

DEVELOPMENT OF CENTRAL LEARNING MODEL NATURAL MATERIALS THROUGH THE PAUD SCIENCE SCIENCE APPROACH IN THE LIMBOTO

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ABSTRACT:

This study aims to (1) provide a precise description of the implementation of the development of the Learning Center for Natural Materials through the Scientific Approach of Early Childhood in the Class B Tower of Science which is valid, practical and effective, and (2) to obtain a product that is the Learning Center Model Natural Materials through a Scientific Approach in Early Childhood in Paud Menara B Class Science are valid, practical and effective. This research belongs to the type of research and development (R & D) ADDIE model which consists of 5 stages, namely: (1) Analysis, (2) Design, (3) Development, (4) Implementation (5) Evaluation.

Learning Center Model of Natural Materials through Scientific Approach in the Science Tower PAUD developed are: (1) validity, where the Guidebook of Learning Center of Natural Materials through Scientific Approach in Early Childhood has an average validity of 3.40 (valid category), Program Semester has an average validity of 3.51 (very valid category), Weekly Learning Implementation Plan (RPPM) has an average validity of 3.47 (valid category), Daily Learning Implementation Plan (RPPH) has an average validity of 3.76 (very valid category). (2) The practicality of the learning model, analyzed using the observation sheet the ability of teachers to manage learning obtained percentage of agreement (PA) of 100%, the average value of 4 teacher centers is in the category of "good" while for the

observation sheet of teacher activity in the material center nature is in the category of "good" and (3) Effectiveness, where the Natural Resource Learning Model Guidebook through the Scientific Approach to the Science Tower PAUD Semester Program Program, Weekly Learning Implementation Plan (RPPM), and Daily Learning Implementation Plan (RPPH) in accordance with the assessment The teacher is said to be effective because $\geq 80\%$ of teachers give a positive response "very good" that is as much as 100% of teachers.

KEYWORDS: Learning Centers, Natural Materials and Scientific Approaches

INTRODUCTION:

Early childhood is a very important period or experts call it the golden age of development or a sensitive period to be given education, efforts are needed that are able to facilitate children in their growth and development in the form of educational and learning activities with the child's age, needs and interests besides that basic formation -Basic faith and devotion, as well as the formation of character / character, is very appropriate if done from an early age to jump-start this development potential.

Hosnan (2014) said the learning activities in the 2013 curriculum were directed at empowering all potentials of students so that they could have the competencies expected through efforts to grow and develop; attitude / knowledge, knowledge and skills / skills. The use of the 2013 curriculum as well as the use of

a scientific approach to learning models where early childhood makes the learning process more important than the results because children are high-level researchers and thinkers. Hosnan (2014) said there are stages that develop from the process of memorizing (remembering), understanding (understanding), reasoning (applying), analyzing (analyzing), evaluating (evaluating) and creating (creating). Scientific approach is expected to be more meaningful learning outcomes for students.

Based on the results of observations researchers can suggest that the tower of PAUD is the pre-eminent school for PAUD level in Gorontalo Province. Both learning and management so that researchers are interested in conducting research with the development of natural center learning model through a scientific approach.

THEORITICAL REVIEW:

a. Center, Natural Materials, Scientific Approach:

Sundari and Wismiarti (2014) centers of natural materials are centers that are rich with experience playing sensorimotor that stimulates all the senses of children in addition to two other types of play that is symbolic play and development. The center of natural materials will provide experiences – experiences that bring children to learn about science, mathematics, vocabulary, self-mastery, social and psychomotor.

The purpose of children playing at the center of natural materials is to support the early stages of playing children so that the stages of play according to the stages of development of his age. The scientific approach consists of:

Observing Kemendikbud, (2015) observing activities means using all the senses (sight, hearing, touch and taste) to recognize an object that is observed. The more senses used in the process of observation, the more

information is received and processed in the child's brain.

b. Ask (Questioning):

Hosnan (2014) suggests asking is important because it is a medium to gain knowledge by asking questions about information that is not understood from what is observed.

c. Gathering Information:

The Ministry of Education and Culture (2015) suggests that information gathering is a follow-up activity to ask questions that can be done by: Gathering information / data, collecting data can be done repeatedly on the initial footing before playing (opening) every day in different ways and collecting data from various source.

d. Associating:

The Ministry of Education and Culture (2015) suggests that the association process can be seen when children are able to mention similarities, mention differences, classify and compare.

e. Communicating:

Ministry of Education and Culture (2015) suggests communicating is the process of strengthening new knowledge / skills acquired by children. Communicating can be done in various ways, for example spoken language, movements and works.

B. SCIENTIFIC APPROACH:

The scientific approach is one of the approaches in developing ways of thinking so that children have the ability to reason obtained through the process of observing to communicate the results of his thought.

This is based on the thought of Piaget who said that "Children learn by building their own knowledge through the experience they

gain". Vygotsky believes that "The environment, including other children or adults and the media, really helps children in learning to enrich children's experiences. For this reason, the 2013 PAUD curriculum promotes children's learning in order to have competent attitudes, knowledge and skills which are the process of the results of children's investigations of their environment.

Planting attitudes is built through habituation and modeling. The development of knowledge and skills can be done through a scientific approach (for the inculcation of attitudes will be guided by separate guidelines). The scientific approach develops children's thinking abilities. The scientific approach is used when children are involved in play activities (including when learning science activities), as well as other activities, such as playing roles, playing blocks, playing literacy, or doing artistic activities.

The importance of the scientific approach implemented in PAUD is:

1. Encourage children to have the ability to think critically, analytically, and have the ability to solve problems.
2. Provide a more meaningful learning experience to children by encouraging children to observe, ask questions, gather information, reason / associate, and communicate.
3. Encouraging children to find out from various sources through observation and not just being told. Scientific Objectives for Early Childhood Education Keeper (1994) suggests the purpose of science learning for young children is as follows:
4. So that children have the ability to solve the problems they face through the use of scientific methods, so that children are helped and become skilled in solving various things that they face.
5. So that children have a scientific attitude. The basic things, for example: not making

decisions quickly, being able to see things from various points of view, being careful of the information they receive and being open.

6. In order for children to get knowledge and scientific information that is better and more reliable, meaning that the information obtained by children is based on appropriate scientific standards, because the information presented is objective findings and formulations and in accordance with scientific principles that shelter them. .
7. So that children are more interested and interested in living the science that is and is found in the environment and surrounding nature. Science learning for young children is focused on learning to know oneself, the natural surroundings and natural phenomena.

Learning Science in early childhood has several goals, including:

1. Helping young children to be able to recognize and foster a sense of love for the natural surroundings so that they realize the greatness and majesty of God Almighty.
2. Helps foster interest in early childhood to recognize and learn about objects and events in the surrounding environment.
3. Helps to attach aspects related to science process skills, so that knowledge and ideas about the natural environment in children develop.
4. Facilitating and developing an attitude of curiosity, perseverance, openness, criticism, introspection, responsibility, cooperation, and independence in his life.
5. Helping children to be able to use simple technology & scientific concepts that can be used to solve problems found in everyday life.
6. Helping children to be able to apply various scientific concepts to explain natural phenomena and solve problems in everyday life.

7. Assist children in the introduction and mastery of basic physics / science such as exploration / investigation, and simple experiments with various objects (water, wind, fire, and magnetism) Benefits of Scientific Learning What are the benefits of learning science? Alright for more details, let's discuss one by one.

RESEARCH METHODS:

This type of research that will be used is Research and Development (Research and Development) by describing the development process and the resulting product. The product of this study is a central learning model through a scientific approach in PAUD Menara Ilmu Age Group B (5-6) Years that meets validity, practicality and effectiveness. According to Chaeruman (2008) the development of the ADDIE model has 5 stages of implementation namely analyzing (analyzing), designing (designing), developing (developing), implementing (implementing) and evaluating (evaluating). The subject and location of this study were 60 students.

RESULTS AND DISCUSSION:

Research planning The development of the ADDIE model has 5 stages of implementation namely: Overview of the Implementation of the Preliminary Study of the Learning Center for Natural Resources through the Scientific Approach in Early Childhood Class B Ages 5-6 Years (Analysis).

In the analysis of development needs, researchers used the FGD method to solicit information from teachers, and mentors in PAUD Menara Ilmu. Information obtained includes: (a) learning at the Tower of Science this science has implemented a central system, there are four centers that have been carried out, each main activity has four main steps, (b) Tower of Science has no concept of how to develop the ability to observe, asking

questions, gathering information, reasoning and communicating the so-called scientific approach, and (c) the need for teachers for learning models as a guide in implementing this model, (d) there is a positive response and readiness to apply the learning center model of natural materials through a scientific approach to children early age. Based on the results of the analysis, it is considered important to implement the learning center model of natural materials through a scientific approach to early childhood.

1. Overview of Hypotetic Model Learning Centers of Natural Materials Through Scientific Approaches in Early Childhood in Class B (Design).

a. Philosophical Foundations of the Model:

The philosophical foundation of the model consists of the operational components of the floating learning center model of natural materials through a scientific approach to early childhood. The philosophical component of the model consists of; rational, objectives, scope, basic assumptions, and supporting operational models.

b. Platform for Operational Models:

The operational basis of the model is a component of the concept development model of learning centers for natural resources through a scientific approach to early childhood. The operational foundation aims as a reference and guide for teachers in implementing the model.

2. Results of the description of the Development of Learning Center for Natural Materials through Scientific Approach in Early Childhood Class B Paud Menara Ilmu.

The results of the development of the learning center model of natural materials through a scientific approach to early childhood class B that had been previously designed, then carried out content validity (empirical validity).

DISCUSSION:

A Results of the Implementation of Learning Center for Natural Materials through Scientific Approach in Early Childhood in Class B Paud Menara Ilmu (Application).

At this implementation stage, the researcher observes the interaction between students during play activities at each footing in the center activities that take place for every aspect of student learning activities. After applying the learning center model of natural materials through a scientific approach to early childhood class B, the following results are obtained:

1. Overall the observations of the activities of the teacher managing learning and the teacher using the tools as listed in Table 2 turned out that two observers agreed that each aspect was carried out with a percentage of agreement (PA) = 100%. For the ability of teachers to manage learning the average assessment of two observers obtained 3.46 results if the average results of observations from two observers were confirmed with the criteria of TKG managing learning, it was concluded that TKG in managing the learning model of natural centers through a scientific approach to children early age is in the criteria of "good" ($2.5 \leq \text{TKG} < 3.5$). As for the ability of the teacher to use the learning model the average rating of the two observers was 3.45. If the average results of observations from two observers are confirmed by the criteria of the feasibility of the learning model, then it can be concluded that every aspect of teacher observation using the learning model is included in the "good" category ($2.5 \leq \text{TKG} < 3.5$)
2. Nine indicators used in play activities in natural materials centers through a scientific approach to early childhood class B, the average learning development of students in the category of developing very well (BSB) get an average percentage of 91%.

3. The teacher's response to the learning model namely the Handbook, Semester Program, RPMM, RPPH all 100% responded "very well".

B. Evaluation Results of Learning Center for Natural Materials Center Through Scientific Approach in Early Childhood Class B (Evaluation).

The evaluation activity carried out is to make revisions / improvements according to the suggestions of the validators listed on each expert validation sheet for each learning model that has been designed (designed). In this process the researchers conducted a review (looking back) at the aim of this development research which is to develop the learning model of natural resource centers through a scientific approach in early childhood grade

C. The review was conducted aimed at adjusting whether the learning model that was developed was in accordance with the stages of learning development students and meet the criteria of practicality and effectiveness to be applied in classroom learning.

Based on the ADDIE model that has been developed in this study, then in the discussion section of the results of this study will be raised three things related to the development of learning models, namely (1) the achievement of research objectives, (2) special findings obtained during the study, (3) constraints encountered during the process of developing learning tools.

a. Achievement of Goals

1) Validity

Based on the results of the revision and evaluation by the validator stated earlier, it can be concluded that the model that has been developed (Handbook, Semester Program, Weekly Learning Implementation Plan (RPPM), and Daily Learning Implementation Plan (RPPH) as a whole has met the validity criteria.

2) Empirical Validation

Theoretically, the results of the validator's assessment of the learning center model of natural materials through a scientific approach to early childhood in class B stated that the learning model that had been developed was suitable for use in the learning process. While empirically, based on observations of the ability to manage learning by the teacher, the observer stated that the learning model was implemented well at the time of the trial.

Of the four indicators above, at the time of the research there were 3 aspects that had been fulfilled namely aspects (1) namely the learning development of students meeting 90% of the criteria of developing very well (BSB), (2) a positive statement from the teacher for each aspect that was responded to each component of the learning model obtained a percentage of 100%. This means that the learning center model of natural materials through a scientific approach to early childhood in class B that has been applied has effective criteria to be applied in the learning process, (3) the stimulus of the learning model applied is in the "High" category.

CONCLUSION:

The conclusions that can be drawn are as follows:

1. From the results of the needs analysis it is necessary to design a center learning model with a scientific approach especially in line with the development of the 2013 curriculum developing a scientific approach to teaching and learning.
2. The description of the design model of the implementation of the development of the Learning Center for Natural Materials through the Scientific Approach in Early Childhood Class B at Paud Menara Ilmu, namely:
 - a. Analysis, at this stage a needs analysis is conducted.

- b. Design (design / design), designing / designing the product concept model of learning center for natural materials in the application of a scientific approach in early childhood.
- c. Development, at this stage the product is developed in the form of a learning model that will be assessed by the validator / expert (validity test) as a product model.
- d. Implementation (implementation), tested the learning model products that have been developed, namely through the practicality of learning models and effectiveness analysis.
- e. Evaluation (evaluation / feedback), conducted a review (re-evaluation) the level of practicality and effectiveness of the model learning that has been developed at the implementation stage.

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