and suggestions given by validators to revise the media as well as the material developed. According to Muhammad et al., (2020), if a product is declared feasible, then the product can be used after being revised according to the advice of the validator. Therefore, before proceeding to the next stage, comic-based media should be revised according to the advice given by media experts and material experts. The following are revisions made in accordance with the advice of media validators and material experts.

Based on the results of the questionnaire, student responses indicate that the eligibility criteria in the practical aspect have been met, categorized as very practical. These responses show that student's interest and motivation in learning increase when
using comic-based media. This aligns with Yosri et al. (2021), who stated that material presented in the form of comics can attract and motivate student’s in learning. Rini (2009) also noted that student’s are more motivated when using comic media for learning. Additionally, Sudjana and Rifai, as cited in Putra (2022), stated that teaching materials in the form of comics can make the learning process more effective, increase student interest, and enhance student's appreciation of the material studied.

Teachers also provide responses to comic-based media through a teacher response questionnaire that has been prepared. From the questionnaire, it was obtained that the percentage of practicality of comic-based media as a whole was 90.38%, included in the category of "Very Practical" without the need for revision. Grade V teachers at SDN 29 Cakranegara are happy with the existence of this comic-based media because it can help both student’s and teachers in the learning process.

The practicality of a media is assessed based on the assessment of student’s and teachers as users of comic-based media that has been developed. As stated by Fitria et al. (2017), the practicality of a media is determined by the results of user assessments. Based on the results of student and teacher responses, this comic-based media meets the eligibility criteria in the practical aspect with a very practical category according to Arikunto's opinion in Yulinda et al. (2023). This level of practicality is shown by the comments of student’s and teachers on comic-based media. As stated by Fitria et al. (2017), the level of practicality of a media can be seen from the explanation of whether teachers or other parties consider that learning materials are easy to use by student’s and teachers. Therefore, it can be said that comic-based media is very feasible to use in schools for learning activities.

Conclusion

Based on the results of the research and discussion, it can be concluded that:
1. Validation of the PJOK comic media product on the hazards of smoking for grade V student’s of SDN 29 Cakranegara by material experts and media experts has obtained very valid criteria.
2. The response of teachers and student’s to the PJOK comic media is categorized as very practical.
3. Based on the results of the validation test and practicality test, the PJOK comic media on the hazards of smoking for grade V student’s of SDN 29 Cakranegara is deemed very feasible for use in teaching the PJOK smoking hazard material. The main conclusions of the study may be presented in a short Conclusions section, which may stand alone or form a subsection of a Discussion or Results and Discussion section.

References


Hengky, H. K., & Rusman, A. D. P. (2022). The Effect of Exposure to Cigarette Smoke at


