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# Development of Busy Page Media to Introduce Nutritious and Balanced Foods to Young Children

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**Abstract**

This study aims to develop learning media using busy pages as an educational tool to introduce nutritionally balanced, healthy foods to children aged 4–5 years. Early childhood is a golden period when children need appropriate stimulation to understand the basic concepts of a nutritionally balanced healthy diet. Introducing balanced nutrition from an early age is important because it can shape good eating habits, including the consumption of staple foods, side dishes, vegetables, fruits, and water as the body's main needs. The type of research used is Research and Development (R&D) with the ADDIE model, which consists of five stages, namely Analysis, Design, Development, Implementation, and Evaluation. In the analysis stage, the needs of children and teachers for attractive learning media were identified. Next, the design and development stage produced interactive, colorful busy pages equipped with manipulative activities in accordance with the characteristics of preoperational children. The validation results from media experts and subject matter experts showed that the product was "highly feasible. Based on the results of child development assessments, children were able to name examples of staple foods, side dishes, vegetables, fruits, and their functions for the body, as well as arrange food on a plate with a complete balanced nutritious meal. This busy page media is an interactive, enjoyable learning medium that is appropriate for the developmental characteristics of preoperational children

**Keywords:** Nutritious and Balanced Foods, Young Children.

## INTRODUCTION

Healthy, nutritionally balanced food for children is a topic often discussed today in efforts to create a healthy golden generation. Early childhood growth and development are influenced by balanced nutrition. Introducing nutrition to early childhood will affect the child's life in later years. Nutrition education does not have to wait until children become adults; it should begin from an early age so that children get used to eating healthy, nutritionally balanced foods. Early childhood is a period of rapid brain development. Therefore, nutritionally balanced foods should be introduced early so that children become accustomed to them and adopt a healthy lifestyle.

Good nutrition supports children's bodily functions and helps prevent illness, as their immune systems are strengthened by nutritious food intake from an early age. Nutrition consists of substances the human body needs to maintain and repair tissue so it can function optimally. In relation to nutritious food, we will also learn how nutrition is found in every food and drink that is good for the body. Inadequate nutrition, such as the consumption of unhealthy foods, can affect children's growth and development, including cognitive function and overall physical health (Chiwila et al., 2024). Nutrition provides the most significant benefits for children's growth and development because it is consumed daily and is essential to the body. Children who have met their nutritional needs will grow and develop well in the years ahead. Establishing a balanced diet from an early age is essential for promoting optimal growth and development in children and for preventing stunting (Islamiati & Kurniasih, 2025). Mothers play an important role in choosing and preparing food for their children. However, early childhood education also continues the stimulation provided by mothers or parents to their children by providing nutritionally balanced meals, helping children get used to choosing foods that are good for their bodies. The knowledge of parents and educators also influences the types and quality of nutritious foods that young children should consume.

Children's health also depends on the nutrition they get from their food. Poor-quality food can affect children's metabolic functions, leading to illness. A balanced diet includes carbohydrates, protein, fat, vegetables, and fruit in equal amounts. Nutritional deficiencies in children will affect their activity and thinking abilities (Uce, 2018). Malnourished children are also susceptible to various diseases because their nutritional intake is disrupted or their bodies are deficient in nutrients. A good diet, along with access to nutrient-rich foods, is essential for children's growth and development. Parents must provide optimal school lunches with healthy menus that also increase children's appetite for nutritious foods. Nutritious, balanced meals must contain carbohydrates, preferably animal-based protein, fats (oil, coconut milk, margarine, etc.), and fruits or vegetables. The proportion of carbohydrates in children's meals is higher than that of other nutrients because carbohydrates are needed as a source of energy. The next portion is protein, which also has significant benefits for repairing tissues in young children. There are two types of protein: animal and vegetable. The proportion of fat is lower than that of carbohydrates and protein, but fat also serves an optimal role as a source of energy for brain development in young children. Vegetables and fruits are also suitable for young children, but can inhibit nutrient absorption if consumed in excess.

Based on observations at the Amarta Tani preschool class indicate that children aged 4–5 years experience difficulty understanding the concept of healthy food. They tend to identify food primarily by taste rather than nutritional content. Furthermore, most children are unable to accurately categorize food types, including staple foods, side dishes, vegetables, and fruits.

Supplementary feeding is provided weekly. However, the food served is not nutritionally balanced, and children in group A are not yet familiar with nutritionally balanced foods or their functions. Nutritious, balanced foods must be introduced to young children, starting with familiarising them with healthy options so they become accustomed to choosing them. The findings also reveal that previous learning methods relied heavily on verbal explanations and non-interactive media, which contributed to decreased interest and focus among children. Consequently, there is a need for innovative, engaging, and concrete learning media, such as Busy Pages, that are better aligned with children's developmental characteristics to improve their understanding of healthy eating and balanced nutrition. Therefore, it is necessary to introduce nutritious, balanced foods through media that are enjoyable for children, such as busy pages featuring menus of these foods. In early childhood (0-6 years), balanced nutrition is important because this is a critical period for physical growth, brain development, and the formation of eating habits that will affect future health. Early childhood requires a variety of nutrients to support optimal growth and development. The principles of balanced nutrition include 1) creating food diversity, (2) adjusting food portions to the child's age and physical activity to prevent nutritional deficiencies or excesses, ideal meal frequency, and physical activity that supports metabolism and prevents obesity in children. The challenge in meeting children's nutritional needs lies in choosing foods, making it difficult to ensure nutritional diversity (Achadi et al., 2020).

Irregular eating habits can lead to insufficient nutrient intake. According to Piaget's theory, habits can form during the preoperational stage (ages 2-7). Strategies to Improve Balanced Nutrition include 1) Parents need to understand the importance of balanced nutrition and implement healthy eating habits at home, 2) The introduction of new foods is then carried out by providing new foods gradually and in small portions, 3) attractively presenting food, such as creative shapes or color combinations, can increase children's interest in eating (Rianti et al., 2023). It is important to train children to recognise food composition gradually because it affects their development and growth.

Nutrition is the process by which food is consumed and digested, absorbed, transported, stored, metabolised, and excreted to maintain life, growth, and normal organ function, as well as to produce energy (Hidayah et al., 2024). The body needs nutrients to maintain life. The fulfilment of nutritional intake for children over two years of age must still be considered (Nugroho et al., 2021). Early childhood requires adequate nutrition to support optimal growth. Providing supplementary foods, composing, and preparing balanced meals that are creatively designed to introduce healthy, nutritionally balanced foods (Widaryanti, 2021). Providing food for early childhood also requires media that introduce healthy, nutritionally balanced foods. Modules should be developed to introduce healthy foods attractively, using appealing images so that not only parents but also children recognise them (Ayu, et al., 2024). In addition to media, one of the most important parenting methods is feeding children (Andi et al.,, 2024). Nutritional deficiencies can affect children's growth by leading to stunting and malnutrition. Malnutrition causes irreversible physical development disorders (Azpah et al.,2023). Healthy, nutritionally balanced foods must be introduced to young children, starting with familiarising them with the types of healthy foods so they become accustomed to choosing them. Therefore, it is necessary to introduce healthy, nutritionally balanced foods through media that are enjoyable for children. Young children need balanced nutrition to support physical growth and cognitive development. A healthy, nutritionally balanced diet provides adequate nutrients in the

right proportions to meet the body's needs. Each meal should consist of staple foods as a source of energy, side dishes as a source of protein and other nutrients, vegetables and fruits rich in vitamins, minerals, and fibre, and water to maintain fluid balance in the body. By consuming foods in balanced portions of carbohydrates, protein, fat, vitamins, minerals, and fluids, the body will obtain sufficient energy, support growth, and maintain optimal health.

Children aged 4–5 years are in a developmental period often referred to as the golden age. At this stage, almost all aspects of development occur very rapidly and are interrelated. Physical growth, intelligence, language, emotions, morals, and sensitivity to art fsorm an important foundation for children's readiness to face the next stage of education. Based on Jean Piaget's theory, children aged 4–5 years are in the preoperational stage. Interactive learning media, such as busy pages or busy books, are ideal for stimulating symbolic thinking skills, practising simple logic, and providing concrete learning experiences (Indriyani et al., 2024). Vygotsky's theory explains that the learning process for children aged 4–5 years is most optimal through social activities and authentic experiences. At this stage, children are in the Zone of Proximal Development (ZPD), the range between the abilities they have mastered on their own and those they can achieve with help from adults or peers.

In this framework, learning media serve as intermediaries (mediation tools) that help children build new understandings through play activities accompanied by step-by-step teacher guidance (scaffolding). Teachers play an important role in helping children grow and develop optimally. Therefore, teachers need to master competencies appropriate to the educational needs of early childhood, especially in designing, producing, and using creative and meaningful learning media (Adhani et al., 2023). The application of media must reflect Vygotsky's principles because it provides opportunities for children to learn actively through visual, motor, and social activities. Teachers and principals make a significant contribution to educating students about the importance of healthy eating patterns and to implementing more nutritious menu choices in the school environment (Fitria et al., 2024). During the activity, teachers provide initial guidance to stimulate children's understanding, then gradually reduce their support so that children can learn independently. Thus, the use of learning media, such as busy pages, can support children in constructing knowledge through social interaction and meaningful, concrete experiences. In this way, learning media help children build conceptual understanding through social and concrete experiences (Santrock, 2018). Socially, children aged 4–5 years begin to enjoy activities with their peers. They learn to share, take turns, and cooperate in group games (Papalia & Martorell, 2021). Children aged 4–5 also show a strong interest in art activities. They enjoy drawing, colouring, pasting, singing, dancing, and playing simple musical instruments. Art activities not only provide opportunities for expression but also support fine motor development, foster imagination, train concentration, and express feelings that are difficult to express in words (Howard & Mayesky, 2022).

Children aged 4–5 years are in a phase of rapid development, both physically, cognitively, linguistically, socio-emotionally, morally, and artistically. At this preoperational stage, they learn through concrete experiences, symbols, and imagination. Given these characteristics, learning media are needed that are not only fun but also provide appropriate stimulation across all aspects of child development. One suitable medium is the busy page, as it contains a series of visual, manipulative, and interactive activities that support children's preoperational stage. Learning media designed with various colors and attractive decorations to capture children's attention to learn, helping to reduce boredom during the learning process, as the activities are

presented in a more varied and enjoyable way (Fitriyah et al, 2021). Through the busy page, children are not only invited to play but also to learn about healthy food and balanced nutrition concepts directly. For example, children can match pictures of staple foods, side dishes, vegetables, fruits, and water as the primary source of fluids. This activity provides concrete experiences that help children understand the concept of balanced nutrition, while also training their symbolic thinking skills, strengthening their fine motor coordination, fostering creativity, and instilling healthy food choices from an early age. Interactive learning media, such as busy pages or busy books, can be used to stimulate children's understanding of basic concepts (colours, shapes, and sizes) while also training their symbolic thinking and simple logic skills. This media also supports children's active learning process through assimilation and accommodation mechanisms, which are at the core of cognitive development (Indriyani et al., 2024).

Busy pages are a form of interactive, activity-based learning media that often feature activities that encourage children to learn independently. This media emphasises "learning by doing," allowing children to explore cognitive, motor, and social skills in a fun way. The use of busy pages has significant benefits for child development. In developing busy pages, several principles need to be considered: 1) Activities should be tailored to the child's ability level; 2) Materials and activities must be safe for children; 3) Offer a variety of activities to stimulate all aspects of development; 4) Children must be directly involved, not just as observers. Therefore, interactive learning media, such as busy pages or busy books, can be used to stimulate children to recognize basic concepts (colours, shapes, and sizes), while also training their symbolic thinking and simple logic skills in introducing healthy, nutritionally balanced foods to early childhood. Healthy, nutritionally balanced foods should be introduced to children at an early age, starting with a variety of healthy options until they become accustomed to choosing them. Therefore, it is necessary to introduce healthy, nutritionally balanced foods through media that are enjoyable for children, such as busy pages containing healthy, nutritionally balanced food menus.

## METHODS

This study uses research and development, in which a product is developed that has novelty compared to previous products. The Research and Development (R&D) method was used because this study aims to produce a product in the form of a Busy Page. In addition, this method allows for testing the feasibility and effectiveness of the medium in introducing healthy, nutritionally balanced foods to young children. The product to be created is a visual medium using busy pages to introduce nutritionally balanced, healthy foods. This study addresses the lack of awareness of nutritionally balanced, healthy foods, and research is needed in early childhood to introduce children to them. The product's feasibility was informed by previous relevant research on busy pages to introduce healthy, nutritionally balanced foods. Experts will validate this instrument sheet before being distributed to users. The procedures in this study are: 1. data collection, 2. initial product development, 3. testing, 4. improvement. The ADDIE model consists of five stages: Analysis, Design, Development, Implementation, and Evaluation (Safitri et al., 2023). The ADDIE model can serve as a practical framework for designing early childhood learning models (Indianti et al., 2022) The ADDIE model is very helpful in producing structured learning media that meet the needs of early childhood (Safitri et al., 2023). These

findings confirm that the ADDIE model can be used as a systematic approach to developing educational media that is relevant, easy to understand, and supports the achievement of learning objectives in early childhood. The product development process used the following ADDIE model:


Figure 1. Product Development Stages from the ADDIE Model

This study was conducted in group A of a kindergarten in Bandar Lampung City with 28 children as subjects. This kindergarten was chosen because it already held a communal meal on Fridays, but the menu was not nutritionally balanced. The main objective of this study was to develop busy-page media that had been tested for validity and feasibility and to use them effectively in the learning process.

## RESULTS AND DISCUSSION

This research was conducted at Amarta Tani Kindergarten in Bandar Lampung to produce a busy page learning medium for early childhood. This medium was designed to attract children's attention and increase their motivation to learn. This research falls under the category of research and development (R&D). The ADDIE model consists of five stages: analysis, design, development, implementation, and evaluation.

1) Analysis

In the analysis stage, an assessment was conducted on the needs of early childhood in recognising healthy foods. The results of the observation showed that all children at Amarta Tani Kindergarten still had difficulty distinguishing between staple foods, side dishes, vegetables, and fruits, and in understanding the importance of water. Children were not yet able to understand the simple functions of each food group. Teachers also need learning media that are interesting, interactive, and aligned with the learning characteristics of kindergarten children, who enjoy playing while exploring. Based on these needs, the main objective was set: to help children learn the concept of a balanced, nutritious plate in a fun and straightforward way. Based on the early childhood education curriculum, early childhood educators are expected to learn the basic concepts of healthy, balanced nutrition. Therefore, busy pages were chosen as an alternative medium because they are concrete, visual, and can actively involve children. The learning objectives formulated are for children to recognize the five main components of a balanced plate, understand the simple functions of each food group, and be able to compose a simple, nutritionally balanced menu through play-based learning activities.

2) Design

The design stage is an important phase in the creation of learning media, because at this stage, the form, content, and activities to be presented to children are determined. The busy page or interactive worksheet is designed to capture children's interest while making it easier for them to understand the concept of healthy, nutritionally balanced food. The busy page is designed as a worksheet with a picture of an empty plate as the center of activity. This empty plate is where children arrange their daily menu by sticking or matching the provided food pictures. This interactive format was chosen because young children tend to enjoy concrete games that they can touch, move, and rearrange. Thus, this media combines elements of play and learning (learning by playing). The media content is arranged according to the principles of balanced nutrition, which include several main food groups.

a. Staple foods such as rice, corn, sweet potatoes, and potatoes. This component serves as the primary source of energy for children.
b. Side Dishes: chicken, fish, eggs, tempeh, and tofu. This group emphasises the importance of animal and plant proteins for growth and development.
c. Vegetables: carrots, broccoli, spinach, and green beans. Vegetables contain fibre, vitamins, and minerals that are important for digestive health and immunity.
d. Fruits: bananas, mangoes, oranges, and apples. Fruits provide vitamins, minerals, and fiber- Water: depicted in the form of a glass filled with water.
e. Water is important for the body to facilitate digestion and avoid dehydration. This teaches children that water is an important part of a healthy diet. With these five components, children will become accustomed to recognising and remembering that every healthy menu consists of several elements, not just one type of food.

The visuals on the busy page are brightly colored and simple, with images sized appropriately for children so that they are easy for them to recognise. The busy page measures 20 cm. Bright colours attract attention and generate enthusiasm when children use the media. The images are chosen to be easily recognisable to children and found in their surroundings, as well as uncomplicated, so that young children can quickly recognise the differences between staple foods, side dishes, vegetables, and fruits. The activities are designed not only for sticking, but also for developing spatial skills, creativity, and understanding of food composition, as well as for answering teachers' questions to practice communication skills, critical thinking, and connecting activities to health concepts. Thus, this media emphasises not only cognitive but also motor, social, and emotional aspects of children.

3) Development

Introducing a balanced diet helps children recognize that healthy foods come from diverse sources rather than a single staple. Incorporating local foods can foster healthy eating habits from an early age and promote appreciation for regional food diversity. Gradual introduction of healthy foods, beginning with those already familiar in a child's daily routine, is recommended. This approach aligns with Jean Piaget's constructivist theory, which posits that children learn through direct experience and interaction with their environment (Erawati & Adnyana, 2024). During early cognitive development, hands-on learning is particularly

significant. Familiar foods facilitate children's understanding of new concepts, supporting progression from simple to more complex ideas. A child-friendly menu should insclude staple foods such as rice, corn, sweet potatoes, and potatoes; protein sources such as chicken, fish, eggs, tempeh, and tofu; and vegetables such as carrots, broccoli, spinach, and green beans; and fruits such as bananas, mangoes, oranges, and apples. Adhering to these principles enhances the effectiveness and relevance of balanced nutrition education for children.

The developed product in this study, a busy page, functions as an interactive learning tool designed to introduce young children to the concept of healthy, nutritionally balanced food. This medium serves as both a visual aid and a manipulative tool, enabling children to engage in hands-on activities such as matching, grouping, and selecting food types. These activities provide real-world experiences that correspond to the children's cognitive developmental stages. Rather than passively observing images, children actively participate in the learning process, thereby enhancing the experience's meaningfulness. This method aligns with early childhood education principles that prioritize the “learning by doing” approach, which is recognized as more effective because of children's active involvement and direct experiences. The assessment indicators for children's developmental achievements in this study are as follows: (1) the ability to name various examples of staple foods; (2) the ability to name various examples of side dishes; (3) the ability to name various examples of vegetables; (4) the ability to name various examples of fruits; (5) the ability to correctly group staple foods, side dishes, vegetables, fruits, and water on a nutritionally balanced plate; and (6) the ability to name the functions of staple foods, side dishes, vegetables, fruits, and water.

During the development stage, the busy page design was transformed into a concret medium. The images of plates and food were created with simple designs, bright colours, and precise shapes to make them easily recognisable to children. The images were 20 cm in size and printed on thick paper for durability and reuse. The design prioritizes safety, durability, and alignment with children's developmental characteristics. The selected materials include BC (Brief Card) paper, which is thicker than standard HVS paper, has a smooth, semi-glossy surface, and has a basis weight of 160-260 gsm. To further enhance durability, the material is laminated and adhered, enabling repeated use during learning activities. Initial trials were conducted with early childhood teachers to ensure that the content and appearance were appropriate for children's needs. Based on feedback from experts and teachers, improvements were made, including enlarging images and adding simple pictures to help children understand their functions. The food images are created with clear, attractive illustrations, and the paper is thick, so it is not easily damaged and can be used repeatedly. Some images are laminated to increase durability. The activity sheet consists of a first section with an empty plate and a second section with cut-out food images to paste on. After the design was completed, the next step was to develop the actual product.

The results of this study include the development of busy-page media to introduce healthy, nutritionally balanced foods to early childhood. The feasibility of this media is evident in validation results from media and materials experts in the field of early childhood education, and teacher responses. Media expert validation assesses visual design, material quality, practicality, and display clarity. The indicators included clarity of image colours, size, durability, material safety, ease of use, and a display that is easier for children to recognise. The following is a busy page to introduce nutritionally balanced, healthy foods to early childhood:

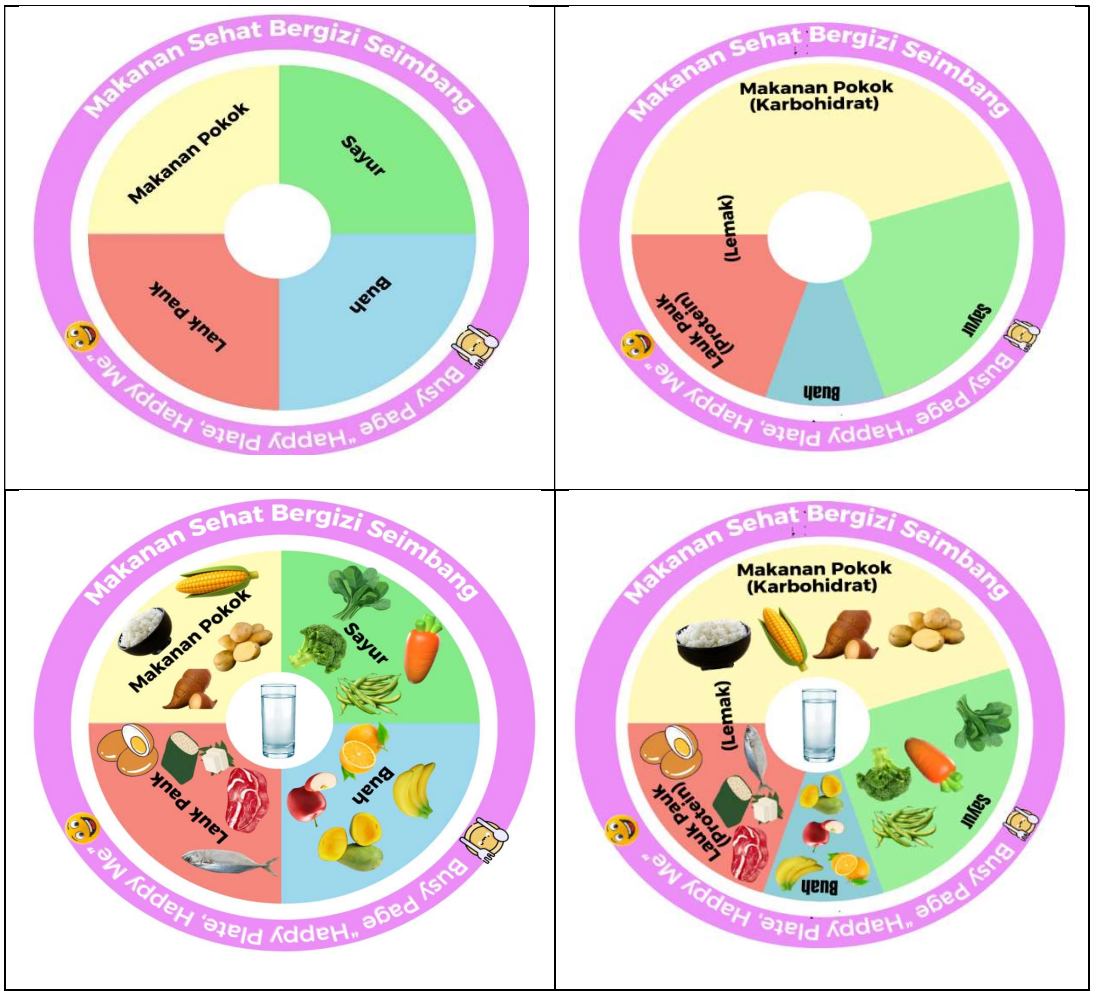

Figure 2. Nutritionally Balanced Healthy Food Busy Page (Happy Plate, Happy Me)

The results of the first stage of validation showed that the learning media achieved a score of 72.92%, categorised as "Suitable," with several recommendations to enhance its quality and effectiveness. In the second stage, after improvements were made based on input from validators, including suggestions to simplify images, adjust colours, improve image clarity, and enhance practicality, to make it easier for students to understand. The score increased to 93.75% and was categorised as "Very Suitable". The product developed in this study is a “busy page” learning tool intended to optimize young children's understanding of a healthy, nutritionally balanced diet.

The conceptual framework for this material is grounded in early childhood learning principles that emphasize active engagement through hands-on activities. Accordingly, the busy pages are designed as interactive resources that facilitate matching, grouping, and meal planning tasks. Each activity serves as a learning indicator for balanced nutrition, covering the introduction of food types, classification by nutrient groups, and the creation of basic healthy menus. Based on this increase in score, it can be concluded that the busy-page learning media developed to introduce the concept of healthy, nutritionally balanced food to early childhood have adequate quality and are very suitable for use in the learning process.

Table 1. Media Expert Validation Results

| Validation Stage | Score (%) | Category |
|---|---|---|
| First Stage | 72.92% | Suitable |
| Second Stage | 93.75% | Very Suitable |

Subject matter experts validate the content for appropriateness, information accuracy, clarity of function, and suitability for the child's age. The indicators include alignment with the concept of balanced nutrition, accuracy in accordance with nutritional science, ease of understanding for children, simplicity, and alignment with child development. The development of learning media in the form of busy pages to introduce the concept of healthy, nutritionally balanced food to early childhood was carried out in two stages of expert validation. In the first stage, the evaluation results showed that the media received a score of 70.45%, placing it in the "Acceptable" category. This result shows that the learning media meet the minimum criteria for use. However, several aspects still need improvement to enhance the quality of content presentation and the clarity of information. After revisions and improvements based on these recommendations, the second stage of validation showed an increase in the score to 90.90%, which is categorised as "Highly Acceptable".

Table 2. Material Expert Validation Results

| Validation Stage | Score (%) | Category |
|---|---|---|
| First Stage | 70.45% | Suitable |
| Second Stage | 90.90% | Very Suitable |

This improvement indicates that the revisions have successfully enhanced the media's quality, in terms of design, content, and its effectiveness in delivering learning materials. Thus, it can be concluded that the busy page developed is of adequate quality and can be optimally used to introduce the principles of a healthy and balanced diet to early childhood. This not only supports the interactive learning process but also helps children build an initial understanding of healthy eating patterns in a fun way. The teachers' responses also assessed the aspects of attractiveness, suitability for learning, practicality of use, and child involvement. The indicators included children's interest (colours, shapes, and activities), support for the theme of healthy food in early childhood education, ease of use for teachers in the classroom, and children's active participation in sticking and arranging. The results of teachers' responses to the use of busy pages developed to introduce the concept of balanced, nutritious food to early childhood. The assessment was based on several important aspects, namely the attractiveness of the media, suitability for learning, practicality of use, and child involvement. Overall, the score was 95.83%, placing it in the "Very Suitable" category.

The evaluation categories for the validation indicators, the present study developed an evaluation framework encompassing content appropriateness, information accuracy, clarity of function, age appropriateness, visual design, material quality, practicality, and clarity of presentation. The purpose of establishing these categories is to ensure that the developed

product is both factually accurate and functions as an effective, user-friendly learning tool. These results indicate that the busy page developed is not only attractive and relevant to the learning material, but also practical to use and significantly increases children's engagement. Thus, this media can be relied upon as a practical learning tool for introducing the concept of healthy, balanced nutrition to early childhood.

4) Implementation

The implementation stage using busy pages is carried out in class with the children. The teacher first explains the concept of a balanced plate by telling a story and showing pictures. After that, the children are given busy pages with pictures of empty plates and cut-out food. The children are asked to arrange the contents of the plate according to the teacher's instructions: put the staple food first, then the side dishes, vegetables, fruit, and a glass of water. The teacher accompanies the children, provides guidance, and asks simple questions about the functions of staple foods, side dishes, vegetables, fruit, and water, such as "Which one gives the body energy?" or "What makes the body grow tall?" In this way, the activity is active, fun, and meaningful. The following implementation stage is the direct use of busy pages in the classroom:

a. Initial Activity

The teacher begins by talking about the importance of healthy eating. For example, "If we eat rice, our bodies will be strong enough to play. If we eat vegetables, our bodies will be healthy. If we drink water, we will not get thirsty quickly or become dehydrated." The teacher explains that a plate should include staple foods, side dishes, vegetables, and fruit, along with enough water.

Figure 3. Teacher and Children Ask and Answer Questions About Nutritionally Balanced Food

b. Main Activity

The main activity consists of two types of play activities (sensorimotor and constructive) in the following stages:

1. Children are given a busy page with a picture of an empty plate.
2. Children choose food picture pieces according to the teacher's instructions, which is first to introduce pictures of staple foods.

Figure 4. Children Selecting Picture Pieces Food

3. Children stick the fruit pieces first, consisting of bananas, mangoes, apples, and oranges.
4. The teacher accompanies, asks questions, and provides guidance such as: “Which ones can make our bodies strong? Which ones prevent our bodies from getting sick easily?”
5. Next, the children gradually stick pictures of staple foods (rice, potatoes, corn, and sweet potatoes), side dishes (fish, eggs, meat, and tempeh), vegetables (spinach, carrots, green beans, and broccoli), and finally a glass of water.

Figure 5. This Activity (Children Arrange and Paste on a Busy Page of Healthy, Nutritionally Balanced Foods)

c. Final Activity

The final activity is carried out with the following steps:

1. Children are asked to show the plates they have pasted.
2. The teacher and children reflect on the activity by concluding that a healthy plate must contain staple foods, side dishes, vegetables, fruit, and water.



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Figure 6. Children Recounting Healthy Foods

This implementation encourages children to learn actively, engage their senses of sight and touch, understand balanced nutrition, and strengthen their fine motor skills. Through direct and concrete activities, children can process information more easily because the material is presented in a form that can be touched and observed.

Figure 7. Children Showing Their Plate Contents

5) Evaluation

Evaluation is conducted through process and outcome evaluation. Teachers observe children's attitudes during activities, whether they can choose and place food in their groups or still need assistance. Teachers also assess the outcome of children's busy pages, whether the plates they have arranged are complete with staple foods, side dishes, vegetables, fruits, and water. They also listen to the children describe the functions of staple foods, side dishes, vegetables, fruits, and water. Assessment is carried out using a development rubric that includes not yet developed (BB), beginning to develop (MB), developing as expected (BSH), and developing very well (BSB). The children's development results show that they can name various examples of staple foods, with an achievement level of 85,71%, indicating that 16 children developed as expected, and 12 children developed very well. This shows that children developed well in recognizing staple foods, exceeding the threshold generally considered to indicate expected development (>80%). Children showed strong ability in naming side dishes, with an achievement level of 80,36%, indicating that 22 children developed as expected, and 6

developed very well. Children were able to name various types of vegetables, with an achievement level of 82,14%, indicating that 20 children developed as expected, and 8 children developed very well. The children's ability to name various types of fruit reached 86,81%, which is classified as developing very well, because they have demonstrated optimal mastery of the material. The results show that 15 children developed as expected, and 13 children developed very well. Children correctly grouped staple foods, side dishes, vegetables, fruits, and water on a nutritionally balanced plate, with an achievement rate of 80,36%, indicating that 22 children developed as expected, and 6 children developed very well. This achievement is considered as development as expected because it is good, but there is still room to strengthen grouping skills. Children showed an ability of 78,57% to name the function of each food group, with 24 children developing as expected and 4 developing very well. These results indicate that children can develop as expected because they already understand the basic concept of food functions.

Based on this evaluation, busy pages can be used to introduce healthy, nutritionally balanced foods. Children can understand that food is healthy and nutritionally balanced if a plate contains a sufficient amount of staple foods, side dishes, vegetables, fruit, and water. The busy page is an interactive, fun learning medium suitable for the developmental characteristics of preoperational children. This medium not only introduces the concept of balanced nutrition but also trains children's fine motor skills, creativity, language skills, and social interaction.

## CONCLUSION

The study developed a learning medium in the form of a busy page, serving as an interactive tool to introduce the concept of healthy, nutritionally balanced food to children aged 4–5 years. The development process adhered to the ADDIE model, encompassing the analysis, design, development, implementation, and evaluation stages. Expert validation indicated that the medium was suitable and appropriate for early childhood education. Both teachers and children provided positive feedback regarding the use of the busy page. This was evident in the children's developmental achievements, which ranged from "developing as expected" to "developing very well." The children demonstrated the ability to identify various examples of staple foods, side dishes, vegetables, and fruits, to categorize foods according to balanced nutrition, and to explain the function of each food group. The busy page has demonstrated effectiveness as an interactive and engaging learning tool that aligns with the developmental characteristics of children in the preoperational stage. Beyond facilitating comprehension of balanced nutrition concepts, this medium also supports the development of fine motor skills, creativity, language abilities, and social interaction. Consequently, the busy page medium is suitable as a learning aid and helps foster understanding and promote healthy eating habits from an early age.

This study highlights opportunities for developing diverse learning media innovations. Future research should focus on creating more innovative learning designs that integrate technology and science-based approaches, thereby broadening the impact of nutrition education for early childhood in a comprehensive manner.

## REFERENCES


Achadi, L. E., Achadi, A., & Aninditha, T. (2020). *Pencegahan Stuntiing Pentingnya 1000 Hari Pertama Kehidupan*. New York: McGraw-Hill.

Adhani, D. N., Nazarullail, F., Latif, M. A., & Fitri, F. (2023). NakKanak Penter Media: Introducing Numbers and Geometric Shapes to 4-5-Year-Olds. *Golden Age: Jurnal Ilmiah Tumbuh Kembang Anak Usia Dini*, *8*(4), 239–248. https://doi.org/10.14421/jga.2023.84-04

Andi, S. A., Dewi, M., & Titin, I. (2024). Identifikasi Pengetahuan Orang Tua Dalam Membaca Kartu Menuju Sehat ( Kms ) Di Wilayah Kerja Puskesmas Kota Tengah Kota Gorontalo Identification Of Parents ' Knowledge In Reading Health Cards ( Kms ) In The Working Area Of The Central City Health C. *Jurnal Ilmu Kesehatan*, *12*(1), 39–41. https://doi.org/10.31314/zijk.v12i1.3085

Ayu Yuliani Sekriptini, A., Cucu Sopiah, C., & Andi Ali Kisai, A. (2024). Inovasi Modul Edukasi Gizi AUD untuk Mencegah Stunting pada Anak Usia Dini. *Jurnal Obsesi: Jurnal Pendidikan Anak Usia Dini*, *8*(2), 327–342. https://doi.org/10.31004/obsesi.v8i2.5924

Azpah, I. A., Ramadhan, I., Widjaya, I., Sari, M. I., & Sari, N. (2023). Sosialisasi Pencegahan Stunting pada Baduta dan Pentingnya Pemberian MP-ASI Mengenai Asupan Gizi Anak di Desa Mekarjaya Kabupaten Lebak Provinsi Banten. *Jurnal Abdi Masyarakat Indonesia*, *3*(3), 823–828. https://doi.org/10.54082/jamsi.724

Chiwila, M. K., Krebs, N. F., Manasyan, A., Chomba, E., Mwenechanya, M., Mazariegos, M., Carlo, W. A. (2024). Junk food use and neurodevelopmental and growth outcomes in infants in low-resource settings. *Frontiers in Public Health*, *12*(April), 1–11. https://doi.org/10.3389/fpubh.2024.1308685

Erawati, N. K., & Adnyana, P. B. (2024). Implementation of Jean Peaget'S Theory of Contructivism in Learning: a Literature Review. *Indonesian Journal of Educational Development (IJED)*, *5*(3), 394–401. https://doi.org/10.59672/ijed.v5i3.4148

Fitria Budi Utami, Maya Lestari, Rahmat Saputra, Parmiyatun, & Dea Solliana. (2024). Developing a School Children's Feeding Menu (PMTAS) Based on Local Culture: as an Effort to Prevent Stunting. *Jurnal Pendidikan Anak Usia Dini Undiksha*, *12*(3), 402–410. https://doi.org/10.23887/paud.v12i3.83709

Fitriyah, Q. F., Purnama, S., Febrianta, Y., Suismanto, S., & 'Aziz, H. (2021). Pengembangan Media Busy Book dalam Pembelajaran Motorik Halus Anak Usia 4-5 Tahun. *Jurnal Obsesi : Jurnal Pendidikan Anak Usia Dini*, *6*(2), 719–727. https://doi.org/10.31004/obsesi.v6i2.789

Hidayah Afnas, N., Silvia, E., Sri Rahmayeni, L., & Artikel, S. (2024). Research Article on the Relationship between Pregnant Women's Knowledge of Nutrition and Nutrition During Pregnancy in the Mapaddegat Community Health Center Work Area, 9–24. https://doi.org/10.59963/jmk.v5i1.314

Howard, R., & Mayesky, M. (2022). *Creative activities & curriculum for young children*. Cengage.

Indianti, R. N. K., Leksono, I. P., & Rusmawati, R. D. (2024). Pengembangan media busy book model ADDIE sebagai pembelajaran motorik dan kreativitas pada anak usia dini. STAND: Journal Sports Teaching and Development, 4(2), 89–99. https://doi.org/10.36456/j-stand.v4i2.9015

Indriyani, R., Taswadi, & Sobandi, B. (2024). Analysis of Cognitive Development Theory by Jean Piaget on Color Games on Early Childhood Development. *EduLine: Journal of Education and Learning Innovation*, *4*(4), 504–511. https://doi.org/10.35877/454ri.eduline3068

Islamiati, D., & Kurniasih, S. (2025). Volume 6 Issue 1 ( 2025 ) Pages 14-26 The role of Posyandu in the Prevention of Early Childhood Stunting, *6*(1), 14–26. https://doi.org/10.33369/jpp.v6i1.41706

Nugroho, M. R., Sasongko, R. N., & Kristiawan, M. (2021). Faktor-faktor yang Mempengaruhi Kejadian Stunting pada Anak Usia Dini di Indonesia. *Jurnal Obsesi : Jurnal Pendidikan Anak Usia Dini*, *5*(2), 2269–2276. https://doi.org/10.31004/obsesi.v5i2.1169

Papalia, D. E., & Martorell, G. (2021). *Desenvolvimento Humano-14*. McGraw Hill Brasil.

Rianti, R., Kholifah, A., Hasanah, L., & Setiasih, T. (2023). Implementasi Pengenalan Gizi Seimbang Anak Melalui Kreasi Bentuk Makanan. *Edu Happiness : Jurnal Ilmiah Perkembangan Anak Usia Dini*, *2*(1), 76–88. https://doi.org/10.62515/eduhappiness.v2i1.166

Safitri, D., Faizi Putra Fuwa, M. N., Narjis, K., & Rahimah, R. (2023). The Development of the Interactive Application "Jamune Cah Cilik" to Improve the Health of Early Childhood Using the ADDIE Model. *Al-Athfaal: Jurnal Ilmiah Pendidikan Anak Usia Dini*, *6*(2), 112. https://doi.org/10.24042/00202361840500

Safitri, M. & A. R. (2022). ADDIE, sebuah model untuk pengembangan multimedia learning. *Jurnal Pendidikan Dasar*, *3*(2), 50–58. Retrieved from http://jurnal.umpwr.ac.id/index.php/jpd/article/view/2237

Santrock, J. W. (2018). *Child Development*. New York: McGraw-Hill.

Uce, L. (2018). Pengaruh asupan makanan terhadap kualitas pertumbuhan dan perkembangan anak usia dini. *Bunayya: Jurnal Pendidikan Anak*, *4*(2), 79–92. https://dx.doi.org/10.22373/bunayya.v4i2.6810

Widaryanti, R. (2021). Cegah Stunting Pada Masa Pandemi Covid-19 Dengan Pembentukan Srikandi Pmba. *Dinamisia : Jurnal Pengabdian Kepada Masyarakat*, *5*(4), 979–985. https://doi.org/10.31849/dinamisia.v5i4.5699