

Systematic Review of Physical Literacy in Aquatic Activity

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Keywords: Literacy, Swimming

Abstract: The expansion of physical literacy vocabulary can be done with active motion in land and water environment. Swimming is a basis for movement skills in aquatic activities. The systematic aim of this review is to ascertain the swimming variables in the topic of physical literacy research. Data analysis used meta-aggregation approach with Miles and Hubberman Model. Data were collected through Google Scholar in the period of January 2018 to January 2019. The results of the review of 7 articles indicated that swimming has not been used as the main variable in the topic of physical literacy research.

1 INTRODUCTION

The physical literacy movement popularized by the International Physical Literacy Conference inspires researchers to study the topic of physical literacy problems in aquatic activities. The researchers have the idea to conduct a systematic review so that the state of the art research of the topic is drawn.

Aquatic activities are included in Curriculum 2013 with a three-star code. The code means that aquatic activities can be held at school or not, according to the school's potential. This policy came about by considering the availability of swimming pools in each different school. In general, this policy gives physical education teachers the leeway not to be optimal in carrying out aquatic activities. On the other hand, aquatic activities are needed by individuals to master the basic skills and attitudes of safety in water.

Mastery of basic physical activity skills, such as resistance training, swimming, and cycling allows individuals to move actively (Hulteen, 2017). Furthermore, these skills are the basis for more specific movement skills such as marathon running, mountain biking, and swimming in the strait. Mastery of these advanced movement skills can be developed into a triathlon.

The basic skill of aquatic activity is swimming. Individuals who have physical literacy skills will not stop at mastering basic swimming skills. Individuals will explore themselves to develop other skills in water, for example diving, water polo, and swimming.

The results of the study are expected to be a reference for researchers in developing further Research Group research topics with current problems. On the other hand, researchers can utilize the results of research as lecture materials for aquatic learning and support for the implementation of swimming elementary courses.

2 METHODS

2.1 Research Design

A systematic review was used in this research to obtain information on the results of physical literacy research in aquatic activities.

2.2 Participants

Articles were collected with keywords Physical Literacy AND Swimming through Google Scholar's digital database. The number of search results included 5,170 articles. Furthermore, there were 7 selected articles which were published online in the period of January 2018 to January 29, 2019. The terms of the article being reviewed contain physical literacy and swimming words.

2.3 Data Collection

Researchers as research instruments perform content validation, namely the selection of articles based on the appearance of keywords in the content of the

article. Inclusion and exclusion criteria are presented in table 1 below.

Tabel 1: Inclusion and exclusion criteria.

Inclusion criteria	English-language academic research articles published online and included in the Google Scholar database
Exclusion criteria	articles containing physical literacy and swimming words

2.4 Data Analysis

The meta-aggregation approach was carried out in data analysis. Miles and Hubberman model was used to analyze this research data.

3 RESULTS

The results of a review of 7 articles have not shown specific studies of physical literacy in aquatic activity, particularly swimming. In general, physical literacy is the main variable of research. Swimming is only mentioned as an example of aquatic activity that can be done to develop physical literacy.

One effort that parents can do to develop children's physical literacy is to introduce outdoor physical activities that involve large muscles (Gehris et al., 2018). Swimming is an alternative physical activity that can be done outdoors. This activity is one of the recommendations for parents in developing children's physical literacy.

Swimming is an exception activity for using a pedometer in the research of Trembley et al (2018). The research of the level of physical literacy of children in Canada aged 8-12 years (Tremblay et al., 2018) was measured with a SC-StepRx pedometer (Steps Count, Deep River, ON, Canada). Pedometer is placed on the right waist of children. It is used for seven days, except when sleeping, bathing, and swimming.

To explore the way elementary school children in Ireland connect physical activity in shaping physical education experiences that aim at promoting lifelong participation. Tests given to individuals were in the form of drawing and writing. The results of children's drawings and writings will describe awareness, knowledge, and understanding of physical activity and physical education. Most girls draw activities that do not require the participation of others, for example walking with

dogs, swimming or riding horses (Parker et al., 2018). Swimming is one of the physical activities chosen by girls. On the other hand, boys tend to draw physical activities that involve teamwork.

Knowledge and understanding in encouraging physical literacy can be taught through the curriculum. Physical literacy learning in physical education can be transferred through core traditional activities, such as athletics, dance, games, gymnastics, outdoor education, and swimming (Cale and Harris, 2018).

The examination results of the curriculum of Physical Education and School of Sports or Faculty of Sport Sciences in Turkey show that the general subjects given are Gymnastics, Athletics, Swimming, Rhythm Education, Sports Psychology, Sports Movement and Skills Learning, Recreational Practice, Kinesiology, Sports Pedagogy, Educational Games, and Dance (Basoglu, 2018). The integration of physical literacy between semesters 3-6 can be very useful for the development of physical literacy (Basoglu, 2018).

To examine the effect of perception of physical literacy in predicting the success of coaching and leadership behavior from the perception of athletes in Hong Kong high schools. Each participant competed individually and in teams. The individual sports that were competed were field and track, table tennis, badminton, swimming, jumping rope, and trampoline. The team sports that were competed were basketball, soccer, dodgeball, ice hockey, handball, baseball, korfbal, and rugby. The conclusion of the research is the key to the success of the concept of athlete formation is the understanding of physical literacy (Li et al., 2019).

Swimming is an aquatic activity that can be introduced to children from an early age. Swimming with parents will strengthen the foundation of children's physical literacy, especially in aquatic activities. On the other hand, parents will learn from swimming trainers on how to develop children's motor skills in water (Nováková and Čechovská, 2019).

4 DISCUSSION

The heart of physical literacy is the development of physical competence. The three elements of motion that form the basis of physical competence consist of a wide range of motion vocabulary, memory and accuracy of motion, and improvement of motion quality (Maude, 2010). The expansion of motion vocabulary needs to be done with variations in the

motion environment. Motion is not only done in land, but also in water. Motion carried out in water has an ease, that is, the body seems lighter. However, the challenge of motion in water is a different breathing technique. Habituation is needed so that water is not swallowed.

Swimming is a basis for physical literacy in aquatic activities. In the period of January 2018 to 29 January 2019, there were no studies using swimming as the main variable in the topic of physical literacy research. It was Google Scholar-based article search. Research with physical literacy variables is increasingly diverse. Swimming is written in research as an example of one of the recommended aquatic activities.

5 CONCLUSIONS

Physical literacy is expected to expand the vocabulary of motion. Expansion can be done with a variety of environments to move. The aquatic environment has the advantages and challenges of motion. Supported body weight feels lighter being in water. However, breathing skills become a challenge at the beginning of learning motion. The foundation of physical literacy for aquatic activities is swimming. The results of a review of 7 articles indicated that swimming has not been used as the main variable in the topic of physical literacy research.

ACKNOWLEDGEMENTS

This article is a publication of a Research Group grant entitled Systematic Review of Physical Literacy in Aquatic Activity funded by DIPA UNY.

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