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Incorporating Outdoor Learning into School System in Indonesia: A Preliminary Study

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***Abstract*—Recently, there is an increasing awareness of the importance of outdoor activities in Indonesia which followed by the increasing popularity of nature schools and regular schools with integrated outdoor learning facilities. To understand the current status of outdoor learning implementation in elementary schools in Indonesia, a preliminary research in nature and regular elementary schools in Yogyakarta, Indonesia, was conducted. The main purpose of this research is to review current application of outdoor learning as part of school framework of current regular school education system in Indonesia and to determine the optimal way for improving the system. Qualitative and quantitative research was conducted by questionnaire with teachers and students as subjects. As the result, although outdoor learning is highly favored by the students, however, the application at selected schools is still hampered by facilities. Moreover, the design and quality of outdoor learning need to be improved. The result of this study could be used for further studies, especially on designing and integrating outdoor learning into school frameworks. Those researches can be utilized to develop a model for outdoor learning activities in elementary schools which meet the Indonesian National Education Standards.**

Keywords—school, outdoor activities, outdoor learning, outdoor facilities

I. INTRODUCTION

Technology not only leads to a new and innovative way for children's way of learning, but also affects children's preference to perform outdoor activities. Children with high exposure to digital technology spend less time outdoors. This phenomenon is mainly due to the limited public spaces, as well as, rapid urbanization, increase in street traffic, badly planned urban environments, pollution, pressures of educational accomplishment, and a lack of awareness about the importance of outdoor activities for children development and well-being [1]. Such changes certainly have profound repercussions on the psycho-physical development of children [2].

Being and doing activities outdoor are important parts of children healthy development, which is also critical for the development of children's motor and cognitive skills, interpersonal attitudes, and emotions [3]. Outdoor activities also critical for children to learn some skills such as developing ability for problem solving, imaginative and creative thinking, safety skills, social skills, bringing out initiative to understand basics in everyday life, being more appreciate to the environment and developing self-confidence through hands-on learning [4],[5].

Outdoor learning experiences are more remembered and attached for a lifetime. Integrating learning and outdoor experience, both through exercises and field trips, would provide relevance and depth in the experience, in ways that are difficult to achieve in indoor learning. Moreover when compared to indoor learning, outdoor learning is more enjoyable, challenging, various, adventurous, and could facilitate children to grow as confident and responsible person who value and appreciate landscapes, natural heritages and cultures [6].

School, which considered as second home for children, plays an important role for children development. Besides as a learning place, school should become a place for children to experience many things in their life, including the enjoyment of doing outdoor activities. Accommodating outdoor activities in school would not only fulfill children's needs of outdoor activities, but also help their development. As vigorous outdoor activities would promote physical health, as well as the growth of fundamental nervous centers in the brain, which consequently would improve children performance and learning in school [7],[8].

A. Technology and children

Nowadays, children are familiar with digital technology as part of interaction. Browsing the internet, playing online game, and using smartphone have been parts of their daily life and daily needs. While the development of technology provides more information, fun learning environment, and makes life easier, at the same time, it could also lessen the amount of physical outdoor activities. Some say that technology is liberating and empowering children, while there are many others who see it as destroying or betraying the essence of childhood [9].

Several studies and reports highlighted the potential benefits of information and communication technologies (ICT) for improving the quality of education [10]. However, children also need direct experiences through various outdoor learning activities.

B. Outdoor learning in school

It is necessary for children to have outdoor experience, especially in natural environment, so that they could learn to develop both self-confidence and the trait to manage risk effectively [11]. Through engaging in a direct experience and

being able to move freely as a method of learning, children could develop their imagination and push out the classroom boundaries that require them to have direct attention most of the time [12]. Outdoor experience also potentially supports the development of knowledge, concept, and skills from across the school curriculum, academic achievement, and makes an important contribution to students' physical, personal and social education, and also social and emotional intelligence [13].

Previous report also indicates the physical/behavioral impacts of outdoor learning. It points to the particular cognitive, affective, interpersonal/social, which are occurring through three kinds of outdoor learning activities: (1) fieldwork and outdoor visits; (2) outdoor adventure education; and (3) school grounds and community projects [14].

Despite the arguments in favor of learning outside the classroom, however there are some challenges in the implementation especially related to supervising a large group of students and providing them with the assistance they might need; ensuring that learning objectives are achieved; managing and planning the outdoor activities; costs, if needed; lack of detailed knowledge of the locality; safety of the students; and lack of necessary skills in students to be fully engaged in the outdoor activities [15]. Those factors must be considered when optimizing school facilities to support the integration of outdoor learning into the school frameworks.

C. Nature school and outdoor learning

Recently nature school or sekolah alam (in Bahasa Indonesia) has become more popular due to the increasing awareness of the importance outdoor learning [16]. Compared to classroom teaching with abstract concepts and approaches, real-life experiences through outdoor learning is easier to understand, and will lead children to be familiar and in love with nature, since young children tend to develop emotional attachments to what is familiar and comfortable for them [17]. The more personal children's experience with nature, with longer and more frequent access, the more positive effects gained, and the more environmentally concerned and active children are likely to become [18]. In general, nature school let their children to study from whoever, whenever, wherever, and to learn from their surrounding environment, and then make use of their knowledge in the real-life.

Some nature schools in Indonesia have already implemented concepts of outdoor learning in the school education system, for example by facilitating their students to do organic vegetables gardening, to care for the natural environment, to organize municipal waste management, etc. By applying those concepts and activities, the schools encourage students to be a problem solver and to develop critical thinking.

Despite the positive effects of outdoor learning, the number of nature schools in Indonesia is still low, and most of parents in Indonesia still prefer regular school. In this study we conducted preliminary study which results would be used to formulate strategy to improve the nature school systems in Indonesia and to make nature schools meet the Indonesian National Education Standards. We reviewed current application of outdoor learning in nature and regular schools in Indonesia, the compared the extent to which outdoor learning has been carried out, how the roles of teachers and students during the process, and what kind of obstacles are encountered in the implementation process.

The rest of this paper is organized as follow: Section II describes the proposed method. Section III describes the obtained result and following by Discussion in Section IV. Finally, Section V concludes this work and highlight future research.

II. PROPOSED METHOD

Quantitative and qualitative data was collected by questionnaire with teachers and students two elementary schools, one is a nature school (NS) the other is a regular school (RS), as subjects of this research. Students from class year 4 and 5 were assessed based on their experiences with technology, eagerness to do outdoor activities, the availability of outdoor facilities in the schools, and the outdoor learning conducted in the schools.

To get straight forward answers, the assessment in this study was carried out in accordance with the theory developed by Louis Guttman in [19], which consist of yes-no questions. In addition to that, to capture actual condition in subject elementary schools, in regard to the purpose of the research, open questions also included. Some interviews and observation were also being held as part of the research, but an in-depth interview and observation will be held after this phase of preliminary research.

The data was analyzed with data reduction, categorization and interpretation. By the end of this study, as part of the preliminary research, general perspective of outdoor learning in both schools was achieved. Various issues related to the needs of children to do outdoor activities were also discussed. Finally, school potentials to support outdoor learning was analyzed and proposed improvements were discussed.

III. RESULTS

TABLE I. GADGETS USAGE STATISTICS OF THE STUDENTS IN THIS RESEARCH (%) (RS=REGULAR SCHOOL: NS=NATURE SCHOOL)

No	Question	RS	NS
1	Ownership of gadgets	91	58
2	<1 hour screen time	28	67
3	>2 screen time hours	72	33

TABLE II. ACTIVITIES PREFERENCES OF THE STUDENTS IN THIS RESEARCH (%) (RS=REGULAR SCHOOL: NS=NATURE SCHOOL)

No	Question	RS	NS
1	Prefer outdoor activities	65	58
2	Prefer indoor activities	35	42
3	Like being in nature	91	96
4	Dislike being in nature	9	4
5	Prefer school activities within nature	100	100

The exposure of technology, especially gadget usage is often blamed as the reason why children prefer being indoor over doing outdoor activities. Based on data in Table I, as expected for students urban area, the gadget ownership among the students of RS is very high, at 91%. Most of

them use gadgets for over 2 hours per day, mostly for playing games, doing homework, browsing for information, and accessing social media. Meanwhile, much lower gadget ownership and usage were observed among students of NS at 58% and 33%. This might be due to the location of nature school in slightly rural area where lower preference of gadget usage was previously reported [20].

Interestingly, as shown in Table II, higher percentage of students from regular school in urban area with very high gadget exposure (RS) prefers outdoor activities when compared to that of nature school (NS). Furthermore, most students from both school's love nature and prefer school activities within nature. It is human instinct wanting to be closer to nature and especially for children, being in nature can lower their stress level [21].

TABLE III. ACTIVITIES PREFERENCES OF THE STUDENTS IN THIS RESEARCH (%) (RS=REGULAR SCHOOL: NS=NATURE SCHOOL)

No	Question	RS	NS
1	Science subjects	87	25
2	Social subjects	0	4
3	Language	0	13
4	Religion	4	8
5	Scout	9	50
	Total	100	100

Outdoor learning has been implemented in both schools. RS utilizes outdoor space as learning setting mainly for science classes. While in NS, outdoor learning has implemented for various subjects (see Table III).

The safety and quality of outdoor facilities is proven critical on encouraging students doing outdoor learning. In general, NS, a nature school, and RS, a regular school which currently on progress incorporating nature school in to its education system, provide basic outdoor facilities, such as school field, garden, sitting area, and school pond.

TABLE IV. POSITIVE ASPECTS OF EACH SCHOOL ACCORDING TO STUDENTS (%) (RS=REGULAR SCHOOL: NS=NATURE SCHOOL)

No	Question	RS	NS
1	Safe & comfortable environment	70	4
2	Teaching-learning process	13	17
3	Outdoor excursion (outbound, camping)	13	21
4	School holiday	5	58
	Total	100	100

TABLE V. NEGATIVE ASPECTS OF EACH SCHOOL ACCORDING TO STUDENTS (%) (RS=REGULAR SCHOOL: NS=NATURE SCHOOL)

No	Question	RS	NS
1	Long school hours	0	71
2	Lack of facilities	18	21
3	Full packed schedule	18	8
4	Unsupported by learning environment	30	0
5	Difficult access	17	0
6	Delinquent friend	0	0
7	No negative aspects	17	0
	Total	100	100

Interesting result was observed in the case of NS, despite its characteristic as nature school, the percentage of students who like doing outdoor activities is almost similar to the students who prefer to stay at home doing indoor activities, as shown in Table II and Figure 1. This might be related to the opinion of the students towards the positive aspect of NS. Only a little percentage of students was satisfied with the safety and quality of the school environment (see Table IV). Other factors related to schools that might discourage students from doing outdoor activities are lack of facilities, unsupported by learning environment, and full packed schedule with less break time (see Table V).

By having direct learning and direct experience, children were expected to gain more inherent knowledge in regards to the subject. Thus, further study for investigating the possibility of implementing outdoor learning in all subjects in elementary school, is needed. The next part of research would be important as it would be defining the aspect needed to design the guideline in which it could appropriately supporting outdoor learning in the school based on the school curriculum.

According to the teachers, the most problem that usually occurred during the teaching-learning process were the lack of focus or concentration and the low learning motivation of the students. Other problem that also occurred in the teaching-learning process is the lack of facilities and teaching props. Responding to previous findings Mirrahimi, *et al.* in [13], this problem could be reduced by having students indulge more in natural environment through outdoor learning. With the implementation of outdoor learning, students are expected to be more motivated and concentrated in the learning process and could also enhance their learning ability. The teachers also acknowledge that one of the methods they applied to improve students learning is direct learning/observation and discussion.

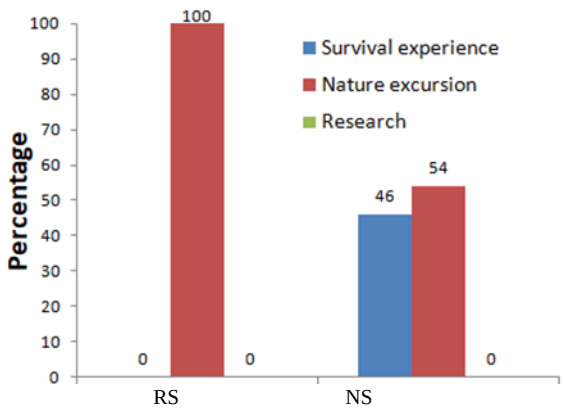

Fig. 1. Outdoor activities expected by students

The example of outdoor learning expected by students is nature excursion chosen by most students in this study; followed by survival experience. Interestingly, school vision might affect students' learning perspectives and outdoor activities preferences. For example, the survival experience was only by the NS students. This might due to their extensive exposure to the natural environment. This is amenable with previous findings White in [22]; where it is natural for children to use nature as their playground.

IV. DISCUSSION

Based on the results of this study, the development of technology, which offers more choices in indoor playing

with gadgets and games, only slightly affects the desire of children to do outdoor activities. However, the familiar setting of outdoor activities, for example in school learning environment, is needed in order the children to feel comfortable. In that case, even children who feared nature eager to do outdoor activities. Amenable with previous findings about the need to do outdoor learning for children development as White in [22], Dillon, *et al*, [23]; O'Brien & Murray [16]; where school is currently the most appropriate institution to provide outdoor and natural setting for outdoor activities.

Some schools in Indonesia already applied outdoor learning for some school subjects. However, in current setting the outdoor learning is still not optimally utilized. According to the results of this study, there are still some issues in nature school in Indonesia, related to the schedule management and lack of facilities.

Furthermore, the results of this study can be utilized to develop an outdoor learning model in elementary schools so that schools can achieve the Indonesian National Education Standards (*Standar Pendidikan Nasional*). National Education Standards itself aimed at ensuring the quality of national education in the context of people's life and character development and to establish a dignified civilization which is planned, directed and sustained in accordance with the local, national and global demands. Two components of the National Education Standards, the educational process standards and school facilities and infrastructure standards can be achieved effectively through innovation in outdoor learning at schools.

Educational Process Standards could be achieved through the development of interactive, inspiring, fun, and challenging ways of outdoor learning activities. Such activities could motivate children to actively participate and provide enough space for children to develop creativity, initiative and independence in accordance with their talents, interests, physical, and psychological development. Furthermore, in the learning process, teachers will lead students by example. Each education unit will also plan, asses, and supervise the learning process to achieve an effective and efficient learning process.

Simultaneously, schools will not only provide facilities which are necessary and essential for the learning process, such as furniture, educational equipment, educational media, books and other learning resources; and also, infrastructure such as classroom, laboratory, cafeteria, etc. but also provide outdoor environment such as herb garden, school field, and other outdoor facilities that could also support the learning process. By providing supporting facilities for outdoor learning, Facilities and Infrastructure Standards of the school will be optimally planned and fulfilled.

V. Conclusion and Future Work

This study has presented a preliminary study in incorporating outdoor learning into school system in Indonesia. The result of this study could be used in designing and integrating outdoor learning into school frameworks. They can be utilized to develop a model for outdoor learning activities in elementary schools which meet the Indonesian National Education Standards.

Further research is needed on how to integrate outdoor learning into school frameworks, along with how to utilize current facilities or to extend outdoor facilities in current school environment and to determine factors which influence children on doing outdoor learning and how to manage it. Schools must play an active role by not only providing spaces and facilities, but also by designing outdoor learning systems and improving school frameworks.

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