

PARENTING BIG BRAIN BOX MEDIA (3B) ON LOGICAL THINKING ABILITY OF CHILDREN 4-5 YEARS

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Abstract: The aim of this research and development of Big Brain Box's (3B) parenting media is to develop a cognitive learning set (logical thinking) for 4-5 years old for eight days and be done with parents. The researcher found out a problem in *Pusat Pengembangan Anak (PPA) I-O 864 "Philia" Malang*, i.e., 4-5-year-old child (66,6% or 8 of 12 children) had difficulties in sorting an object based on the same function, shape, color, size, or group, identifying causal reasoning, understanding patterns, and sequencing object based on five sizes or color series. These things are included in cognitive development (logical thinking). This research was used in the research and development model, which consists of four steps (4-D). The result of efficiency and media suitability is 92.85%, according to early childhood cognitive learning experts, 95.31% according to early childhood instructional media experts, and 96.35% according to media users. The conclusion is that the Big BrainBox as a parenting media is valid and efficient following the cognitive development of a 4-5-year-old child.

Keywords: parenting media, logical thinking, child

INTRODUCTION

Children naturally have innate abilities that are unique and extraordinary, but these abilities will continue to develop if they get interference from others. Brain structures are created with the flexibility or plasticity of cognitive abilities and are vulnerable to environmental conditions that experience poverty in terms of stimulus or stimulation (Hair, et al., 2015:823). Of course, this is a scientific fact that must be of particular concern in the world of Early Childhood Education and those who play an essential role in this age. One of the parties whose role is very important is a family led by parents. According to Fakhruddin (2015:114), the family is the smallest unit of society and is the first environment for humans to learn about the values and norms that apply in the personal life, family, and society at large. Luby et al. (2014:1136) found that children who receive direct stimulation from their parents will have a positive impact on brain development and do not easily experience stress. Besides, the results of research conducted by Brito & Noble (2014:3) also show that the education provided by parents is closely related to good cognitive stimulation for children. Petersen & Wittmer (2015:6) states that the relationship between brain development and parents is that the brain cannot focus on learning things in the environment when children grow up in fear, violence, and neglect from the family. All of these studies together emphasize that the role of parents is more dominant in the cognitive development of early childhood.

Cognitive is one of 6 developments in learning in PAUD institutions. According to the Web (in Holis, 2016:27), cognition is the process of acquiring information in several stages, namely through the senses and processed through nerves in the body to form short or long term memory. The memory will direct the child to make decisions in solving the problems they face correctly. According to Siswono (in Kurniasari, et al., 2018:7), logical thinking is the ability of children to deduce things correctly and following logic based on their knowledge. This ability is very important to be developed in children.

The fact that occurred in the field was that researchers found problems at the IO 864 "Philia" Malang Children Development Center (66%) (8 out of 12 children) difficulty in classifying objects based on function, shape, color, size, or group same, recognize the symptoms of cause and effect associated with him, recognize patterns and repeat them. Sort objects based on five sizes or color serialization. These things are included in the scope of cognitive development with logical sub thinking. Teachers teach the maximum to deepen the material of logical thinking in learning with a variety of media in the classroom as well as providing a variety of activities. However, researchers observed that parents are not too concerned about children's cognitive development, so it needs to be improved so that learning is not only limited to PPA activities, but parents can take good roles for their children's future.

Previous research conducted by Genisti, et al. (2018: 276) titled "The Correlation of Parenting Style with Cognitive Development In Children With Attention Deficit Hyperactivity Disorder" suggests that parents with democratic parenting are closely related to cognitive development. Democratic parents can shape children to make good, creative, confident, and achievement-oriented decisions (still under parental supervision). Also, previous research by Simmons et al. (2017: 2) titled "Study Protocol: Families and Childhood Transitions Study (FACTS) - A Longitudinal Investigation of the Role of the Family Environment in Brain Development and Risk for Mental Health Disorders in Community Based Children" suggests that the care environment (including parenting) has an impact on brain development. The long-term research shows that there are very different effects on the structure and function of the brain with a poor caregiving environment.

Researchers try to explore in order to create interesting media, which consists of activities that can be used to develop logical thinking skills, namely creating a cognitive learning package and done together with parents. Based on the explanation above, the researcher raised a study entitled Media Parenting Big Brain Box (3B) on the Logical Thinking Ability of Children 4-5 Years.

METHOD

Researchers use the development research model or often called Thiagarajan research and development, which consists of four research steps (4-D), namely Define, Design, Develop, and Disseminate (Thiagarajan, 1974: 5). Researchers will only use the steps to define, design, and develop it. Besides, at the product testing or development testing stage in the development step, the researcher will only conduct initial testing. The constructing criterion-referenced tests at the design stage were also not carried out. The trial was conducted in one class, which was chosen by the researcher. The results of trials on the subject will be a very important input.

Research subjects involved in data collection for this development are: (1) The evaluation subjects consisted of 2 early childhood cognitive learning experts and 2 early childhood learning media experts; (2) User validator subjects, namely parents of children aged 4-5 years at PPA IO-864 "Philia" Malang, amounting to 3 people; and (3) The trial was conducted on children aged 4-5 years at PPA IO-864 "Philia" Malang, amounting to 3 children. The type of data obtained is qualitative data and quantitative data. Qualitative data were obtained from the results of expert reviews in the form of suggestions and the results of parental diaries and assessment sheets during the process of using media. Quantitative data were obtained from research questionnaires filled out by experts and questionnaires filled out by parents. The lattice of early childhood cognitive learning expert instruments, early childhood learning media experts, and media users consist of two variables, namely media suitability, and efficiency.

RESULT AND DISCUSSION

Big Brain Box (3B) parenting media is a cognitive learning package for ages 4-5 years for 8 days and is carried out together with parents. Cognitive learning media consists of 8 maps with various colors and numeric writing stickers on each of them. The folder contains specific tools and activities that must be completed. The entire folder will be put in a larger and closed box. The material in the media parenting Big Brain Box (3B) are: (a) the classification of objects based on function, shape, color, size, and groups that are paired with 2 variations (done by pinning a picture paper clip on the description of the appropriate question card); (b) recognize the symptoms of causation (answering questions related to causation relating to self); (c) recognizing AB-AB patterns (making patterns with 2 variations of images); (d) sorting objects based on 5 size or color seriations (done using a color card of a different size and color); (e) the classification of objects based on function, shape, color, size, and groups of pairs with 2 variations (done by placing a small picture card on the appropriate question card information); (f) recognize the symptoms of causation (answering questions related to causation in a story); (g) recognize AB-AB patterns (make patterns with 2 variations of shirt buttons); and (h) sorting objects by 5 seriations of size or

color (done using color cards of different sizes and colors). Activities are not fixed on the worksheet but are made varied so that children feel happy and excited. The media is also equipped with a user manual for parents to be used optimally. In addition, there are daily notes and assessment sheets that can be filled out by parents so that they become an evaluation material every day. The media has been evaluated and validated by 2 early childhood cognitive learning experts with 92.85% and 95.31% results according to 2 early childhood learning media experts.



Figure 1. Media Parenting Big Brain Box (3B)

The trial was conducted on children aged 4-5 years at PPA IO-864 "Philia" Malang, amounting to 3 children with the subject of user validator, namely parents of children aged 4-5 years at PPA IO-864 "Philia" Malang, amounting to 3 people. The results of the quantitative data obtained from the research questionnaire to media users were 96.35%. There are no suggestions given by media users, so researchers do not need to revise and repeat the trial or research stage.

Big Brain Box (3B) parenting media is a learning medium, and following Arsyad's statement (in Chandra, 2017: 47), that is the media is an intermediary used by humans to convey ideas, ideas, and opinions so that they can be well received. This means the concept of learning logical thinking that is elaborated through the media will be easier to reach the recipient or the intended child. According to Rahmawati (2016: 15), the type of non-transparent two-dimensional visual learning media is visual media, board media, print media, sketches, drawings, cards, posters, cartoons and caricatures, charts, graphs, whiteboards, bulletin boards, flannel boards, magnetic boards, textbooks, newspapers, magazines, and comics. Big Brain Box (3B) parenting media is included in the type of non-transparent two-dimensional visual learning media.

The objectives of learning media according to Akhmad (in Pranata et al., 2017: 307), are: (1) to grow motivation and provide stimulus to children to learn; (2) arouse the wishes and interests of children; (3) instilling actual concepts of knowledge; (4) giving uniformity of observation; (5) overcome shortcomings in the classroom because objects that are not possible to be presented in learning, such as objects that are too large or contain risks; and (6) eliminate the limitations of children's experiences. Big Brain Box (3B) parenting media can foster children's motivation, desires, and interests in learning, mainly because of the role of parents who accompany children. This media is also able to present objects in the form of images, thereby eliminating the limits of

space and time and provide uniformity of vision. The concept of true knowledge is also instilled through the media parenting Big Brain Box (3B).

Big Brain Box (3B) parenting media has the principle of using instructional media following Kustiawan (2015: 4), namely: (1) philosophical principles (the media has been made by paying attention to the contents of logical thinking material so that no concept errors occur); (2) psychological principles (media according to age and learning methods of children aged 4-5 years); (3) technological principles (the media have followed the development of modern design technology in the realm of education); and (4) empirical principles (adjusting learning styles of children aged 4-5 years). According to Mursid (2015: 46), the characteristics of instructional media are: (1) having educational value; (2) constructive; (3) encourage children's creativity and activity; (4) does not endanger the child; (5) multipurpose; (6) developing various early childhood capabilities; and (7) intended for early childhood. Big Brain Box (3B) parenting media has educational value, builds knowledge and abilities, encourages children's creativity, is made from materials that do not harm children, can be used repeatedly, and is specifically made for children aged 4-5 years.

Big Brain Box (3B) parenting media is media aimed at PAUD so that it is in line with PAUD principles according to the Ministry of Education and Culture (2014: 10), namely: (1) learning through play; (2) oriented towards child development; (3) oriented towards children's needs; (4) child-centered; (5) active learning; (6) oriented to the development of character values; (7) oriented to the development of life skills; (8) supported by a conducive environment; (9) oriented towards democratic learning (developing mutual respect between children and educators); and (10) the use of learning media, learning resources, and resource persons. Besides, the material in the media is following the portion of achievement that should be according to the Standards for the Achievement of Child Development (STPPA) regulated in the Minister of Education and Culture Regulation of the Republic of Indonesia Number 137 of 2014 (National Standard for Early Childhood Education). The material in the media is also following the cognitive stages of EARLY CHILDHOOD 2-7 (pre-operational stage or children begin to represent the world with pictures) according to Piaget (in Wiyani, 2014: 76), so this media uses many pictures.

Parents' attitudes and behaviors much support the child's achievement in achieving optimal cognitive development. The media parenting Big Brain Box (3B) makes parents have an essential role, as explained by Umar (2015: 25), namely: (1) facilitator or providing facilities and important information to children to develop interests, talents, and life skills; (2) providing intensive guidance; and (3) motivators or provide encouragement about the importance of learning.) These roles are highly expected through parents who use the parenting media Big Brain Box (3B). This is in line with the opinion of Vinayastri (2015: 38), namely the social support of parents and their

guidance in guiding children to face their lives having a positive influence that becomes a provision towards future abilities.

CONCLUSION

Big Brain Box (3B) parenting media is a cognitive learning package for ages 4-5 years for 8 days and is carried out together with parents. Big Brain Box (3B) parenting media is a valid and efficient parenting media following the cognitive development of children aged 4-5 years. The results of the efficiency and suitability of the media 92.85% according to early childhood cognitive learning experts, 95.31% according to early childhood learning media experts, and 96.35% according to media users. This research can be used by teachers and parents and is used in the broader environment by multiplying products. Suggested product development for further research in this research can be developed for other early childhood ages with different fields of development and parenting concepts. The results of the development of this product can be a documentation of scientific work in the field of research and development, especially in the development of media parenting, which is still very rarely found.

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