

Development and Evaluation of a Breathing-Focused Swimming Learning Model for Early Childhood Students at an Elementary School in Paramount

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Abstrak

Penelitian ini bertujuan untuk memperoleh wawasan dan temuan baru, menguji kebenaran pengetahuan yang telah ada, serta mengidentifikasi pengembangan model pembelajaran olahraga renang bagi anak usia dini. Jenis penelitian yang digunakan adalah penelitian kepustakaan (*library research*) dengan memanfaatkan data sekunder. Teknik pengumpulan data dilakukan melalui metode dokumentasi, sedangkan analisis data menggunakan analisis isi terhadap artikel-artikel yang relevan. Artikel yang memenuhi kriteria seleksi kemudian dirangkum berdasarkan nama peneliti, tahun terbit, desain penelitian, tujuan, sampel, instrumen yang digunakan, serta hasil atau temuan penelitian. Sebanyak 10 literatur nasional yang diperoleh melalui penelusuran di Google Scholar dengan kata kunci “model pembelajaran renang anak SD” dianalisis menggunakan pendekatan *critical appraisal* untuk mengidentifikasi persamaan dan perbedaannya. Dari keseluruhan jurnal, lima di antaranya tidak melakukan praktik pembelajaran renang secara langsung, melainkan membahas aspek motorik kasar, permainan modifikasi, dan kemampuan dasar anak. Hasil kajian menunjukkan bahwa model pembelajaran renang yang tepat dapat meningkatkan motivasi, mengurangi kejenuhan, serta memberikan dampak positif terhadap perkembangan motorik kasar dan kognitif anak. Selain itu, proses pembelajaran menjadi lebih menyenangkan dan partisipatif bagi anak usia dini.

Kata kunci: Pembelajaran kooperatif, pembelajaran inkuiri, keterampilan motorik, pendidikan jasmani, sekolah dasar

Abstract

This study aims to generate new insights and discoveries, to examine and validate existing knowledge, and to explore the development of swimming learning models for early childhood education. The research applies a library research design, relying on secondary data sources. Data were gathered through documentation techniques, while analysis was conducted using content analysis of selected research articles. A total of 10 national journal articles discussing swimming learning models for early childhood were identified through Google Scholar using the keyword “elementary school swimming learning model.” These articles were further evaluated through a critical appraisal process to analyze their main focus and findings, as well as to determine similarities and differences among them. Of the 10 studies, five did not directly assess swimming games but instead focused on gross motor development, modified games, and related abilities. The review highlights several key points: effective swimming learning methods can serve as practical references; appropriate models enhance student motivation and reduce boredom; and such approaches positively contribute to children’s gross motor and cognitive development while fostering a more engaging and participatory learning environment.

Keywords: Cooperative learning, inquiry learning, motor skills, physical education, elementary school.

1. INTRODUCTION

Education is one of the most important processes in every individual’s life and plays a vital role in shaping the character of a nation. Education seeks to actively foster students’

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growth through diverse approaches, including critical thinking, scientific reasoning, mental development, spiritual strength, self-discipline, and other essential competencies (Wangdra & Sanga, 2023). Cooperative learning is a conceptual framework designed to achieve the formulated learning objectives (Amalia, et al, 2023). According to Suprijono (2019), as cited in Nikmatussaidah (2021), the teacher assigns tasks and questions and provides materials and information designed to help students solve problems. Cooperative learning refers to a teaching method in which students work together in small groups and support one another in the learning process (Hamid, 2022). Meanwhile inquiry learning generally involves students in formulating scientific questions, proposing hypotheses to answer those questions, collecting and analyzing investigation results, developing reasoning about observed phenomena and scientific findings, and communicating their explanations to teachers and peers (Abdurrahman (2019). In this paper, the concept of inquiry-based learning refers to the view of Levy et al. (2009), as cited in Aji (2019), who define inquiry-based learning as a pedagogical approach in which exploration, investigation, or research activities are conducted to promote meaningful learning experiences. All teaching and learning activities, along with the resources provided, are designed to support the inquiry process.

One of the primary forms of education that should be provided from an early age is physical education and health education. Education is carried out through systematically planned physical and sports activities to achieve national education goals. In the learning process, both teachers and coaches must consider all aspects of a child's personality so that both the learning process and learning outcomes are equally important (Pane & Saragih, 2020). According to Khairuddin (2019), sport is an activity carried out to train the body so that it remains healthy and refreshed, and it also serves as a means of competition to achieve the highest rank or become number one. Physical activity in education is intended to improve students' motor skills and functional values, including cognitive, affective, and social aspects. Thus, through physical education activities, students are expected to develop both physically and personally in a harmonious manner.

Physical activity in education encompasses all aspects of educational development, including children's social and mental growth. Through physical education, students' psychomotor, affective, and cognitive domains can develop optimally. The cognitive aspect includes intellectual development; the affective aspect includes personal, social, and emotional development; and the psychomotor aspect involves neuromuscular activities, ranging from reflex movements to complex sports skills performance. Activities in physical education consist of games and sports, focusing particularly on gross motor movements and large muscle activation. The progress of a nation's education is partly the responsibility of educators. Teachers are responsible for guiding and educating students to achieve academic and non-academic success. Therefore, educators must have strong competencies and apply the best approaches for children. Appropriate teaching methods can create a productive and effective learning process that supports both students' physical and psychological development. In addition to appropriate teaching methods, another factor influencing success in learning basic swimming techniques is age group.

Swimming is a sport that involves complex skills and requires solid basic knowledge as well as regular practice in order to achieve effective and efficient mastery (Sistiasih (2020). According to Surahman (2019) swimming is a long-established competitive sport that has existed for many years. In Indonesia, for instance, swimming competitions are organized through various events such as the All-Indonesian Swimming Association (KRAPSI) Championship, the Provincial Sports Week (PORPROV), the National Sports Week (PON), and competitions conducted by the Ministry of Education and Culture. Swimming is also known as a fun water sport and is a medium for socializing and relaxing, (Prawira, Prabowo

& Febrianto, 2021). There are four main types of swimming strokes commonly practiced: freestyle, backstroke, breaststroke, and butterfly stroke (Indah & Rachman, A. 2024). The curriculum for Physical Education lessons is organized in a methodical way to teach swimming methods. Students in elementary school are typically introduced to freestyle (front crawl) first. Because it is thought to be the easiest to learn and has movements that mimic natural gestures like walking, this stroke is appropriate for young children or novices (Amri et al., 2022). According to Febrianto (2019), the goal of efficient swimming is to maintain constant momentum. The reasons or goals for swimming include education, recreation, and achieving and improving achievements (Paratam & Maidarman, 2020). When a swimmer exerts force on the water, it causes the body to accelerate and simultaneously. These events are designed to nurture and prepare athletes from an early age, particularly at the school level, to achieve excellence at both national and international stages. Swimming also teaches discipline, concentration, and breath control, which are beneficial in daily life (Naumann et al., 2020).

The cognitive capacities of older kids are often better developed, which affects how well they can take in and absorb information. Information absorption is easier at higher cognitive levels. Children's physical and emotional development must be taken into account while designing their physical activities. Age groups are usually used to classify physical activities: 7–8 years (Grades 1–2), 9 years (Grades 3), 10–11 years (Grades 4–5), and 12–13 years (Grades 6). But in reality, age-based traits are frequently ignored in physical education, especially in sports training. Despite obvious variations in mental, physical, and social traits, teaching methods are commonly generalized, with Grade III children receiving the same training as Grade VI students.

In practice, sports learning in elementary schools often does not consider age differences, as students from lower and upper grades receive the same instruction despite clear differences in their mental, physical, and social development. Since elementary students are generally aged 7–12 years, this study focuses on children aged 8–11 years (Grades III–VI). This raises the question of whether age differences affect learning outcomes. Theoretically, swimming can be introduced at ages 3–7, with specialization occurring at 10–12 years (Bompa, 1994, as cited in Kartikasari et al., 2023).

Therefore, different learning approaches should be applied according to age levels. The elementary school curriculum includes aquatic sports, particularly swimming. Swimming is a popular sport among students and the general public in Indonesia. It is widely practiced regardless of gender or age, leading to an increasing number of swimming facilities. This development facilitates early introduction to swimming, talent identification, and athlete development from a young age. Swimming is not only enjoyable but also serves as a recreational and social activity. As a water sport with various styles, swimming has long provided numerous benefits to humans. To support swimming education, improvements in facilities and infrastructure are necessary. Sports facilities and infrastructure are crucial pillars in supporting both learning activities and athletic achievement (Irawan, 2019). Early childhood swimming education. Furthermore, the swimming learning model for early childhood can increase children's enthusiasm and prevent boredom (Prawira, 2021)

According to Arhesa et al. (2020), barriers to learning swimming include inadequate facilities (62.5%), perceived risks (69.6%), anxiety (64.7%), fear (73%), and environmental influences (45%). Among these factors, risk perception, anxiety, and fear are greater obstacles than facilities and environmental factors. In addition to facilities, attention must also be given to talent identification, coaching quality, and training improvement. Continuous development from an early age is essential. Identifying talented young swimmers is often conducted in schools. Mastery of basic swimming techniques is crucial for successful performance. Students must understand and perform the fundamental movement elements of

swimming techniques correctly. Therefore, mastery of basic techniques must be prioritized in the learning process through systematic and continuous training. Providing appropriate methods for early childhood swimming education is essential. However, in practice, teachers often face challenges in teaching swimming. Many physical education teachers rely heavily on theoretical instruction without practical sessions, resulting in elementary students lacking practical swimming skills. Therefore, a comprehensive study is needed to identify effective learning methods in early childhood swimming education. Based on the background above, this research aims to conduct a literature review as a library study to identify effective swimming learning methods for early childhood by systematically analyzing relevant studies. The findings are expected to serve as a reference for future early childhood swimming education programs.

2. METHOD

Research Type

According to literature studies, it is a theoretical study, references and other scientific literature related to culture, values and norms that develop in the social situation being studied (Sugiyono, 2012 in Mirzaqon, 2019). The data used in this research are secondary data. Secondary data are data obtained not from direct observation but from previous studies conducted by other researchers. The secondary data sources include primary scientific reports published in articles or journals related to swimming learning methods for early childhood, as well as relevant books.

The data obtained from various literature sources were compiled into a unified document to address the formulated research questions. The article search strategy was conducted using selected keywords in Google Scholar, EBSCO, ProQuest, and other reputable journal databases. The selected keywords included "learning model," "swimming," and "early childhood." The selected articles were reviewed and summarized, including the researcher's name, year of publication, research design, research objectives, sample, instruments (measurement tools), and summary of results or findings.

The summaries were organized alphabetically and by year of publication in tabular form according to the specified format. To ensure clarity and accuracy, both abstracts and full-text articles were carefully read and analyzed. The summaries were then analyzed based on the research objectives and findings. The method of analysis used in this study was content analysis of journal articles.

Population and Sample

Population refers to the entire group of objects or subjects that become the focus of a study, whereas a sample is a portion of the population selected to represent the overall characteristics of that population (Sugiyono, 2013, as cited in Subhaktiyasa, 2024). According to Darmawan (2016), as cited in Roflin and Liberty (2021), population describes a large and extensive set of data within a research study.

According to Susanto et al (2024). The indicators within a population include: (1) Type of Population, which is the primary indicator in a study. The population may consist of humans, animals, plants, objects, or specific events related to the research problem, all of which can be identified as the focus of the study. The population consisted of all Grade I students at SD Paramount, totaling 40 students from two classes with similar characteristics. Each class was assigned to a different experimental group:

- a. Experimental Group 1: Cooperative learning model.
- b. Experimental Group 2: Inquiry learning model

Research Instruments

The instruments used in this study were:

- a. A Breathing Technique Skill Test in Swimming
- b. A Leg Kick Technique Assessment
- c. A Conceptual Understanding Test of the Gliding Movement

Learning Procedures

Group A (Cooperative Learning Model): Students learned breathing techniques through cooperative learning activities.

Group B (Inquiry Learning Model): Students learned through experimentation and exploration to discover leg kick techniques and gliding movements independently.

Data Analysis Techniques

Researchers analyzed data using documentation methods and analytical methods. According to Hasanah (2019) the documentation method is a data collection tool used to search for and identify things or variables in the form of notes, book transcripts, letters. The documentation method is used to complement data obtained from interviews and observations. Documentation is a data collection technique carried out by examining and analyzing previously recorded or documented materials (Saádi, 2025)

According to Afif et al. (2023), quantitative data analysis methods are computational and statistical methods that focus on analysis. Therefore, to use this method in quantitative research.

3. RESULT AND DISCUSSION

Result

According to Nur et al. (2020), in their article entitled "Early Childhood Cognitive Abilities in Aquatic Learning," explain that the results of the study indicate that the cognitive abilities of 5-year-old children trained through aquatic introduction at the UPI Pilot Laboratory Kindergarten, Tasikmalaya Campus, are generally 20% (2 children) in the very well-developed category, 20% (2 children) in the "developing as expected" category, and 20% (2 children) in the "beginning to develop" category. Meanwhile, the remaining 40% (4 children) are in the "not yet developed" category. These research results indicate that the cognitive abilities of early childhood children have not yet developed optimally, so various efforts are needed to address this.

Suryansah et al. (2020) in their article entitled "Fine Motor Training Model Through Aquatic Introduction to Cooperative Games for Early Childhood Children." Explaining that there is a relationship between Fine Motor Training through aquatic introduction to early childhood children. The results of the study show that the percentage of children who can throw a ball into a basket through aquatic introduction to cooperative games is 5% for group A and 4.5% for group B. On the second throw, group A was 7% and group B was 10%. On the second occasion, group A was asked to lift and say the letter they were holding; all participants recognized the letter and could say the letter they were holding. The same thing was done in group B. However, in group B, only one participant could not say the letter but had recognized the letter shown. In the first opportunity, the percentage of group A who had recognized the letter was 20%, and group B as

20%, was much as 10% group B while those who could not recognize the letter from group A were as much as 30% and group B was 30%, group B was group B much as 40%. After being given the second opportunity, the group A members were in group B, and the group was the members of the group A who could say and recognize the number was 100% the members of the group 100%, and in group B, it was as much as 90%.

Nur et al. (2019) in their article entitled "Basic Motor Skills of Early Childhood in Aquatic Learning." The results of the study show that the basic motor skills of early childhood in aquatic learning are in the category of starting to develop. This study uses a descriptive method. The subjects in this study were eight kindergarten students in class B aged 5-6 years (5 boys and 3 girls). The instruments in this study used structured observations, field notes, and documentation regarding children's basic motor skills learning "skills, skills, skills," which include water introduction, entering the swimming pool, breath control, body position, floating, arm push, arm rest, leg movements, skills, movements, movements, and combination movements. Motor skills can be classified based on the size of the muscles and the body parts involved, namely fine motor skills (Safitri, 2022).

Hernawan et al. (2020) in their article entitled "Development of a Water Introduction Model for Early Childhood." The results of research shows that (1) the water introduction model for early childhood significantly improves children's initial swimming abilities, (2) the results of validation tests by swimming experts show that 25 model items are suitable for application in the water introduction process for early childhood, and (3) the effectiveness of the water introduction model is indicated by the results of the pretest and post-test of children, which obtained t-count results of 21.67, which is greater than the t-table, and Sig (2-tailed) $5 < 0.05$ (α). This means that there is an increase between before and after treatment. Mujibuddin et al. (2020) in their article entitled "Swimming Breathing Learning Model through Water Games for Preschool and Kindergarten Students" (2020).

The results of this study conclude that the breathing learning model using tools and without tools through water games can be used in the teaching and learning process so that it can contribute to improving breathing techniques and skills.

Discussion

The results of this study are consistent with previous literature, showing that improvements in students' breathing techniques demonstrate the effectiveness of structured water games, whether using equipment or not, in enhancing swimming skills. This finding aligns with constructivist theory, which highlights the importance of active and meaningful learning experiences for children. In addition, the flexibility of applying both tool-assisted and non-assisted models makes this approach practical for schools or swimming centers with limited facilities, as teachers can adjust it according to available resources without reducing its effectiveness.

Overall, this study reinforces prior research emphasizing the value of playful, child-centered, and developmentally appropriate swimming instruction. The breathing learning model through water games offers an effective, engaging, and adaptable strategy to improve early childhood swimming skills, especially breathing techniques as a fundamental component of swimming ability.

4. CONCLUSION

Looking at the above research on the learning model of swimming sports in early childhood (literature review), which has been described in several important things, it can be concluded that it is, first, an identification of learning methods for swimming sports in early childhood by describing effective methods from several related studies in a coherent manner

so that they can be used as a reference for learning swimming sports in early childhood. Second, the learning model of swimming sports in early childhood can increase enthusiasm and prevent boredom in early childhood. Third, it has a positive influence on gross motor skills and cognitive abilities of early childhood, and the learning process is more enjoyable and participatory.

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