Training on Creating Interactive Board Media to Enhance Children's Cognitive Development in Distance Learning

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Abstract

Purpose: This research aims to help parents overcome challenges in distance learning during the COVID-19 pandemic by training them to create interactive learning boards, enhancing children's cognitive development at home.

Method: The study used training sessions for parents to create interactive boards, with feedback collected through surveys based on Donald Kirkpatrick's evaluation model, assessing satisfaction and impact on children's learning.

Practical Applications: Parents, equipped with new skills, can now provide more engaging and structured home learning experiences. The interactive boards improved children's focus and cognitive abilities, with 100% of parents recognizing their value.

Conclusion: The study reveals that interactive board media created by parents can significantly improve children's cognitive abilities in distance learning contexts. The high satisfaction rates (93.9%) and the unanimous agreement (100%) on the usefulness of the boards underscore the success of the training. These findings contribute to a broader understanding of how hands-on training for parents can positively impact home-based learning and address educational challenges brought on by the pandemic.

Introduction

The beginning of 2020 marked the onset of panic for countries around the world, with the coronavirus or COVID-19 being the main cause. The spread of COVID-19 has claimed

4.45 million lives globally, while in Indonesia, the number of cases has reached approximately 4 million, with 128,000 deaths (COVID-19 Task Force, 2021). The first case in Indonesia occurred in early March, suspected to involve a foreign national in the country (Handayani et al., 2020). Various aspects of life were affected, including education. What was once classroom-based learning shifted to a learning-from-home concept, with teachers continuing to guide students through a distance learning system (PJJ).

As the world faced the COVID-19 pandemic, all educational activities (face-to-face learning) had to be shifted to using ICT media for learning (Widianto, 2021). The impact of online learning was felt not only by students but also by their parents. One issue that arose during the process of assisting children in learning at home was that children quickly became bored and disinterested in the material being taught. According to data from the COVID-19 Task Force, 47% of children in Indonesia reported feeling bored when studying at home (Kasih, 2020). This was further supported by a survey of parental satisfaction with online learning for third-grade students at Al Huda 2 Islamic Elementary School in Kediri, which indicated that children's focus during home learning became fragmented and less effective. This issue was exacerbated by the fact that parents rarely accompanied their children during online learning sessions. One of the factors contributing to the high level of boredom among children was the inappropriate use of learning media. Since children are naturally inclined toward play, a collaboration between learning and play becomes an option worth considering. Learning media serve as an initial step in teaching, helping to improve the effectiveness of lesson delivery, message communication, and learning content (Wahid, 2018).

When designing learning media, several aspects must be considered, such as simplicity so that a child can easily and clearly understand it. The media should be designed in accordance with the topic, not overly complicated, and made using simple and easily accessible materials (Supriyono, 2018). Training in how to create and implement learning media with parental involvement is essential. Such training is expected to help parents improve their ability to use learning media, providing a solution to the learning challenges their children face. Especially with media involving play or other innovative approaches, these can capture the interest of students and encourage more enthusiastic learning at home. One such medium is an interactive board, which can serve as a learning tool for parents during the pandemic.

The target audience for this training is the parents of third-grade students at Al Huda 2 Islamic Elementary School in Kediri. The training is expected to make home learning more enjoyable, reduce children's boredom, and accelerate their understanding. This training program was chosen based on the importance of fun learning media for children during the pandemic. The interactive board as a learning medium offers innovation in the learning process. Using interactive boards or visual media presents children with a challenge in identifying the correct answers. Grouping images based on criteria fosters critical thinking skills, which need to be developed from an early age. Therefore, providing learning media that encourages children to ask questions and express their opinions is crucial for fostering critical thinking in children.

Method

Training is an activity aimed at developing skills or potential for specific purposes. The implementation of training in creating interactive board learning media serves as a means to enhance parents' knowledge and insights in providing enjoyable learning experiences for their children. The methods used in the training include: (1) Lectures; (2) Discussions; (3) Practice. The stages of the training consist of: (1) Planning and identifying the needs of the participants; (2) Designing the training activities; (3) Organizing the activities; (4) Implementing the activities; and (5) Evaluating the activities. The first stage is Planning and Identifying Participant Needs. Currently, parents are required to dedicate time to their children, as children are not yet fully capable of accessing and understanding various

explanations, materials, or assignments provided by educators (Wardhani & Krisnani, 2020).

The second stage is Designing the Implementation Stages, which includes determining the media to be used, tools and materials, and the training activity schedule. The third stage is Organizing the Activities, where the focus is on how parents of third-grade students at Al Huda 2 Islamic Elementary School in Kediri engage in the material presentation and in the practical creation of learning media, as well as the usefulness of the media created. The fourth stage is Implementing the Training, which will take place at Al Huda 2 Islamic Elementary School in Kediri, located at Jl. Ngadisimo Utara I No. 59, Ngadirejo, Kec. Kota Kediri, East Java. The training will last approximately two hours and will be conducted through Google Meet.

Figure 1. Location of Al Huda 2 Islamic Elementary School, Kediri
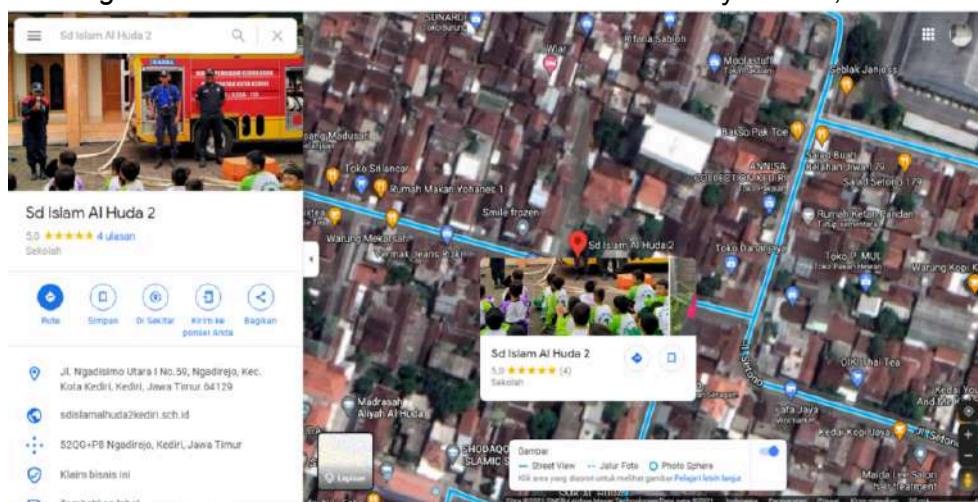
The evaluation model used is based on the model developed by Donald Kirkpatrick in 1954, consisting of 1) Reaction; 2) Learning; 3) Behavior; 4) Results (Nurhayati, 2018). Reaction measures the satisfaction level of the participants regarding the innovative learning media training. Learning involves several evaluation instruments to assess the program's effectiveness, such as the knowledge gained after the training, parents' understanding of the material, and the usefulness of the material in addressing problems. Behavior evaluates to what extent the material provided has been understood and applied by the participants. Results refer to whether the training outcomes align with the initially planned goals, such as improving parents' knowledge about innovative learning media.

Result

The interactive board learning media creation training was held at Al Huda 2 Islamic Elementary School in Kediri, located at Jl. Ngadisimo Utara I No.59, Ngadirejo, Kec. Kota Kediri. The training was attended by approximately 40 parents of third-grade students via the Google Meet platform. The training took place on Saturday, October 23, 2021, from 8:00 AM to 10:00 AM WIB. Before the hands-on interactive board creation, there was a presentation and a video demonstration of the steps to create the board. The presentation was conducted using PowerPoint. After explaining the background and objectives of the program, there was a detailed presentation on interactive board learning media.

Figure 2. Implementation of the Interactive Board Creation Training

Figure 3. Results of the Interactive Boards Created by Third-Grade Students' Parents

The image above shows the interactive board learning media created by some of the parents of third-grade students at Al Huda 2 Islamic Elementary School. The parents were very creative in decorating and designing the interactive boards to make them more appealing and motivate their children to learn.

In addition to the interactive board learning media, another learning medium was introduced through PowerPoint, which was a learning game using a snakes and ladders board. As a result of this training, parents were able to provide engaging learning materials at home, positively impacting their children's cognitive development. The interactive boards made by the parents were designed so that children could place pictures of animals, plants, and objects in the appropriate categories on the board. This method encourages children to begin thinking critically, ask questions, and express their opinions. When this process occurs during home learning, children will continue to learn and develop their critical thinking skills.

During the hands-on interactive board creation session, the parents were highly enthusiastic, carefully following each step. The interactive board was chosen as the training material because it is easy to make and uses inexpensive tools and materials. Additionally, the interactive board learning media provides a fun way for children to learn, beyond just

written materials. The use of colors and pictures in the interactive board creation process aims to spark the child's interest in learning, so there is no sense of coercion when beginning to study at home.

The main challenges during the implementation of the training were unstable internet connections and the lack of complete materials for some parents. To address these issues, the training materials were uploaded to the YouTube channel of Al Huda 2 Islamic Elementary School, Kediri. The success of this training was evaluated using Donald Kirkpatrick's model, starting with the reaction level. From the collected data, 93.90% of parents reported being very satisfied, while 6.10% were less satisfied. Based on this data, it can be concluded that the parents who participated in the interactive board learning media training provided positive feedback. This satisfaction level was influenced by the interest in and motivation to attend the training.

*Figure 4*. Evaluation Results of Parental Reaction to Training Satisfaction
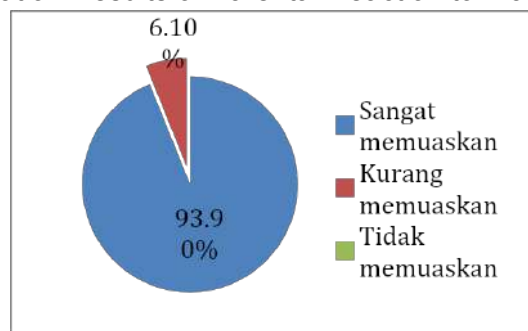
The next evaluation level is learning evaluation, which measures the learning outcomes from the training or assesses the level of transfer of learning that occurs from the training. This evaluation level relates to the understanding of the material provided to the parents of third-grade students at Al Huda 2 Islamic Elementary School in Kediri. To assess the level of material comprehension, evaluation instruments include the clarity of the material presentation, the alignment of the material with the children's learning needs, and the usefulness of the content delivered. This process is conducted with the expectation that parents' understanding can be clearly measured and that the material presented can be received and used as a reference in determining relevant learning media for children during the pandemic.

Figure 5. Learning Evaluation Results on Parents' Understanding of Interactive Board Learning Media
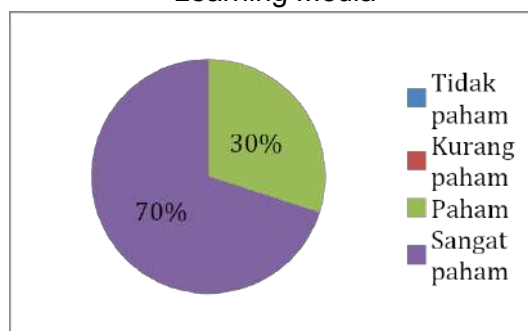

The graph above shows that 70% of parents indicated they had a strong understanding of interactive board learning media. This level of understanding was influenced by the clarity of the material presented by the facilitator.

Figure 6. Learning Evaluation Results on the Alignment of the Material with the Children's Abilities
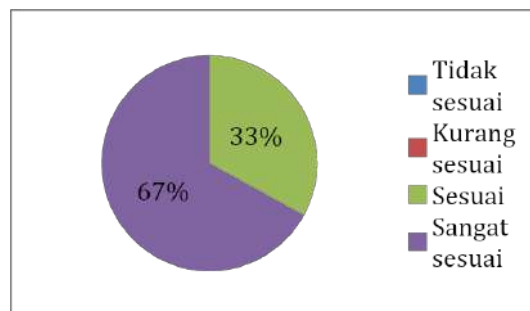

Every child has different abilities, and in this section, it can be concluded that the material was appropriate for the children's abilities. 67% of parents stated that the material was highly suitable for their children's abilities, while 33% said it was moderately suitable.

Figure 7. Learning Evaluation Results on the Usefulness of the Material in Providing Fun Learning Media for Children
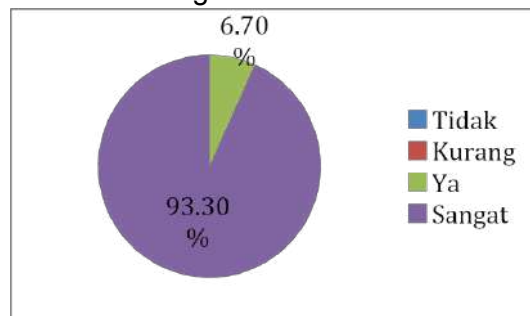
From the graph above, it can be concluded that the material presented has increased awareness of the importance of learning media. The role of learning media can influence a child's learning process— the more interesting the media, the more enthusiastic the child will be about learning.

Figure 8. Learning Evaluation Results on the Usefulness of the Material in Providing Fun Learning Media for Children
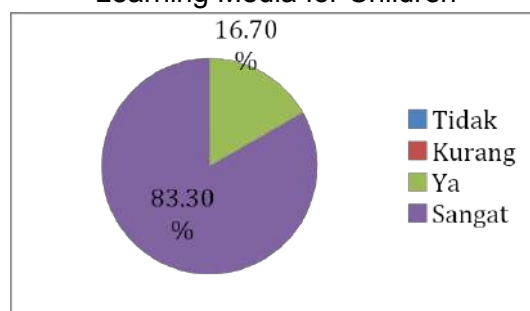
The learning evaluation results related to the usefulness of the material, as shown in figure 8, indicate that the content presented was helpful in providing or creating enjoyable learning media for children. This demonstrates that parents are motivated to provide the right learning media for their children to make the learning process engaging rather than boring.

The next evaluation is behavior evaluation, which relates to behavioral changes after participating in the interactive board learning media creation training. The success of this behavior evaluation is measured by the parents' interest in implementing the material that was presented. This evaluation also assesses the level of difficulty parents faced in creating the interactive board learning media.

Figure 9. Behavior Evaluation Results on the Ease of Creating an Interactive Board
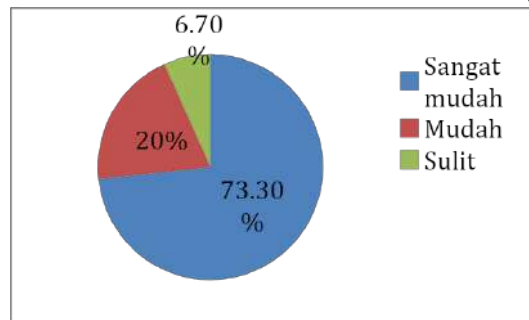

A total of 73.30% of parents who responded stated that the interactive board was very easy to make, 20% said it was easy, and 6.70% said it was difficult. The ease of creating the interactive board varies for each parent, depending on their readiness and interest in participating in the training. In the final instrument, most parents expressed a strong interest in implementing interactive board learning media.

Figure 10. Behavior Evaluation Results on Interest in Implementing Interactive Board Learning Media
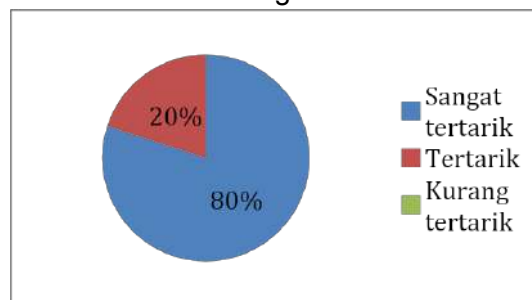
The final level is Evaluating Results, which measures the success of the training based on its impact on the child's learning process. One parent commented, "My child was very excited, teacher, really enjoyed making the learning media with me. They said it was fun and preferred learning with media like this" (R/24-10-2021). The graph below illustrates that all parents agreed that the interactive board was beneficial for enhancing their children's learning. This is because the learning process involves not just writing, but also images, colors, and the integration of games.

Figure 11. Result Evaluation on the Usefulness of the Interactive Board in Enhancing Children's Learning
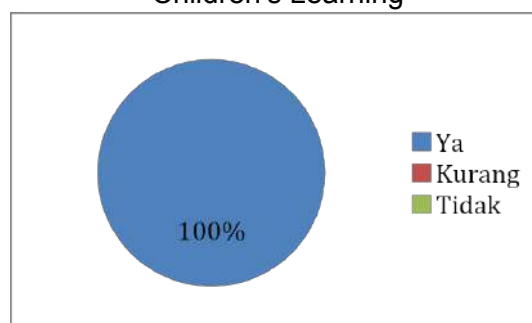
Discussion

In a learning environment, the use of media serves to influence the development of the learning process for students. The term media originates from the Latin word medius,

meaning "middle," "intermediary," or "facilitator." Around the 1950s, media was defined as audiovisual aids, as at that time, the role of media was primarily to lighten the teacher's workload in the learning process (Wahid, 2018). However, it is now more commonly referred to as learning or teaching media. The impact of learning from home has resulted in a high level of boredom among Indonesian children when it comes to studying. The use of inappropriate learning media has led to children becoming lazy to study, spending more time playing instead. Data obtained from a survey of parents of third-grade students at Al Huda 2 Islamic Elementary School in Kediri revealed that 97.1% believe that learning media significantly impacts their children's educational development. When the learning process causes children to feel bored, innovative uses of learning media are necessary. Several factors can enhance children's learning outcomes using learning media, such as making the home learning process easier and more engaging, increasing children's motivation and interest in learning, and promoting full involvement during lessons (Nurrita, 2018).

The appropriate learning media for children includes media that incorporates games or utilizes more dominant colors and images. The use of more dominant images than text has a positive effect on children's comprehension processes, making it faster. There are advantages to implementing visual media, including clarifying presentations, reducing limitations in observation, and providing concrete visual materials (Sukmawati, Fadillah & Afriyanti, 2013).

Interactive boards serve as useful media for providing innovation in the learning process. The incorporation of images and colors creates an appealing impression and can motivate children to learn even more. The use of illustrated media has benefits in stimulating children's thinking abilities and encouraging them to be more attentive in observing all aspects of learning (Yuswanti, 2015). An additional advantage of interactive boards is that children can interact with the components on the board, which aids memory retention due to the provided images.

If the learning process consists only of text and information delivery without feedback from children or parents, it results in what is known as the banking education model. This model represents an educational approach that involves merely receiving, noting, and storing information. Banking education erodes children's creativity, leading them to become more gullible. In this model, communication is absent; instead, there is a transmission of statements that children memorize and repeat (Freire, 1972).

The word "cognitive" comes from the term cognition, which means to know. According to Williams, cognitive refers to the way individuals behave and act to solve the problems they face. Brunner divides the development of cognitive behavior into three periods: the enactive stage, which means when individuals begin to understand their environment (Hijriati, 2016).

The next stage, the iconic stage, occurs when a child enters kindergarten, where they tend to imitate behaviors present in their surroundings. The third stage involves the use of symbols or symbolic thinking, where a child is typically at the end of elementary school or in junior high school. At this stage, a child can use language and can think, although still in an abstract manner.

Cognitive development in everyone is generally related to motor development. Cognitive development provides insight into the evolving thoughts of children and their functioning ability to think. Cognitive development is a process through which individuals can enhance their abilities to use their knowledge (Sembiring & Filtri, 2018). The selection of appropriate learning media for children can positively affect their cognitive development. Cognitive development involves activities that engage the ability to think and analyze problems being experienced. Learning media can provide children with opportunities to enrich their knowledge. This aligns with cognitive development, where learning media serves as a tool for delivering explanations or information about learning (Sutarmanto, Fadhillah, & Nazilah, 2013).

The training program targeting the parents of 3rd-grade students at SDI Al Huda 2 Kediri aims to enable parents to provide suitable learning media for their children and to innovate the learning process at home. Based on the training conducted to gather feedback from the parents of 3rd-grade students, the evaluation stage uses the model developed by Donald Kirkpatrick. The Kirkpatrick evaluation model was first recognized in 1959 when he wrote a series of four articles titled "Techniques for Evaluating Training Programs," published in Training and Development, the journal of The American Society for Training and Development (ASTD). There are four levels in the Kirkpatrick evaluation model: reaction, learning, behavior, and result (Nurhayati, 2018).

The reaction level is the lowest level in this evaluation model. The success of this level is assessed by the satisfaction of parents regarding the organization of the training, including the delivery of materials and all aspects of the training program. Parental satisfaction is also influenced by their interest and motivation to participate in the training. Interest serves as a motivation to engage in activities and affects three aspects of knowledge: attention, purpose, and learning level (Wang & Adesope, 2016). If interest and motivation are strong, parental satisfaction will also be high. High satisfaction levels make it easier for parents to understand the materials and practice them. The motivation of training participants provides different strengths, marked by effective encouragement and reactions or responses to achieve desired goals (Muhammad, 2016).

Regarding motivation, 40 parents of 3rd-grade students at SDI Al Huda 2 were very enthusiastic about participating in the training to provide enjoyable learning media for their children. The use of the Google Meet platform did not pose an obstacle, as it had been used in previous learning sessions. Reactions to the platform used are also important to ensure that the training process does not complicate things for the parents of 3rd-grade students. The tools and materials needed for creating interactive boards were easily obtainable and affordable for the parents.

Next is the learning level, where the success of the training program is assessed based on the extent of knowledge transfer that takes place. According to the evaluation forms, this training has made learning more vibrant than just relying on books, making the learning media more colorful. Children have also become more enthusiastic about learning and understand more quickly with the interactive learning media. Parents not only provide innovative learning media for their children, but this training activity also strengthens the bond between parents and children. Parents who accompany their children during the learning process at home positively impact their children's academic performance in addition to their learning with educators.

The selection of materials used in the training process also significantly affects the understanding of both parents and children. The living and non-living things have been tailored to the subjects taught in 3rd grade as well as the students' abilities. Parents can transfer the knowledge they acquire to their children; if the materials used are deemed difficult, the burden falls not only on the children but also on the parents. The aim is not merely to introduce living and non-living things, but also to train students in English vocabulary related to each item. Based on research from Brain Imaging technology at the University of California and divergent studies, the ages of 6 to 13 are considered the optimal time to maximize foreign language teaching (Maili, 2018).

After evaluating the reaction and learning stages, the next level is behavior, which focuses on the participants' desire to apply the knowledge gained for their own needs or for others. In the training that has been conducted, the parents of 3rd graders were very enthusiastic about applying interactive learning media for their children's education at home. The desire to implement this stems from their satisfaction with understanding the materials and the needs of their children. Especially in the current pandemic situation, where home-based learning requires parental support and guidance. Parents are facing challenges during the pandemic, particularly in fostering their children's interest in learning. This

undoubtedly hinders progress, as building children's motivation is crucial for achieving good academic results (Master & Walton, 2012).

The result level is the final and highest level in the Kirkpatrick evaluation model. The training program is organized to produce outcomes that can enhance creativity and quality, increase productivity, and provide appropriate learning media for their children. This stage serves as the evaluation process for the entire program that has been implemented. The results of the evaluation indicate that the materials practiced are beneficial for the children's needs. The training conducted and the objectives of the program have been clearly directed. The goal of the training for creating interactive learning media is to enhance the cognitive abilities of both children and parents in providing enjoyable learning resources for children.

Conclusion

The COVID-19 pandemic forced the education system, which was originally conducted face-to-face, to shift to a learning-from-home model. Learning media became a crucial first step in teaching, serving to enhance the effectiveness of the learning process, the delivery of messages, and the content of lessons. The appropriate use of learning media can have a significant impact on children's cognitive development. Cognitive development is the process through which individuals can develop their ability to utilize their knowledge. When learning media is designed based on the abilities and comfort of children, they are more likely to be enthusiastic about learning. Interactive learning media can be utilized by parents as a solution to provide an enjoyable learning experience for their children.

The training conducted on Saturday, October 23, 2021, at SDI Al Huda 2 Kediri, targeted the parents of 3rd-grade students. It can be concluded that parents recognize the vital role of learning media and have a high interest in using interactive learning media for their children's learning process at home. Evaluating using the Donald Kirkpatrick model shows that 93.9% of parents expressed great satisfaction with the training on creating interactive learning media. At the learning level, most parents provided positive feedback regarding their understanding of the material, its relevance, and the benefits of the materials presented.

Acknowledgements

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