



DESIGN OF A PICTURE STORYBOOK ON HEALTHY SNACKS FOR ELEMENTARY SCHOOL STUDENTS AT SDN 74 BENGKULU CITY

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Abstract

Healthy food is food that contains sufficient and balanced nutrients, that is free from bacteria, viruses, parasites, and chemical pollution. Mistakes in choosing snacks often occur due to lack of knowledge of children and parents about healthy food, which can trigger various nutritional problems, such as diarrhea. In Bengkulu Province, digestive disorders such as diarrhea with complications are still one of the health problems that occur in various age groups, including school-age children. The age group of 5-14 years is classified as vulnerable to this problem, which is often triggered by the habit of consuming snacks that are less hygienic and do not meet nutritional standards. The purpose of this study was to determine the design of illustrated story media about education on healthy snack consumption for elementary school children. This research is a mixed-methods research with the type of Research Development, which is a research that combines qualitative research and quantitative research. Picture storybooks can be used as interactive educational media (conveying messages in two ways) and are not boring. Picture storybook media was designed using the ADDIE method. The results of the media needs analysis, that the media most favored by children are picture storybooks with characters from animated series that are widely known to children. The results of the media validation trial were 100% which was categorized as very feasible, the material validity test obtained the results of 81% categorized as very feasible, the media feasibility test showed that the picture storybook was 97.1% feasible for use by target children. This study contributes to providing an understanding of the importance of choosing healthy snacks for children to reduce various nutritional problems.

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INTRODUCTION

Snacking is a common habit among school-aged children, but many lack the awareness to distinguish between healthy and unhealthy options. Unhygienic and low-nutrient snacks can contribute to health issues such as diarrhea, malnutrition, and food poisoning. According to the Indonesian Ministry of Health and BPOM, over 99% of children consume snacks during school hours, often choosing foods with high fat, sugar, salt, or harmful additive.

In Bengkulu, diarrhea remains a leading issue among children aged 5–14. In 2023, reported cases in this

age group reached 3.7% in the province. A survey at SDN 74 Kota Bengkulu showed that many students preferred purchasing street food over bringing home-prepared meals, raising concerns over food hygiene and safety.

Health education through engaging media is essential to improve students' knowledge and attitudes about food. Picture storybooks, especially those using familiar animated characters, can serve as effective educational tools. Previous research, such as that by Pokhrel (2024), found that using illustrated storytelling media will motivate students to study harder and better understand the subject matter, including solving various problems. It will also build students' interest in learning, thus achieving a fun, effective, and efficient teaching and learning process.

This study seeks to design an illustrated storybook tailored to the dietary education needs of children at SDN 74 Kota Bengkulu. The goal is to provide a fun, visually engaging learning tool to promote healthier snack choices among school children.

MATERIALS AND METHODS

This study used a mixed-methods research design of the research and development (R&D) type, incorporating both qualitative and quantitative approaches. The ADDIE model (Analysis, Design, Development, Implementation, Evaluation) was adopted to guide the development process of the educational media.

The study was conducted at SDN 74 Kota Bengkulu. The target population consisted of schoolchildren aged 5–14 years. Data were collected through interviews with students and teachers, expert validation from media and content specialists, and trials with target audiences. The sample for the media trial included 30 students selected purposively.

Data collection instruments included structured interview guidelines, media validation checklists, and student feedback questionnaires. The media was evaluated for feasibility, clarity, attractiveness, and educational value.

Quantitative data were analyzed using descriptive statistics, including mean scores and percentage classifications. Media feasibility was categorized as follows: very feasible (81–100%), feasible (61–80%), fairly feasible (41–60%), and not feasible (<40%).

RESULTS AND DISCUSSION

Result

The following are the results of the development and testing of the picture storybook on healthy snacks for children at SDN 74 Kota Bengkulu.

Needs analysis stage

Based on interviews and observations, it was found that elementary school children preferred books with numerous illustrations, as these are easier to understand and less monotonous. They favored stories with cartoon school-age characters. The informants were able to mention the definition of healthy snacks, and all respondents agreed that choosing healthy snacks offers many benefits. These findings indicated that the target audience required a learning medium that was visually attractive, easy to comprehend, and contextually relevant.

Media Design Stage

The design of the illustrated storybook began by determining several key aspects, including the concept, content and theme, character development, book format and size, typography, title, image design, and color selection. The design was developed using Canva Pro. In line with Nugrohowati (2023), who stated that children are more interested in relatable daily stories, the storyline and characters were adjusted to reflect the life and environment of elementary school students.

Typography elements such as font type, size, and consistency were carefully considered. The dialogue font size used in the book was 13pt, as this is appropriate for children's reading ability, supported by Nikmah (2018), who stated that font sizes between 12pt and 14pt improve comprehension for school children. Visual spacing was designed to enhance comfort in reading.

The book was formatted in a 20 x 20 cm square shape to align with the hand size and reading habits of children, as recommended by Sani (2020), and supported by Nugrohowati (2023), who noted that such size is convenient and portable for young readers. Widya (2023) also pointed out that most children's books are approximately 20.32 x 25.4 cm. The book was printed on Art Paper using full-color printing, with a total of 18 story pages.



Figure 1. Picture Book Cover

Implementation Stage

The storybook titled "*Smart Choices for Healthy Snacks*" was printed and implemented for initial use. The 20 x 20 cm format was chosen to be child-friendly, whether read independently or with adults. The production used art paper for its durability and vibrant color quality, and the layout and graphics were created using Canva Pro software. This stage ensured that the media was both functionally usable and visually appealing to the target audience.

Integration and Testing Stage

Media Expert Validation

According to Sugiyono (2013), after the product design is completed, expert validation is necessary to evaluate the product before mass implementation. The media expert provided input regarding the layout, typography, and visual elements.

Based on the validation results, the media obtained a score of 88%, categorizing the illustrated storybook as very feasible. The font type, font size, and consistency were deemed suitable for children's cognitive and reading abilities

Content Expert Validation

Validation from a content expert yielded a result of 81%, which also categorized the media as very feasible. However, suggestions were made regarding terminology improvement. According to Al-Faruq (2023), communication always involves three main components: sender, receiver, and message, which in this case is the learning material. Rahmawati (2017) emphasized that the educational media must match the students' level of thinking so that the content can be effectively understood.

Media Trial Test

A limited field trial was conducted on students at SDN 74 Kota Bengkulu. The trial evaluated various aspects of the illustrated storybook Presentation of material in a structured and engaging way, language simplicity, design attractiveness, motivation increase, and clarity of content were rated positively. 8.6% of respondents indicated that the dialogue was inappropriate in some parts. 5.7% felt the facial expressions of characters did not fully reflect the storyline. 11.4% stated that the storybook did not significantly support independent learning. 2.9% mentioned that the book was not easy to use anytime and anywhere. 2.9% reported that the additional knowledge presented was insufficient.

Despite some minor shortcomings, the overall percentage of students who considered the book feasible for use was 97.1%, confirming the storybook as a valid educational tool for promoting awareness about healthy snacks among elementary school students.

Final Revision and Dissemination Stage

Based on the trial results and expert recommendations, final revisions were made to improve the terminology, illustrations, dialogues, and layout to better suit students' comprehension levels. The final product was then disseminated to students and school staff at SDN 74 Kota Bengkulu, with the aim of broadening its impact as an educational media. This dissemination ensures that the illustrated storybook can be widely used as a tool to increase children's knowledge and awareness of making smart and healthy snack choices.

Product Dissemination

After the final revision and confirmation of product feasibility by experts and trial participants, the next stage was dissemination. This was carried out by distributing the final version of the illustrated storybook on healthy snacks to students and school staff as a form of implementing the research results. The objective of this dissemination was to ensure that the developed product could be utilized more broadly by students and teachers to support nutrition education and to raise early awareness about the importance of consuming healthy snacks.

Discussion

Requirement Stage (Media Needs Analysis)

Based on the results of in-depth interviews with fifth-grade students at SDN 74 Kota Bengkulu, it was found that children prefer picture storybooks because they contain many attractive illustrations, are easy to understand, and are not boring. This is in line with the findings of Hurlock (as cited in Faiza, 2009), who stated that school-aged children are fond of picture storybooks due to several reasons:

1. they provide opportunities for children to gain insight into personal and social issues and help them solve such problems.
2. they stimulate children's imagination and curiosity about supernatural topics;
3. they offer a temporary escape from the hustle and bustle of daily life;
4. they are easy to read—even children with low literacy can understand the story through the images;
5. they encourage reading interest, which is not often supported by other types of books;
6. they fulfill children's expectations, especially when presented in serial form;
7. the colorful and simple illustrations are easy for children to comprehend

This research is supported by the results of Ramadhani and Setyaningtyas's (2021) study, which found that the use of picture books can encourage readers to understand their surroundings through illustrations. The images displayed make students more interested in reading, thus enabling them to comprehend the text. Picture books encourage students to develop their emotional skills in responding to problems or situations. Research by Fatimah and Maryani (2018) explains that learning materials presented in media must align with learning objectives, be comprehensive, and facilitate understanding of learning concepts.

According to Sadiman (2015), students tend to be passive during learning activities when educational facilities and media are inadequate. To overcome this, the use of picture storybooks as a medium for delivering health education in a proper and varied manner can help reduce student passivity and enhance their imaginative capacity in interpreting the illustrations in the book.

The selection of child characters in the storybook was also based on in-depth interviews with informants, which revealed that 3 out of 5 students preferred cartoon characters in the story. Informational books are those that provide factual content. These books present facts and data as they are, which can enhance skills, knowledge, and theoretical understanding to a certain extent for children (Wulandari, 2017).

The picture storybook created in this study contains informative content aimed at increasing children's knowledge. Sinamo (2023) also argues that a good picture storybook can broaden a child's worldview and deepen their understanding of it—just like the journeys they experience in stories. Picture books may tell stories about real people and events.

While picture storybooks have certain drawbacks, they also offer many advantages. According to Apriatin (2021), the advantages of using picture storybooks include: making learning more engaging, increasing students' reading interest, assisting teachers in conveying the content through concrete visuals, and the books being widely accessible. On the other hand, their disadvantages include students focusing solely on the pictures while neglecting the accompanying text, which can lead to ineffective learning, and the

potential for classroom disruption when students begin comparing the images in the books with each other.

Design Stage (Media Design)

In this study, the researcher designed the media based on the needs of the target audience as identified in the media needs analysis, namely attractive characters and easily understood messages.

Nugrohowati (2023) also stated that children are particularly fond of storybooks that relate to their daily activities. The picture storybook media was designed according to the criteria of good printed media as suggested by Paramita (2022), which include consistency and appeal.

Consistency refers to the uniformity in text formatting, spacing, and page layout. In this picture storybook, consistency is applied in the font type, font size, and use of letters, which are adjusted to the characteristics of elementary school students. The font size used for dialogue in the storybook is 13 pt, as font size directly affects students' reading comprehension. This is supported by research from Nikmah (2018), which found that most students understand reading texts better when the font size ranges from 12 pt to 14 pt (Times New Roman or Arial).

Line spacing was also carefully considered to ensure that the distance between lines is neither too narrow nor too wide, making the text easier to read. The page format used in this storybook design is 20 x 20 cm, which is suitable for children's reading material.

In line with the research findings of Lubis and Dasopang (2020), the appearance aspect is important to consider because it will determine the user's impression of the book. Assessment aspects include physical appearance, use of images, use of color, use of text, and supporting components. This aligns with the research findings of Febriani (2015), which stated that color and font selection are important considerations when presenting picture storybooks for early childhood.

Implementation Stage

The picture storybook was designed and printed in a 20 × 20 cm paper size, specifically chosen to suit children's comfort in holding and reading the book independently or when being read to by an adult. This aligns with the findings of Nugrohowati (2023), who stated that picture storybooks printed in 20 × 20 cm format are easier for children to carry.

According to Wulandari (2018), most children's storybooks generally have an average size of approximately 20.32×25.4 cm. The material used for this picture storybook is *Art Paper*, which offers a smooth, glossy finish that enhances the quality and appeal of the illustrations.

The editing and layout design of the storybook were carried out using Canva Pro software to ensure a clean and attractive visual presentation suitable for young readers.

CONCLUSION

1. The results of the media needs analysis showed that informants preferred books with many illustrations, as they were easier to understand and less boring. They enjoyed school-themed cartoon stories, were able to define what healthy snacks are, and all informants agreed that choosing healthy snacks has many benefits.
2. The design of the picture storybook media began with determining key aspects, including concept, content and theme, character design, book format and size, typography, title, illustration design, and color selection. The media was designed using Canva Pro software.
3. The picture storybook titled "*Smart Choices for Healthy Snacks*" was printed in full color using a print-out technique, with a 20 x 20 cm book size on art paper. The story section of the book consists of 18 pages.
4. The validation test results from media experts categorized the media as highly feasible, and the validation results from content experts also classified it as highly feasible.
5. The media trial showed that the picture storybook was feasible for use by the target group of elementary school students.
6. A final revision of the product was made based on the limited trial results to improve the content, language, illustrations, and overall visual presentation, making the book more effective and better suited to students' needs.
7. The final product dissemination was carried out by distributing the picture storybook to students and the school, allowing the product to be more widely utilized as an educational medium to improve children's understanding of the importance of choosing healthy snacks

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