



(RESEARCH ARTICLE)



## Children health learning through Project Based Learning (PBL) in Kota Kinabalu, Sabah Malaysia

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### Abstract

Children who learn through Project-Based Learning (PBL) in preschool can be an environment that gives children the opportunity to gain wider knowledge to understand the reality of life and how to deal with it. This study aims to see the effect of the Project Based Learning (PBL) method on the development level of preschool children's health learning. This study used an action research design involving three boys and three-year-old girls from a preschool in Kota Kinabalu, Sabah. Data from observations, interviews and related documents were collected and analyzed narratively before and after the implementation of PBL. The results of the study found that the development level of children's health learning increased after being directly involved in the implementation of PBL. Findings also show positive behavioral changes. In addition, the study successfully gave positive implications to the need for preschool teachers to be exposed to the skills of the PBL method in order to create more effective teaching methods.

**Keywords:** Children; Health; Project Based Learning; Reality of Life; Positive Behavioral

### 1. Introduction

According to the Malaysian Education Blueprint 2023, preschool education is one of the main plans in the education system in Malaysia where holistic development is a priority for children's education and learning (Bakar, A. Y. A. 2023). Through the implementation of Project-Based Learning (PBL) in preschool, students' level of learning and understanding of a subject can be increased if they are directly involved and experience it naturally and continuously. Project Based Learning (PBL) was introduced by the Malaysian Ministry of Education (KPM) in 2006. Dogara, G., Saud, M. S. B., Kamin, Y. B., & Nordin, M. S. B. (2020) defined Project Based Learning as a systematic learning method that provides students with opportunities to improve skills and gain in-depth understanding. knowledge through project implementation, collaboration and 'hands-on' techniques. Project Based Learning begins with questions and problems that occur in the real world and through its implementation students have the opportunity to collaborate with teachers by applying what they have learned to produce a product that answers the questions studied or the problems to be researched. solved (Reisman et al., 2018; Shukri et al., 2019).

Through the process and involvement in teaching and learning activities, positive changes can be seen in children's learning. Learning can be obtained from past experiences or new experiences, whether known to oneself or through other sources, and then used to achieve the desired goals (Janius, N., Ishar, M. I. M., Bang, P., Sid, R., & Wong, G. 2023). Therefore, PBL regarding children's independent learning needs to be implemented from an early age to avoid undesirable events such as mastery of literacy, science and mathematics skills, social and emotional development, especially during the PBL process.

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Therefore, this research was conducted to identify children's learning through PBL through activities inside and outside the classroom under the guidance of kindergarten teachers. This is because research related to PBL-based learning for children has not been carried out in Malaysia (Janius, N., Hassan, Z. B., Atan, N. A., & Idris, M. D. B. 2018), especially in Kota Kinabalu Sabah. It is hoped that the research carried out can adapt and apply the Project Based Learning (PBL) method which focuses on the problems faced by children in preparing for the real world later.

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## 2. Literature Review

### 2.1. Children's Learning

Early childhood is a term that refers to the period a child is from birth to the age of eight. According to (Davis, J., & Elliott, S. (Eds.). 2023) 'The National Association for the Education of Young Children (NAEYC) or the National Organization for the Education of Young Children, the term early childhood refers to early childhood education which requires all educational programs such as providing treatment, care and guidance to children. children from birth to eight years of age. Early childhood education is very important in the growth and development of a child. It is common knowledge that if a child receives a quality basic education, it is believed that the child will continue to be successful in education which will have a positive impact on his or her life. graduate at a higher level and also his future career.

From the definition above, education is a holistic, integrated and balanced paradigm that influences the formation of a child's personality and personality. Indirectly, this shows that parents and educators are responsible for shaping children's lives by providing perfect and appropriate learning (Janius, N., Ishar, M. I. M., Yusof, Y., Bang, P., Sid, R., & Wong, G. 2023). Parents are the first examples or role models for children. What parents do will be their followers in the process of forming their child's behavior and personality.

In the teaching and learning process, all these aspects are interrelated. For example, children singing animal-themed songs will involve physical functions such as movement, emotional functions such as singing enthusiastically, spiritual functions such as living, and intellectual functions such as thinking apart from involving social and creative aspects, especially in groups. children who are starting to learn to hold a pencil. and writing on paper will try to form strokes before starting to write (Mohammad Aniq Bin Amdan, Naldo Janius, & Mohd Aidil Hazidi Bin Kasdiah, 2024). Later, children will move on to repetitive movements, forming words from one letter, combining letters for spelling purposes to create various standard spellings.

The changes that occur in children will always be different. A child always needs more or less time to achieve behavior change. The child may move forward and backward a little, then move forward again (Janius, N., Jahadi, N. E. H. B., Abdullah, S. N. L. B., & Ling, M. S. 2023). There are also children who do not follow this order because it is not appropriate to their situation and the child's development is also different.

In the PBL context, teachers should be wise in designing and implementing activities in a more creative and interesting way. Apart from that, in realizing quality teaching activities, teachers also need to carry out self-reflection in teaching. Reflective practice in teaching allows a teacher to evaluate their effectiveness as a teacher while encouraging professional growth and development.

### 2.2. Project Based Learning (PBL)

In research by Hawari, A. D. M., & Noor, A. I. M. (2020) it stated that many countries have implemented the Project Based Learning (PBL) approach since preschool level as a comprehensive learning method. Hassan, Z. B., Janius, N., Atan, N. A., & Idris, M. D. B. (2018) research also found that the PBL activities he carried out were effective in developing and improving creative thinking abilities in literacy, social and emotional aspects as well as stimulating children's imagination abilities. His research found an increase in student involvement in PBL learning because the activities carried out were well received and succeeded in developing children's creative thinking abilities as well as showing high student interest in the project assignments given and implemented.

Bell's (2015) research also shows a positive response to the PBL method where children are said to be more motivated because they are driven by curiosity through exploration. This finding is supported by Monica and Zamri (2020) where if the Project Based Learning approach activities are implemented, children become more focused, highly motivated and driven by curiosity. The research results of Lou et al. (2017) and Susanti et al. (2019) also found that children who underwent PBL showed better knowledge, attitudes and behavior compared to students who used conventional methods. In fact, the behavior of the group of students who underwent PBL when presenting project results was also considered better because they were more creative.

Apart from that, according to Ismawi, S. N. M., Ishar, M. I. M., & Janius, N. (2022), the PBL method which includes the use of technology shows an increase in children's motivation and focus on the learning activities carried out. Roslina and Zanaton (2017) also stated that PBP becomes more effective if it is integrated with technology accompanied by cooperative learning with friends. The Project Based Learning Method is also recognized as one of the best and innovative methods in the 21st century Teaching and Learning process (Kokotsaki et al., 2016; Mohammed, 2020).

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### **3. Research Methodology**

The implementation of this project took place over a period of 1 month during which teachers planned activities related to oral health, hand hygiene, healthy eating, physical and mental health, and personal hygiene practices. Through action activities, students produce products, presentations and reflections individually and in groups. The aim of the project is also to engage students in health and hygiene activities that can help them understand better practices and knowledge related to personal health. Student involvement, actions and reflections are observed, recorded and evaluated to see their impact on the level of knowledge of the students involved.

The sample selection of research participants was carried out deliberately, consisting of students who did not maintain their health. These are identified through observations of student behavior and through conversations about personal health. Observations and conversations were carried out every day for one month. The criteria for not maintaining personal health were set so that researchers could see changes in students' level of knowledge about personal health. Therefore, the participants in this research were selected so that they were able to provide useful and meaningful data to achieve the research objectives. From the results of observations and conversations conducted by researchers, three male students and three female students aged five years from a kindergarten in Kota Kinabalu, Sabah Malaysia were selected as research participants.

#### **3.1. Instruments of Research**

Observations, interviews and related documents have been used to evaluate the effectiveness of Project Based Learning on students' level of knowledge regarding personal health.

#### **3.2. Data Collection Procedures**

Through observations made before and during the implementation of PBP activities, researchers obtained data directly from students. Observations are carried out so that changes in student behavior can be identified and recorded. Video recording was carried out during observations inside and outside the classroom.

Interviews were conducted to help researchers find out knowledge, behavior, feelings, skills and how students interpreted what they learned before and during the implementation of PBP activities. Interviews are also conducted to help students produce reflections on their understanding and experiences through the information obtained. Interview findings also explain, and support data found from student observations or documents. This is because it is easier for students to talk, chat and provide information compared to providing more in-depth information in writing, so the data collection method is very suitable for preschool students. Each interview takes 15 to 30 minutes. Interviews were conducted after the activities were carried out. Audio recordings were also made during the interviews.

Scrapbooks and worksheets are prepared and implemented throughout the implementation of PBP action activities to see the level of student knowledge. The focus of this project is personal health. Personal health explored during project implementation was oral health, hand hygiene, healthy eating patterns, physical and mental health, and personal hygiene practices. The scrapbooks and worksheets produced and answered become data to assess students' level of knowledge regarding personal health. This is because data that cannot be extracted through observation and interviews may be found through document analysis. Students are asked to write notes their findings in a scrapbook to see their understanding and reflections on the topics studied. Student scrapbooks are also the result of interactions between students and the implementation of collaborative activities with other students, parents and other individuals who are felt to have good expertise and knowledge about personal health which can improve knowledge, practice and skills. Writing and illustrating in scrapbooks is done at school and at home.

#### **3.3. Data Analysis Method**

Data analysis was carried out when the data was first obtained. The data analysis process is also carried out continuously throughout the implementation of PBL action activities. Observational analysis of children's behavior was also carried out to determine the effectiveness of implementing Project-Based Learning activities on personal health.

Throughout the implementation of the project, students are encouraged to interact with their friends in completing assignments and activities to completion. Observation data was recorded and analyzed narratively.

Each interview conducted with children was audio recorded and the data was transcribed verbatim. After that, the transcribed data is read repeatedly so that researchers gain a deep understanding before the data is given meaning and categorized. Interviews are analyzed to see the child's mastery of knowledge about personal health and to see his ability to provide correct and accurate information. Evaluation is based on the accuracy of information, descriptions and examples related to the personal health topic studied. Presentation and question and answer sessions were also carried out so that researchers could determine the level of children's understanding and knowledge of what was presented and evaluate other related findings.

By using documents related to personal health, document analysis was carried out. Children's scrapbooks and worksheets were analyzed. Worksheets are given after each activity is completed. The time given is 30 minutes for learning participants to complete the worksheets provided. Throughout the completion of the worksheet, no guidance is provided. Analysis of scrapbooks and LKS results after implementing PBL activities was carried out to see the level of children's understanding and knowledge. The results of work, discussion of opinions and findings through internet searches are also used to identify the effectiveness of PBL action sessions on children's knowledge levels.

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## 4. Result of Research

The results of the study found that the PBL approach had a positive effect on the level of children's knowledge. children show good knowledge of what has been learned and implemented. Four knowledge related to personal health that the students showed through the results of observation, interview and document analysis.

### 4.1. Personal Hygiene Practices

Through the observation carried out before the PBL action activities, the children involved in this study were found not to wash their hands properly and did not take care personal hygiene. After the PBL action activities, all the Children showed a good knowledge and understanding of the meaning of personal hygiene. This finding is shown in the interview results which can be seen as below,

*"Personal hygiene means...I keep my body clean." (Child 1)*

*"Personal hygiene means clean, not dirty." (Child 5)*

In addition, Children can also express their personal hygiene practices through interview responses. Among the personal hygiene practices stated are bathing, washing the face, brushing teeth, washing hands and wearing clean clothes.

*"There are many things I can do to keep my body clean. Take a shower, wash your face, brush your teeth and wash your hands." (Child 1)*

*"I shower using soap, shampoo and water to keep myself clean." (Child 3)*

*"I always wash my face. Then I brush my teeth. Sometimes, I am also dental floss to maintain oral hygiene." (Child 5)*

*"Brushing your teeth and washing your hands is good personal hygiene." (Child 6)*

Children are also found to know the appropriate technique and time to brush their teeth and wash their hands.

*"I brush my teeth twice a day, in the morning and before bed." (Child 1)*

*"I brush my teeth twice a day. When I wake up in the morning and before I go to sleep." (Child 2)*

*"We have to brush our teeth for 2 minutes each time." (Child 5)*

*"I wash my hands before and after eating, after using the toilet and after sneezing." (Children of 4)*

*"I wash my hands before and after eating, after using the toilet, after playing with puppies and after playing with toys." (Child 6)*

The children also explained their knowledge of hand washing techniques and practices.

*"I wash my hands with soap and water before and after eat." (Child 3)*

*"Every time I wash my hands, I will use soap and then dry my hands with a clean tissue." (Child 6)*

*"Wash your hands with soap and water. Wash your hands for 20 seconds." (Child 5)*

*"If there is no water, we can use hand sanitizer. I have my own sanitizer in my bag." (Child 1)*

#### **4.2. Personal Health Practices**

Children who always bring snacks are seen bringing fruits as supplies to school after undergoing PBL action activities. Meanwhile, among the personal health practices stated by students are eating healthy food, exercise and emotional management. Here are some statements by students regarding the above.

*"My healthy plate has rice, grapes, carrots, tomatoes and chicken. All this is good for our bodies." (Child 1)*

*"We need to eat more fruits and vegetables to healthy." (Child 2)*

*"We can jog, run and play ball to be healthy." (Child 4)*

*"It's not good to be angry. If you feel angry, take a deep breath." (Child 3)*

*"When angry, take a breath. When you're sad, just cry." (Child 6)*

#### **4.3. The Importance of Keeping Clean**

Knowing the importance of maintaining hygiene creates awareness among children about diseases that can be encountered if they neglect personal hygiene. Here are some statements by students regarding the above.

*"If we don't brush our teeth, we will get bad teeth. Then we have to go to the dentist to have it removed." (Child 1)*

*"It is important to wash your hands so that germs die and do not fall sick." (Child 3)*

*"You can avoid Covid-19 if you wash your hands with often and correctly." (Child 6)*

*"If we are clean, we don't get sick easily." (Child 4)*

*"If you eat without washing your hands, you can get a stomach ache." (Child 5)*

#### **4.4. The Importance of Maintaining Health**

Children also know the importance of taking care of health. Among the importance they state is to stay healthy and facilitate movement.

*"Eat lots of fruits and vegetables to stay healthy." (Children of 4)*

*"If sick, we can't go anywhere, have to stay at home." (Child 2)*

*"If we are sick, we cannot go to school." (Child 6)*

Through the observation of behavior, the results of interviews and the results of Children's documents, the findings of the study clearly show that the level of knowledge of students related to personal health is good and supports the effectiveness of PBL.

## 5. Discussion of Research

The findings showing a good level of knowledge regarding personal health learning are supported by the results of Rajbhandari et al. (2018) who reported that 88.5% of children had good personal hygiene knowledge after being given the PBL approach. Because, through implementing PB in preschool, children's level of knowledge about something can increase if they are actively involved. The research findings are also in line with the research results of Fathen and Zaharah (2020), where children succeeded in demonstrating the methods, steps and ethics of personal hygiene after being taught and growing their interest in understanding the correct knowledge about personal hygiene. cleanliness. Kamtini et al. (2020) also emphasized that children tend to think and behave according to the attitudes and knowledge that are taught and applied according to their abilities.

Findings also show that children are more focused and motivated when participating in PBL activity action sessions. This is in line with the findings of Fadel, N. S. M., Ishar, M. I. M., Jabor, M. K., Ahyar, N. A. M., & Janius, N. (2022) who found that children can fully focus on lessons when the PBL approach is practiced. PBL also emphasizes cooperative learning with friends. Teachers and parents need to work together and support activities that can be done at home, such as searching for information via the internet. Through searching for information, children are encouraged to utilize technology for in-depth understanding and find out about health problems that affect the reality of their lives. Roslina and Zanaton (2017) stated that Project Based Learning becomes more effective when integrated with technology and combined with cooperative learning.

Positive healthy behavior and children's ability to answer most of the questions asked are in line with research findings (Amdan, M. A. B., Janius, N., Jasman, M. N. B., & Bin, M. A. H. 2024; Mekonnen, 2020) which found that the learning process became better and more effective. This also has a positive impact on overall learning which is proven to involve feelings, behavior and cognitive processes. Curiosity, communication skills and critical thinking are the focus of the PBL approach. Therefore, students are provided with proper guidance and encouragement to achieve PBL standards. PBL activities must be meaningful and related to the problem encountered in the real world (Janius, N. 2023). Personal health problems in children occur in the real world and should not be taken lightly. Personal health is very important and has a big influence on student development. Through PBL, students are given the opportunity to get to know themselves and practice personal health services according to their abilities

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## 6. Conclusion

The study has demonstrated the impact of PBL on children's learning levels regarding personal health. The findings show that the level of learning of preschool children related to personal health is positive and satisfactory after being involved in project implementation. Children demonstrate good learning regarding personal hygiene practices, personal health practices, the importance of maintaining cleanliness and the importance of maintaining health. At the same time, children also show positive behavioral changes in implementing personal hygiene and health practices. Therefore, it is very important to implement PBL in preschool, to provide sufficient knowledge and skills to children. Because, as a generation that will become leaders in the future, it is very important to ensure that students receive learning and change towards better behavior.

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## Compliance with ethical standards

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### *Disclosure of conflict of interest*

The author has no conflict of interest regarding the research, authorship or publication of this study.

### *Statement of ethical approval*

The researchers used the research ethics guidelines provided by the Universiti Kebangsaan Malaysia Research Ethics Committee (RECUKM). All procedures performed in this study involving human subjects were conducted in accordance

with the ethical standards of the institutional research committee. Permission and consent to participate in the study were also obtained from all guardians of the study participants.

### *Statement of informed consent*

I Mohammad Aniq Bin Amdan, voluntarily consent to participate in research conducted by Naldo Janius at UNITAR International University, lot129, Alam Mesra, Plaza Utama (phase 3), Sulaman, 88400 Kota Kinabalu, Sabah, Malaysia, understanding its purpose, procedures, risks, confidentiality, and my right to withdraw.

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