

Implementation Of Marine Thematic Learning In Early Childhood

Farida Samad^{1*}, Zulkifli Zam Zam¹, Jarudin³

¹Universitas Khairun, Indonesia, zulkifli.zamzam@unkhair.ac.id

Institut Teknologi dan Bisnis Bina Sarana Global, Indonesia, jarudin@global.ac.id

*Corresponding e-mail: farida.samad@unkhair.ac.id

Abstract: The research focused on the implementation of marine thematic learning in early childhood. Marine thematic learning is learning that uses marine themes to link some learning materials to provide experience and meaning to the children in the coastal area. This study was conducted in one preschool as a pilot school for marine education in 2019. The qualitative methodology was applied to explore in detail the marine thematic approach and strategies for organizing marine learning content in early childhood. Data are collected through interviews and analyzed using taxonomic analysis. Findings indicate that the marine curriculum implementation approach used a mutual adaptation method. The strategy needs to be more effective in developing lesson design with marine content concerning environmental conditions and it should be synchronized between assessments and learning outcomes. Therefore, teacher competencies need to be developed in the form of marine thematic learning enrichment. It is suggested that more research to explore in-depth aspects and content of marine science needs to be done in the future.

Keywords: Early childhood, thematic learning, marine learning.

INTRODUCTION

The necessity of marine education was recognized in the 1970s. National Science Education Standards were published in the USA and the lack of marine topics was recognized. To address this gap in school curricula, the concept of ocean literacy was introduced and developed to all levels of society including education. Around the same time, the first investigation on students' knowledge of marine issues were performed in the US, and recommendation about the urgent need to expose students to ocean issues (Mokos et al., 2020). Moreover, although students are interested in marine life and are familiar with terms such as currents, tides and waves, their understanding of these concepts is limited and confused. That is why by addressing children's limited conceptions in their exhibits and educational programmed, aquaria can foster an understanding of the environmental processes that support marine life, thus contributing to habitat conservation and species survival (Ballantyne, 2004). Such paradigm unintentionally makes the concept of maritime affairs has not been well and implemented in learning activities. Therefore, maritime content needs to be given to children from an early age in helping them develop the knowledge, skills and attitudes to preserve the environment , especially coastal ecosystems in the future(Syaraah et al., 2019).

Presently, the implementation of the maritime curriculum is one of the efforts to develop the spirit of sportsmanship because it aims to re-create an agrarian country, to support its culture and potentials. Many researches, McPherson et al., (2018); Sampono (2015); and Hidayati et al. (2020) argue that the marine concept has been limited and marginalized in the curriculum due to limited public knowledge of the principal of the seabed and not ready to make the right decision. For maritime education to be successful students must have good ocean literacy. Furthermore, Fauville et al., (2019) stated that ocean literacy is an understanding of the influences of the ocean on us and our influences on the oceans to live and act responsibly for the future(Susanta et al., 2021). In addition, early age children who are natural in their natural exploration have gone through scientific investigation procedures in the simplest context of the marine environment. Therefore, specific scientific literacy in young children living on the island will be meaningful if it is appropriate to the context of the environment in which they live (Matsumoto et al., 2017; Şentürk ,2017; Brennan et al, 2019).

In accordance with the stages of child development, characteristic of children learning and concept of meaningful learning, so children learning activity should be carried out thematic learning. Thematic learning itself can be defined as a scientific approach related to investigating certain phenomena to gain new knowledge was adopted in the 2013 curriculum. In this process, children are taught to engage in certain activities such as making observations, inquires, reasoning, being creative, and communicative (Nurissobakh et al., 2018). All these need to be structured in such a way that the diverse multipotentials, interests, intellectual, emotional, spiritual, and kinesthetic or physical motoric intelligence of students is developed optimally according to the distinctive stages of children's development in an integrated manner using a thematic approach (Farida, 2017; Klein & Knitzer, 2006). In addition, thematic learning was adopted because they generally see everything. Their physical development is inseparable from their mental, social, and emotional well-being.

The children's learning behavior is strongly influenced by themselves and the environment, and in this context, these two attributes are inseparable. On this basis, this learning approach creates an opportunity for children to actively participate in marine-themed learning activities based on their developmental age, which is from birth to 6 years, and set goals realized through the provision of educational stimuli to boost physical and spiritual growth as the readiness to further their education. Meanwhile, supposing these two processes occur consistently, the children are forced to embrace knowledge by interacting with their environment gradually (Faisal, 2015). Based on this reason, teachers need to understand the marine thematic learning method because it is believed to be more sustainable (Arianti, 2017; Fuad & Musa, 2017; Sulistiani & Mustami'ah, 2016; Widyaningtyas & Radiyono, 2013). Furthermore in early childhood who live in a marine environment, thematic learning needs to be more specifically related to the characteristic of marine area by combining teacher professional development and strengthening ocean-related topic in school curricula (Mogias et al., 2019; Oguma, 2021). It is considered successful when an exploration of specific topic becomes the driving force of learning. By participating in authentic events or exploring marine topics, students learn both process and the content of learning (Yasin et al., 2022). Principally, the implementation of marine thematic learning requires professional teacher who master the marine subject matter and instructional method and having broad maritime insight and able to take appropriate measures to achieve the goal of maritime education. Therefore, this research tries to explore marine thematic learning in early childhood.

METHODOLOGY

RESEARCH DESIGN

This article adopts qualitative research. Specifically, it uses a case study approach. This approach was chosen as it allowed the researcher to explore in detail the marine thematic approach and strategies for organizing marine learning content. The research site was a pilot PAUD that has implemented the maritime curriculum. The materials include organization, delivery, management strategies, and teacher competencies. Documentation was conducted to obtain data on teacher and student learning activities in the form of pictures, weekly lesson plans (RPPM), and daily lesson plans (RPPH), teaching materials, learning media, and assessments. To achieve this objective, we conducted interviews using a semi-structured interview guide. Each interview was conducted for approximately 60 minutes to obtain data on the implementation of marine thematic learning content. When using a qualitative approach, the aim is not to generalize the findings to a specific population, but to develop an in-depth understanding of the main phenomenon, thus, the researcher intentionally selects individuals as the sample in the study (Creswell, 2009b).

PARTICIPANTS

The phenomenon we wanted to study was teachers' inclination towards thematic-based pedagogy that teachers can develop. Therefore, we used in-service teachers who participated in thematic teaching as the research sample, as these teachers were familiar with the two contexts that were important for this study. The sampling technique was purposive sampling. The participants (n = 10) were principals from 10 PAUD institutions in Maluku and the participants (n = 20) were PAUD teachers from 10 PAUD

Education institutions. The participants gave informed consent. They were informed about the purpose of the study and invited for an interview at their leisure, and participation was anonymous and voluntary.

DATA ANALYSIS

Data collection techniques used are interviews and documentation. Interviews were conducted using a semi-structured interview guide. Research questions related to teacher competence in implementing thematic learning. The teacher's knowledge and skills in implementing thematic learning include the teacher's ability to understand the theory and principles of learning, the teacher's ability to organize the learning content and select the teacher's ability to deliver learning content, and the teacher's ability to manage learning. Data collected through interviews (questions) were analyzed in two stages. In the first stage, the data was analyzed using thematic coding analysis (Gibbs, 2018).

The idea of this analytical procedure is to identify parts of the text that express the same or similar meanings, to combine these parts into categories, and to determine the themes that emerge from these categories. In the second stage, we use the five factor categories defined by (Hayak & Avidov-Ungar, 2020) (pedagogical, personal, structural, technological, and social) as the lens of analysis, grouping the codes that emerge from the first stage in a meaningful and easy to manage. Analysis in both stages was carried out by the two researchers and authors of this paper. The first author is the principal investigator of the larger study; the second author is a thematic teacher. Differences in coding are discussed and when necessary, the codes are adapted or changed from certain categories, and/or data is classified with different codes. In addition, it is done using taxonomic analysis (Creswell, W. John & Creswell, 2018; Creswell, 2009a; Flick, 2012).

FINDINGS AND DISCUSSION

MARINE THEMATIC APPROACH

Based on the data from interviews and observation, it is evident that the implementation of marine thematic learning adopted a mutual adaptation approach. The principal stated that some adjustments were made concerning environmental conditions, such as coastal city characteristics, maritime history, and culture, including students' needs and demands for contextual development. In other words, a modified 2013 PAUD curriculum that partially refers to the maritime content was implemented by the government.

"... in my opinion, ma'am, it was adopted because before Indonesia's independence, our ancestors were known as a nation of sailors. However, when specifically analyzed, it was adapted directly from the government. For example, the 2013 PAUD curriculum was incorporated into that of the maritime (Principle Interview, October 7, 2021)."

According to the principal, because of the decentralization, schools were authorized to design curriculum, syllabus, and themes based on their needs by observing students' characteristics. Therefore, it is a modification of the standard one implemented by the government concerning early childhood education. However, due to limited resources, these institutions are still using a maritime curriculum from the government. B group teacher also stated that she used a mutual adaptation curriculum. The theme was adjusted to students' characteristics and the region's conditions because this Preschool is one of the pioneer institutions in North Maluku that implemented a maritime curriculum.

"Adapting maritime curriculum from the central government and also local adaptation (Teacher 1, Interview, October 8, 2021)."

This was confirmed from the analysis of the curriculum, and also discovered that the theme adopted in maritime education is different from the government compiled in the form of Weekly lesson plan

(RPPM) and Daily lesson plan (RPPH) (D1:D4) as well as applied in the four learning models used, namely natural materials, preparation, beam, and IMTAQ Centers.



Figure 2: Marine thematic learning activities

However, the form and composition are based on the instructions mandated in the 2013 PAUD curriculum guide. The application of the maritime-themed curriculum was developed in accordance with the pattern of marine thematic learning approaches, although it is not optimal due to the lack of educative activities or real-life experiences. Moreover, students participate in these tasks by working on the worksheets, and the assessment pattern is not in sync with the indicators and materials studied every semester. It was further revealed that not all parties understood the selected marine thematic learning implementation approach. Both teachers stated that they are still having difficulty implementing the maritime-themed curriculum because the indicators are adopted from the government while its application uses the marine learning theme. In this situation, one of them stated that:

“...organizing marine thematic learning content is minimal (Teacher 2 interview, October 8, 2021).”

All the interviews revealed that the implementation approach of a maritime curriculum developed in Preschool Ternate applied a mutual adaptation pattern. However, not all parties understood it, despite being in accordance with the provisions. The meso level involves maritime-based vision, mission, goals, and objectives. Meanwhile, at the micro-level, the curriculum is compiled in the form of a lesson plan (daily and weekly), and this serves as the teacher's guide in terms of carrying out the learning process based on the school's vision, mission, and goals. The curriculum used provides a better overview and guidance of marine-based learning programs related to planning activities involving media use, thereby enabling students to carry out certain tasks under the teacher's supervision rather than working on the worksheets. The developed curriculum uses a mutual adaptation approach, exhibits sufficient connectivity and consistency at the macro, meso, and micro levels in its implementation.

STRATEGIES FOR ORGANIZING MARINE LEARNING CONTENT

Based on the acquired data, it was revealed that theme selection and determination as well as the preparation of lesson plans were carried out by the Pembina 1 Preschool Ternate. The summary of interviews held with the principals and teachers are stated as follows: (1) selected themes are adapted to the characteristics of the North Maluku Province, specifically the coastal city of Ternate and the children's needs in terms of caring about the marine environment, and (2) marine themes are set and identified by the principal and teachers.

“We insert 11 themes in maritime activities and there are four centers in the school. (Principal interview, October 7 2021).”

“Anyway, adjust to the needs (Principal interview, October 7 2021).”

" Together with friends' teacher-designed it...(Teacher 1 interview, October 7 2021)."

"...designing themes and sub-themes with the approval of the principal (Teacher 1 interview, October 7, 2021)."

Marine learning contents started with the compilation of documents by a team of teachers together with the principal. The selected theme is also determined by a syllabus network designed by a team of teachers and vice-principals. The level of developmental achievement in each aspect is quoted from the content standards contained in Numbers 137 and 146 of 2014 concerning Early Childhood Educational Standards (Pendidikan & Kebudayaan, 2015). In accordance with the interview results, it was also revealed that the determination, allocation, and mapping of indicators was carried out based on the following steps: (1) determine in advance which indicators tend to be used in the 1st and 2nd semesters, (2) each developmental indicator is allocated 4 times in the 23 learning weeks of each semester, (3) they are placed in accordance with each aspect, and (4) balancing relatively 14 to 18 indicators per week in 1st semester and 8 to 12 of them in the 2nd one. These results are used to plan lessons that serve as teacher's guide in executing weekly and daily activities.

"The educational calendar of the 1st coach in the 1st semester has 20 weeks (Principle interview, October 7, 2021)."

"There are 5 themes in the 1st semester while in the 2nd there are only 6 of them (Principle interview, October 7, 2021)."

"... the closest and according to the children's needs (Principle interview, October 7, 2021)."

"...which is only 2 weeks, the longest is 5 weeks, the indicator is incomplete, therefore, just continue until it's finished (Principle interview, October 7, 2021)."

There are 37 effective weeks in a learning year. The number of effective days per week is 5, with each learning time per day lasting for 3 hours (180 minutes). Self-development, or 6.6% of extracurricular activities, is mainly carried out face-to-face for relatively 2 hours per week. The research time for 1 year is regulated in Pembina 1 Preschool Ternate education calendar. The results of interviews with teachers and documentation of several annual activities include visiting Tobololo beach.

"When you look at the calendar, there are 37 weeks, therefore it seems like this... (Principle interview, October 7, 2021)."

"They are able to design play activities...while the use of LKPD is reduced assuming, it is biased..(Principle interview, October 7, 2021)."



Figure 3: Application of methods or activities as well as the use of media and maritime learning resources

Both the weekly and daily plans and students' activity sheets were designed by teacher using marine themes. These were arranged by the center learning model, where students are grouped to work on the

same worksheet according to which is performed first. Structuring the academic environment is also part of the learning resources for maritime education. Paintings of sea, fish, crabs on the school walls, pasted pictures of various boats and oars types, and decorations using different seashells and fish scales arranged attractively serve as educative sources or media for the children. The interview results also show that there is still a lack of understanding between the school management and teachers concerning the organization of learning content related to the background for selecting a marine theme. Therefore, it was concluded that the implementation of this strategy in Preschool Ternate is not fully in line with the expectations and standards of the maritime-based curriculum. This is evident from several organizing processes, such as determining the theme and its background not being investigated in depth by teachers. In addition, the network of determined themes does not show any form of connectedness between developmental achievements, indicators, and unified themes. Therefore, there is no visible link or any form of integration, which implies that themes and materials are bound by the similarity of educative substances conveyed to the participants.

STRATEGY FOR DELIVERING MARINE LEARNING MATERIALS

Based on the results of interviews and documentation, the data obtained are: (1) they made and compiled a schedule and allocated a specific time to the learning activities ranging from annual, semester, weekly and daily tasks, (2) In the classroom, each teacher carries out learning processes according to the daily lesson plan (RPPH) which includes opening activities (08.00 to 08.30) singing "Naro Oti" and praying before learning, core ones (08.30 to 10.30) and invites the children to observe the tools and materials provided, asks for the colors and shapes, finds concepts, the grouping of tools and materials such as shells, and carrying out these tasks according to their interests. Activity 1-making equipment and fisherman's catch 'caping, boat, oar, fishing rods, and fish' and 2- forming letters into rowing words, (3) The implementation of indicators was achieved in accordance with the set targets meaning that all teachers carried out learning process in accordance with the time allocation planning in the daily lesson plan, (4) each prepares lesson notes and assessments based on their observations, students' performances, portfolio assignments, and anecdotal jottings, (5) the results of recording the assessment are summarized and reported to students' parents at the end of the semester. Feedback in the form of responses, suggestions and messages from parents is recorded. (4) each teacher makes notes of learning progress and assessments based on the observations, student performance, portfolio assignments and student anecdotal notes. (5) the results of recording the assessment are summarized and reported to students parents at the end of the semester. The ability of teachers to manage classes based on observations or class visits was concluded that they seem to have been able to manage their classes properly. This is evident from the tools, facilities, and resources for students' marine thematic learning. Besides, the class describes a pleasant atmosphere and their assessment is quite effective. Classrooms and learning resources have been arranged according to the needs of the marine theme, students do not continuously sit in the same chair rather they tend to move according to the play activities. Based on the data obtained earlier, teachers' ability to manage to learn is in accordance with the standard process and assessment of early childhood education and regulation. The results of interviews with the participants led to the following information relate to strategy for delivering learning materials

"Teacher was able to convey the content of the material using varying learning methods and is quite good (Principle interview, October 7, 2021)."

"According to the RPPH, there are initial activities, while the core is dependent on the RPPH...(Principle interview, October 7, 2021)."

"methods and media for the preparation of tools and materials (Teacher 1 interview, October 7, 2021)." *"They use personally made media (Teacher 1 interview, October 7, 2021)."*

"Ee.. the time was allocated because the initial and core activities lasted for 30 and 60 minutes respectively, however, in respect to the plays some children were still playing even after 60 minutes, therefore, a little more time was added, for them to complete this task" (Teacher 1 interview, October 7, 2021)."

"Eh.. you need to first understand and master the learning material (Teacher 2 interview, October 7, 2021).

It is evident that the preparation of the weekly and daily lesson plans is still not optimal. This is because there are still teachers who have not fully understood the marine thematic learning materials as well as their translation. The process of carrying out maritime-themed learning is a step in realizing certain concepts in the form of plays. The implementation of this approach involves 3 stages, namely opening, core, and closing activities. In the opening activity, teacher prepares preparatory exercises, including creating a conducive environment, ascertaining students are present and early to class, fostering their readiness to learn, creating a democratic atmosphere, motivating, and seeking their attention. In the core activity, teacher presents information that makes it easier for students to understand the subject matter because all methods and media applied are described. In the final or closing activity, teacher concludes the learning materials, carries out reflection, an assessment, and ends the lesson. The results of the reviewed lesson plan document include: (1) it had been prepared either individually or by a team of teachers, (2) The stated time allocation is in accordance with the subjects, (3) The learning objectives describe those of the marine thematic learning and are following the plans, (4) the selection of marine thematic learning methods daily is mostly in accordance with the needs and characteristics of the developed themes, (5) it largely reflects marine learning activities that optimize students' interactive abilities, and (6) the teaching media described in the lesson plans have greatly supported the achievement of learning objectives and are in accordance with the theme that relies on worksheets used during explanations or illustrations. Based on the analysis of the research data, it was concluded that the strategy for delivering learning materials needs improvement. This is evident in the selection of existent teaching methods that are not inconsistent with students' characteristics and needs, these are still less varied and seems to rely solely on worksheets, and the children's interactive session is centered on watching because various educative media do not support them. Some qualities that need to be developed are: (1) selection and understanding of active, creative, innovative, and fun learning methods, (2) the use of appropriate teaching aids or educational toys that support the process, and (3) synchronizing the selected method and the learning media (Sampono, 2015)

Based on the documentation review, this Preschool makes a recording of the entire progress and assessments based on the indicators for each aspect of development contained in the theme used for illustrations by teacher at the end of each lesson in the form of an album separate from the daily lesson plan. The interesting attributes concerning the recording of the student's assessments are the determination of learning outcomes in the 5 developmental aspects executed by the principal. The entire teachers adjust the assessment notes summarized in their monthly recap and draw conclusions. Determination of appropriate indicators with learning outcomes realized through meetings with both teachers and principal. The 3 aspects observed in the learning management strategy, such as the allocation of research time, making notes on learning progress, and class management, show that this approach implemented in this preschool is quite good. The institution allocated learning time in accordance with the demands of the kindergarten curriculum. In addition, teachers recorded students' learning progress and managed the classroom according to the learning needs.

DISCUSSION

The marine thematic implementation relates to concrete activities that need to be carried out and is a combination of various tasks involving media and setting the stages and duration for each interactive session held between teachers and students to achieve certain predetermined learning outcomes. In this research, it is analyzed from three aspects, namely (a) learning content organization, (b) material delivery, and (c) management strategies (Joni, 2009; Adam, 2003; Carr-Chellman, 2015). According to Reigeluth, its adoption has not fully fulfilled the set expectations and standards compared to the theory of learning content organizing strategies (Reigeluth & An, 2021). This is referred to as a structural strategy, a sequence of or a means to synthesize related facts, concepts, procedures, and principles. In the implementation of thematic learning, this strategy is important concerning how the selection of methods for organizing learning content revolves around one concept, procedure, or principle that is integrated into a theme or interrelated.

Teacher's ability to manage to learn is perceived from their competence to allocate learning time, record students' learning progress, and manage the class (Apriyanti, 2017; Hightower et al., 2011; Taniredja et al., n.d.). Marine thematic learning is difficult to implement because it requires adjustment and willingness to adapt. Teachers are required to be creative both in preparing learning activities for children and selecting developmental achievements and indicators. They also need to possess the ability to manage learning, thereby making it more meaningful, interesting, and fun (Kuntarto, 2019; Taniredja et al., and Surahman & Aziza, 2020; Panggabean & Himawan, 2016).

CONCLUSION

This research concluded marine thematic learning is a learning that uses marine themes to link some learning materials so as to provide experience and meaning to early childhood. This lesson emphasizes the students acquire scientific knowledge on the ocean through marine education. This preschool implementation a mutual adaptation approach. The existence of early childhood operational curriculum from the government including maritime-based curriculum. In addition, the strategy for implementing marine thematic learning viewed from two perspectives, namely marine learning content and marine learning materials to foster an interest in children at an early age. The marine sector for early childhood must develop so that it is more varied in preserving and advancing Indonesia's marine potential.

In conclusion, although the findings of the current study are encouraging, several limitations that may have affected the findings should be addressed for the future research. First, the study focused on a small number of students who constitute only one preschool implementing a maritime-based curriculum. Therefore, future research can replicate this study by focusing on a large number of preschools. This study was exclusive to exploring the issues in maritime learning implementation as addressed by teachers' competence. Future studies should also look at the impact of marine learning on children.

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