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Promoting "Learning through Play and the Environment" in Early Childhood Education in Cambodia

Improving ECE through the composition of a classroom environment, reading promotion, and collaboration with nursery school/kindergarten teachers from Japan

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Shanti Volunteer Association

Education and Development Research Papers

Shanti Volunteer Association (SVA) is a Japan-based NGO founded in 1981 with relief projects for Indochina refugees. It provides development cooperation in the fields of education and culture in the Asian region, humanitarian actions in Japan and abroad, fair trade, policy advocacy on international cooperation, and global citizenship education. Education is not only a means of economic and social development, but also one of the fundamental human rights and a process of empowerment. Education is a sector as well as a necessary element common to other sectors and all areas of human life, such as agriculture, industry, medicine, welfare, and health. Education is essential to ensure people's participation in the process of development. The Education and Development Research Papers are published for the purpose of stimulating discussion among those involved in international cooperation for the improvement of educational cooperation projects. It provides insights, ideas, and analyses from the experience of our activities. The views expressed by each author are not necessarily the official views of SVA.

Note for the English version

This paper was originally published in Japanese in January 2020, as one of the "Education and Development Research Papers" by the Shanti Volunteer Association (SVA), mainly targeting the Japanese readers who are engaged in or interested in international education development or early childhood education. This English translation version is developed aiming to reach the global readers interested in the topic.

To make this English version more reader-friendly, the author/translator made several revisions from the original Japanese version by adding the executive summary, table of contents, the abbreviation list, and Figures, among others. The structure of the sections and subsections is slightly revised to make it more organized and easier to follow. The author also added explanations on some points which seemed insufficient in the original Japanese version. Finally, some references, of which links were no longer available, were removed, or some Japanese reference documents were switched with English reference documents where possible.

The author

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Executive Summary

This paper introduces the experience of the early childhood education (ECE) project in Cambodia, implemented by the Shanti Volunteer Association (SVA).

SVA, a Japan-based international NGO, implemented an ECE project as a JICA Grassroots Technical Cooperation Project for approximately 3 years from 2016. With the support of nursery school/kindergarten teachers from Japan, SVA made a series of inputs to 42 target preschools in Battambang province in Cambodia.

Informed by the concept of "Learning through Play and the Environment", which is commonly practised in Japan, SVA implemented activities such as the composition of a classroom environment and reading promotion activities like storytelling. In cooperation with the teachers from Japan, SVA also organised study visits to Japan and technical support sessions in Cambodia for the government officials and model preschool teachers who played the role of trainers in the project so that they could have a comprehensive understanding of "Learning through Play and the Environment".

As a result, target preschool teachers started to improve their classroom environment and tell stories to children, which led to positive changes in children's behaviours and attitudes, such as motivation to come to preschool, tidying up and hygiene habits, interest in reading, and school readiness. Furthermore, "Learning through Play and the Environment" was reflected in the new ECE curriculum of Cambodia in 2018.

In this paper, the author closely analyses the causal relationship between the project interventions and these positive changes in children based on the data from the terminal evaluation survey of the project and presents the "Theory of Change". The analysis shows how a series of project interventions enhanced cognitive and noncognitive skills, as well as children's basic sense of trust and healthy lifestyle habits, which eventually contribute to school readiness.

Lastly, the paper discusses lessons learned from the project, such as the importance of child-initiated learning, material support for the composition of a classroom environment, localization of expert knowledge, cooperation with multi-level stakeholders, and the role of national staff members.

List of Abbreviations

ECCE	Early Childhood Care and Education
ECD	Early Childhood Development
ECE	Early Childhood Education
DOE	District Office of Education
JICA	Japan International Cooperation Agency
MoEYS	Ministry of Education, Youth, and Sports
NGO	Non-Governmental Organization
POE	Provincial Office of Education
SDGs	Sustainable Development Goals
SMC	School Management Committee
SVA	Shanti Volunteer Association
TTC	Teacher Training Centre

1. Introduction

Early childhood education (ECE)[1] has been recognised as an effective means of promoting the healthy development of children and breaking the cycle of poverty. The Sustainable Development Goals (SDGs) also list access to quality early childhood development, care and pre-primary education as one of Goal 4: Education.

Shanti Volunteer Association (SVA), a Japan-based international NGO, implemented a project for "Quality Improvement of Early Childhood Education at State Preschools[2] in Battambang Province, Cambodia" as a JICA Grassroots Technical Cooperation Project for approximately 3 years from January 2016 to February 2019. The author served as the project manager for this project. The project aimed to improve the quality of ECE at 42 state preschools in Battambang Province, Cambodia. SVA implemented a series of activities based on the concept of "Learning through Play and the Environment", which is commonly practised in Japan, with nursery school/kindergarten teachers from Tenryu Kohsei-kai, a social welfare corporation in Japan[3]. The project consisted of activities such as the composition of a classroom environment, reading promotion activities like storytelling[4], and study visits to Japan for government officials and preschool teachers. As a result, the target preschool teachers enhanced their skills, and children improved school readiness[5], as confirmed in the terminal evaluation of the project. The Ministry of Education, Youth and Sport (MoEYS) in Cambodia also recognised the achievement of the project and the concept of "Learning through Play and the Environment" was reflected in the ECE curriculum updated in June 2018.

In this paper, the author introduces the experience of SVA's ECE project in Cambodia as an example of international cooperation projects in the field of ECE and presents the findings identified through the project. Following this first section, the second section of this paper reviews the literature about the importance of ECE and the concept of "Learning through Play and the Environment". Thirdly, it establishes the contextual background of Cambodia by describing the socio-economic situation and the challenges in the ECE sector. The fourth section details the project activities, such as the

[1] There are various terms referring to education, care and other support in early childhood, such as early childhood development (ECD), early childhood care and education (ECCE) and early childhood education (ECE). This paper predominantly uses "ECE" because this term was commonly used by the Ministry of Education, Youth and Sport (MoEYS) of Cambodia, and the SVA Cambodia Office followed the same. Also, the SVA project mostly focused on the educational aspect of early childhood. However, ECD or other terms are used for citations from other literature or when deemed necessary.

[2] "State preschools" are public preschools in Cambodia. In this paper, "preschools" refer to "state preschools" unless otherwise indicated.

[3] A social welfare corporation running 16 nursery schools/kindergartens in Shizuoka prefecture in Japan. Established in 1950. http://www.tenryu-kohseikai.or.jp/

[4] In this paper, "storytelling" includes picture book reading, Kamishibai (paper theatre) performances, storytelling using materials like apron theatres, and simple storytelling without any books or materials.

[5] School readiness is the degree to which a child is prepared to learn and succeed in school (Ackerman and Barnett 2005, cited in Naudeau et al. 2011, p35).

composition of a classroom environment, reading promotion activities like storytelling, and the promotion of "Learning through Play and the Environment" in collaboration with nursery school/kindergarten teachers from Japan. Fifth, this paper analyses the impacts on children and the causal relationship with the project interventions based on the data obtained from the terminal evaluation survey of the project. Finally, this paper discusses the challenges and the lessons learned from the project.

2. Significance of ECE and "Learning through Play and the Environment

2-1. Why does ECE matter?

The promotion of quality early childhood development, care and education is stated in Target 4.2 under SDG's Goal 4. Also, many studies have demonstrated the importance of early childhood in human development and the effectiveness of early childhood development (ECD) investments (Naudeau et al. 2011).

First of all, early childhood is the period when the brain develops most rapidly, and developmental delays that occur in early childhood are difficult to make up for in subsequent developmental stages (Heckman 2008, Shonkoff and Phillips 2000, cited in Naudeau et al. 2011, p.38). Also, human development is greatly influenced not only by genetic factors but also by environmental factors, such as the quality of the environment surrounding the child and the amount of stimulation and learning opportunities the child receives (Fernald et al. 2009, cited in Naudeau et al. 2011, p.36). However, poor and otherwise disadvantaged children are more likely to receive poor care and education at home (Naudeau et al. 2011), and the delays in physical, language, cognitive, and social-emotional development in early childhood can hinder their smooth transition to primary education and lead to achievement gaps and higher rates of repetition and dropout over the years (Feinstein 2003, Pianta and McCoy 1997, Currie and Thomas 1999, cited in Naudeau et al. 2011, p.37).

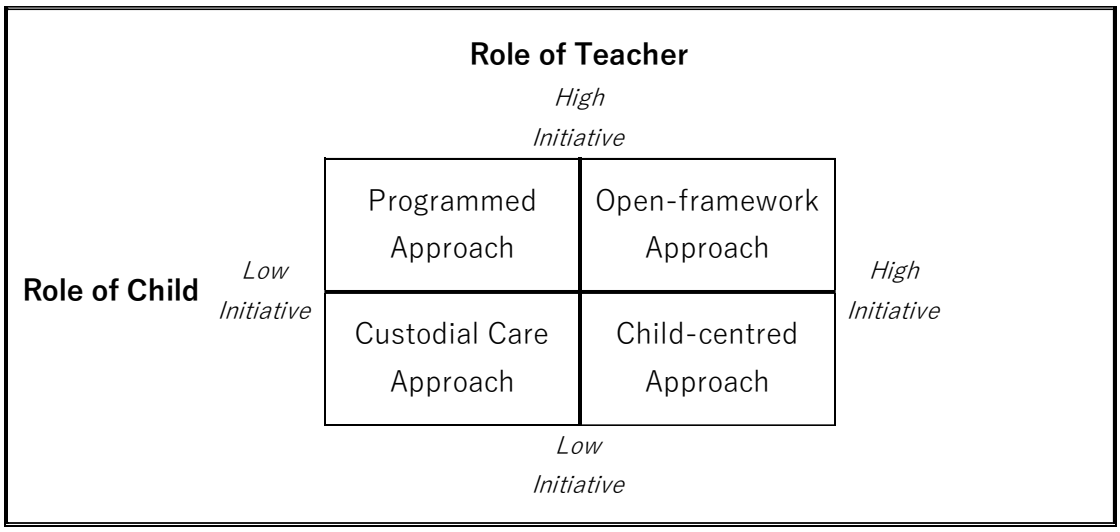
Previous studies have also shown that quality ECD programs enable a smooth transition to primary education and that children who have attended quality ECD programs are less likely to repeat a grade or drop out and tend to achieve better academic results than children who have not attended (Naudeau et al. 2011). Furthermore, children who have attended quality ECD programs are more likely to earn a higher income and are less likely to commit crimes (Naudeau et al. 2011, Weikert 2000).

It has also been argued that ensuring disadvantaged children have an equal start in life through quality ECD programs is important for narrowing disparities and realising a fair society (Hamano 2015).

2-2. Learning through Play and the Environment

As for approaches to ECE, Weikart (2000), in the paper titled "Early Childhood Education: Need and Opportunity", one of the series under *Fundamentals of Educational Planning* by UNESCO, explains that ECE curriculum models generally fall into four categories based on the level of initiatives by teachers/adults and children in learning activities: the *"programmed approach"* refers to the curriculum model with a relatively high initiative of teachers and low initiative of children; the *"open-framework approach"* refers to the model in which both teachers and children exercise a high level of initiative; the *"child-centred approach"* is a model with relatively low initiative by teachers and high initiative by children; the *"custodial approach"* refers to a method in which both teachers and children have low level of initiative (**Figure 1**).

Figure 1: Preschool curriculum models



Source: The figure is developed by the author based on Weikart (2000, p.57)

Regarding the characteristics of the open-framework approach, Weikart (2000) explains that "learning occurs through the child's active and largely intrinsically motivated involvement in an *environment* structured and observed by the teacher" (p.59) and argues the importance of using "those curriculum models that are based on *child-initiated learning* supported by adults" (p.69)[6].

In Japan, too, child-initiated learning and the composition of an environment by teachers are considered important. Indeed, ECE guidelines issued by the line ministries in Japan[7] state that

[6] Emphasis added by the author.

[7] "Guidelines on Education and Childcare for Certified Early Childhood Education and Care Centers" (Cabinet Office, Ministry of Education, Culture, Sports, Science and Technology, and Ministry of Health, Labour and Welfare 2017), "Guidelines on Education in Kindergarten" (Ministry of Education, Culture,

education for early children should be conducted through play and the environment.

This guiding principle is based on the idea that play cultivates the foundations of development; play itself is important learning for early children; devising the environment is important for children to learn by interacting with the environment. The environment here is not only the physical environment, such as toys, but also the human environment, such as teachers and friends, who interact with children in everyday life, as well as nature and phenomena. Therefore, teachers need to facilitate play arising from children's initiatives and organise an environment to enhance the healthy development of children. In this paper, this approach to ECE in Japan is referred to as "Learning through Play and the Environment".

3. Contextual background of Cambodia

This section explains Cambodia's social and economic situation, challenges in the ECE sector, and the influence on primary education to establish the contextual background of this paper.

3-1. Socio-economic situation of Cambodia

Cambodia is a kingdom in Southeast Asia with a population of over 16 million as of 2019[8], and most of the population is Khmer. During the Pol Pot regime from 1975 to 1979 and the subsequent civil war, much of the country's social infrastructure and human resources were lost. Since then, with the support of the international community, the country has gradually recovered and maintained steady economic growth of about 7% from 2011 to 2019[9]. On the other hand, the Human Development Index of Cambodia remains 0.582, ranking 146th out of 189 countries and regions, the second lowest only to Myanmar among Southeast Asian countries (UNDP 2018). The widening disparity between the rich and the poor is also a serious concern.

As for the situation of Battambang Province, the target area of this project, many people repeatedly get into debt and run farming on a shoestring or migrate to other places to earn money or work as day labourers. Moreover, there are many illiterate populations among the poor in rural areas, and the educational environment in these households is limited compared to that of middle or high-income households. Also, there are many cases where old grandparents are taking care of early children whose parents are away due to migration labour. UNICEF (2017) points out that care for such children tends to be insufficient, and the disruption of relationships with parents caused by migration negatively

Sports, Science and Technology 2017), and "Guidelines for Nursery Schools" (Ministry of Health, Labour and Welfare 2017)

[8] Obtained from the World Bank (https://data.worldbank.org/country/cambodia) on February 24th, 2025.

[9] ibid.

affects their emotional and psychological well-being.

3-2. ECE in Cambodia

This subsection discusses the issues and challenges of the ECE sectors in Cambodia. According to a survey SVA conducted before starting the project, there are three major challenges: limited access to ECE, low quality of ECE, and low awareness of the importance of ECE.

Access to ECE

Cambodia has several types of ECE programs, such as state preschools, community preschools, private preschools, and home-based programs (MoEYS 2019a). First, *state preschools* are under the jurisdiction of the MoEYS. Most state preschools are attached to primary schools and operated in available classrooms there, while there are also independent state preschools operated by preschools alone. Among all forms of ECE programs in Cambodia, state preschools have the largest number of beneficiaries (MoEYS 2019a). *Community preschools* are under the jurisdiction of communes[10], by which most of the preschool teachers' salaries are paid. *Private preschools* are privately operated, but official permission from the MoEYS is required. Private preschools are more common in urban areas. *Home-based programs* are educational programs for parents with children aged 0 to 5. The programs aim to enable parents to provide appropriate care and education for their children at home.

The number of facilities and teachers or staff offering these programs are increasing year by year, but the proportion of 3 to 5-year-olds receiving ECE programs remains at 39.9% as of School Year (SY) 2017/2018. By age, the percentages of children with access to ECE are 18.5% for 3-year-olds, 39.4% for 4-year-olds, and 63.1% for 5-year-olds. For 3 and 4-year-olds, more than half of the population does not have access to ECE (MoEYS 2019a).

Quality of ECE

There are four major issues in the quality of ECE programs: inappropriate classroom environment, lack of learning materials, insufficient number of teachers with specialised training, and limited practise of child-initiated learning[11].

First, regarding the classroom environment, most state preschools in Cambodia are attached preschools using available classrooms in the compound of primary schools. Due to this, in many preschool classrooms, early children use desks and chairs for primary students that do not fit them well, or plastic chairs are just lined up on the bare concrete floor (**Figure 2**).

Second, there is a shortage of learning materials and picture books. During early childhood, children

[10] Communes are the basic administrative unit under districts. Communes consist of villages which are lower administrative units under communes.

[11] The issues listed here are for state preschools.

need to receive lots of stimulation by being exposed to various learning materials to develop their fine motor skills using their hands and fingers and nurture their imagination and creativity through activities such as craft-making. It is also important for children to enjoy the world of stories through picture books and develop an interest in language. However, toys, learning materials, and picture books are limited.

Third, the number of preschool teachers with specialised training is insufficient. There is only one teacher training centre (TTC) for preschool teachers in Phnom Penh, the capital city of Cambodia. The TTC produces around 200 graduates per year, but the supply of teachers is not keeping up with the growing number of preschools (MoEYS 2019a). Therefore, primary school teachers make up for the shortage of preschool teachers[12]. According to a survey SVA conducted in Battambang province, the percentage of teachers who have graduated from the TTC for preschool teachers is low, especially in rural and remote areas[13], and many teachers struggle because they have not learned how to teach early children.

Fourth, the teaching method tends to be teacher-centred, and play-based learning is not properly implemented. Early childhood is when children learn by interacting with their surrounding environment through various real-life experiences. However, learning through play and the environment has not been practised much.

Figure 2: A preschool classroom of concrete flooring with plastic chairs (left)
a child using a desk and chair of which size does not fit (right)

[12] In this paper, the teachers who teach in preschools are referred to as "preschool teachers", regardless of whether they have graduated from the TTC for preschool teachers.

[13] For example, according to data of SY 2017/2018 by the Battambang POE, the percentage of teachers who graduated from the TTC for preschool teachers was 88.6% in Battambang City, but only 11.9% in Kamrieng District located on the Thai border.

Awareness of the importance of ECE

As mentioned above, most state preschools in Cambodia are attached to primary schools, where primary school principals also serve as the ones for preschools. School management committees (SMCs)[14] of primary schools are also responsible for supporting preschools. However, the principals' and SMC members' understanding of and cooperation for preschools are seemingly not as sufficient as that for primary schools. Also, community members, including guardians, are not aware of the importance of ECE in many cases.

3-3. Influence on primary education

These challenges in ECE negatively influence primary education. For instance, the percentage of children entering primary school *after* 6 years old – the official age for school enrolment – hits a high of 20.4%. The repetition and dropout rates of Grade 1 children also hit 11.2% and 3.5%, respectively (MoEYS 2019b). Furthermore, a study of early reading conducted by RTI International (2018) found that 17.2% of students in the latter part of Grade 1 (month 7) could not identify any letters, and 71.1% could not read familiar words.

While there could be many reasons behind this, one of the possible reasons is that the Grade 1 pupils were not ready for schooling at the stage of enrolment, or those children did not have many opportunities to improve their school readiness through ECE programs. Given that the developmental delays caused in early ages are difficult to make up for in the subsequent developmental stages, those children with a relatively weak foundation for learning are more likely to experience hardships in the future. Thus, improving the school readiness of children, including the disadvantaged, through quality ECE programs is an issue that requires urgent attention.

4. ECE project by SVA

4-1. Outlines of the ECE project

To address the challenges discussed in the previous section, SVA implemented a project for "Quality Improvement of Early Childhood Education at State Preschools in Battambang Province, Cambodia" as a JICA Grassroots Technical Cooperation Project from January 2016 to February 2019[15]. This project was proposed by Shizuoka Prefecture and implemented in cooperation with Tenryu Kohsei-

[14] SMC is a committee that functions as a platform for discussions on school management or fundraising for improving a school environment. SMCs usually consist of a principal and representatives of the community members. Cooperation from SMCs and community members is important in Cambodia to complement the necessary budget on top of the one allocated by the government.

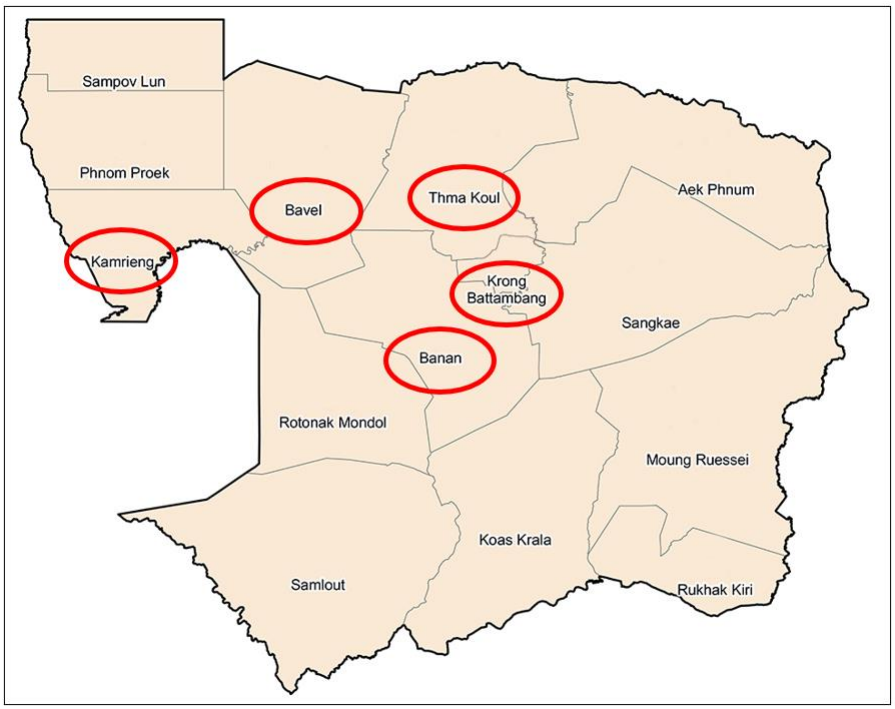
[15] SVA started the ECE project in 2015 with the support of private donors. The support continued even after the JICA project started in 2016. SVA has also been implementing successor projects since 2019.

kai, a social welfare corporation operating nursery schools/kindergartens in the prefecture.

The project purpose is "Quality of class activities is improved at target preschools through effective teaching methods (storytelling, material producing, plays and space arrangement) and an attractive classroom environment." Under the project purpose, there are four outputs: 1) capacity building of counterparts (the ECE Department of MoEYS, the Provincial Office of Education (POE) in Battambang province, and the District Office of Education (DOE)); 2) capacity building of preschool teachers (teacher training, monitoring, etc.); 3) improvement of classroom environment (classroom renovation, distribution of furniture, materials, picture books, etc.); 4) awareness raising of SMCs and community members. The log frame for this project is available in **ANNEX I**.

The project targets 42 state preschools (39 preschools attached to primary schools and 3 independent preschools) in one city and 4 districts in Battambang province, namely, Battambang City, Thmar Koul District, Banan District, Bavel District, and Kamrieng District (**Figure 3**). The beneficiaries are 2,398 children, 82 teachers, 42 principals, SMCs, community members of the target area, and government officials, including the ECE Department of MoEYS, POE in Battambang province, and DOE in the target city and districts. Out of the 42 target preschools, 4 preschools were designated as "model preschools" of the project, and intensive input, such as study visits to Japan and technical support sessions in Cambodia by Tenryu Kohsei-kai teachers, was provided. The model preschool teachers also served as trainers for teacher training with the POE and DOE staff.

Figure 3: Target districts and city in Battambang Province, Cambodia



There are two key features characterising this project. First, it collaborated with Japanese nursery school/kindergarten teachers and incorporated the concept of "Learning through Play and the Environment". Japanese teachers provided their knowledge as ECE specialists, and SVA localized the knowledge so that the know-how of the Japanese experts could be applied in the context of Cambodia. Secondly, SVA's long experience of library activities, such as storytelling and the transformation of classrooms into library rooms, was utilised. These features were reflected in the project, assuming that the resources of SVA and Tenryu Kohsei-kai would be effective.

The following subsections detail the contents of project activities, including the composition of a classroom environment, reading promotion activities like storytelling, and promotion of "Learning through Play and the Environment" in model preschools. The data obtained through the terminal evaluation survey[16] are referred to demonstrate the results of the project interventions.

The descriptions of Output 1: capacity building of government officials of MoEYS, POE and DOE, and Output 4: awareness raising of the importance of ECE to SMCs and community members are omitted due to this paper's focus on the activities for the improvement of teaching methods and classroom environment under Output 2 and 3.

4-2. Composition of a classroom environment

This subsection describes the composition of a classroom environment, one of the project's main components. In this project, SVA developed a classroom design that helps the development of early children (**Figures 4, 5**), referring to the classroom environment, furniture, and learning materials at nursery schools/kindergartens of Tenryu Kohsei-kai.

In doing so, SVA devised the classroom design to fit well with the standard classroom environment in Cambodia while reflecting the know-how from Japan. For example, name stickers with the symbols of fruits and flowers were used on the racks for children's bags and shoes so that a child could find the

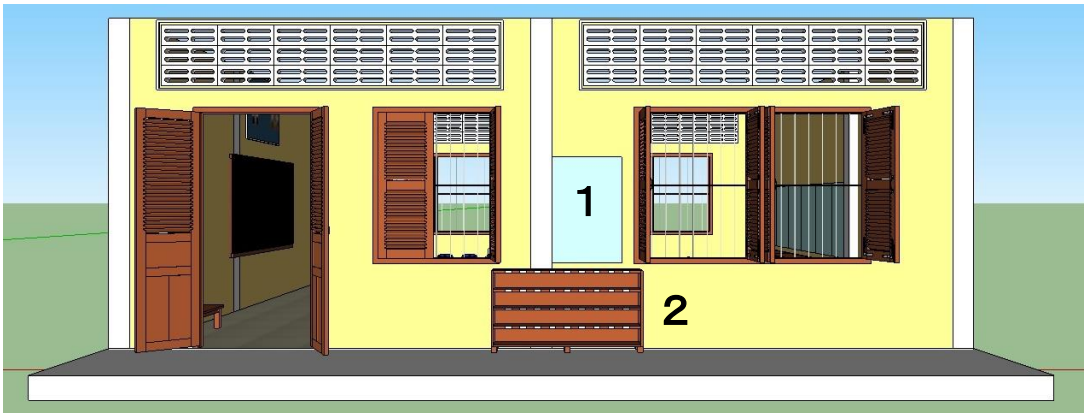
[16] The terminal evaluation of the project was conducted internally by SVA, including the author. Data collection methods included (1) observation of the preschool classrooms, (2) interviews with principals and preschool teachers, (3) focus group interviews with guardians, (4) focus group interviews with the POE and DOE officials and model preschool teachers, (5) questionnaire survey with the ECE Department of MoEYS, and (6) literature reviews, among others. 25 out of 42 target preschools were surveyed for data collection in January 2019.
For the sampling of the preschools, the evaluation team first excluded the 4 model preschools, the preschools of which data was not collected in a baseline survey, and the preschools whose teachers, interviewed at the baseline survey, were not available for some reasons (e.g., transfer). Then, the samples were randomly selected at each district to ensure the survey would cover 4 target districts. The preschools in Battambang City were not included because they were either model preschools or preschools without data from the baseline survey.
The result of the terminal evaluation is compiled in "Terminal Evaluation Report for the JICA Grassroots Technical Cooperation Project: Quality Improvement of Early Childhood Education at State Preschools in Battambang Province, Cambodia" (SVA 2019).

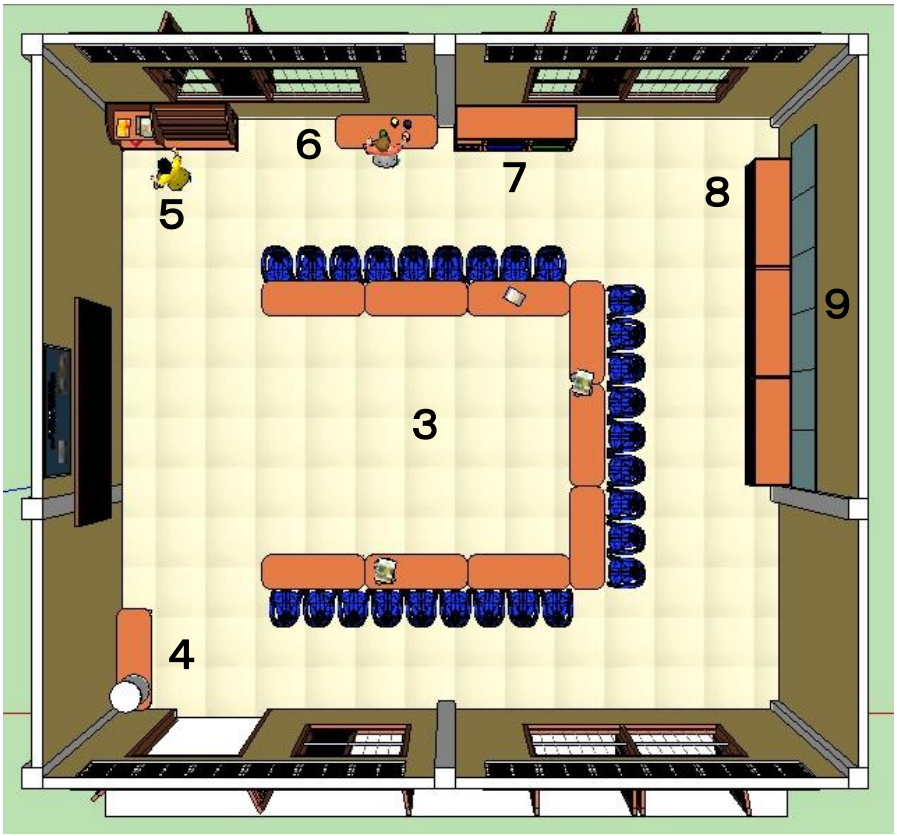
symbol that belongs to him/her and put the belongings in the designated space by him/herself even if he/she could not read. At the same time, children would become interested in the shape of the letters by seeing their names on the stickers daily. While this idea itself derives from the practice in Japanese nursery schools/kindergartens, SVA localized this idea by using the image of fruits and flowers well-known in Cambodia.

For flooring, SVA encouraged target preschools to lay tiles on the concrete floor in consideration of the climate in Cambodia, where dust is easily brought into classrooms during the dry season, while mud does the same in the rainy season. Tiled floors are easy to clean and feel comfortable on the skin, even in hot climates; hence, they are popular in Cambodia.

Figure 4: Classroom environment before the project (left above) and after the project (right above) Name stickers (left bottom) and a child using a designated box on the rack (right bottom)

Figure 5: Layout of the classroom designed in the project





1 Information corner (for parents/guardians)
2 Shoe rack
3 Desks and chairs
4 Hygiene corner (water filter, cups, mirrors, etc.)
5 Book corner
6 Science corner (children can observe items utilised in the class)
7 Learning materials corner (storing learning materials, toys, and stationary in baskets category-wise)
8 Rack for children's bags
9 Display corner (display children's achievement, etc.)

There were 4 main activities for improving a classroom environment: 1) classroom renovation, 2) distribution of furniture, teaching and learning materials, and decoration materials, 3) teacher training, and 4) monitoring. To improve the ownership of the target preschools and community members, each preschool raised the necessary funds for classroom renovation (e.g. laying tiles on the floor) in cooperation with the SMC and community members. After the renovation was completed, furniture, learning materials, and decoration materials were distributed. Then, preschool teachers learned the importance of and how to organise a classroom environment in training. After the teachers organised the classroom environment based on what they learned in the training, the project team conducted monitoring and advised on improvement.

The classroom environment before and after the project intervention was assessed by SVA staff, using the "Rating scale for preschool classroom environment" (**ANNEX II**). The scale is a tool to rate the condition of each corner of the classroom using a four-point scale: inadequate (1 point), minimal (2 points), good (3 points), and excellent (4 points). As a result, the average score for each corner improved from 1.20 to 3.58 (**Table 1**).

Table 1: The score of the "Rating Scale for Preschool Classroom Environment"
(Surveyed 25 classrooms at 25 preschools)

	Before	After
Information corner	1.12	3.64
Shoes rack	1.00	3.56
Desks and chairs	1.20	3.92
Sanitation corner	2.08	3.56
Book corner	1.00	4.00
Science corner	1.04	2.76
Learning materials corner	1.00	3.68
Number of toys and learning materials	1.04	3.60
Rack for children's bags	1.00	3.84
Display corner	1.48	3.28
Average	**1.20**	**3.58**

Source: Terminal Evaluation Report for the JICA Grassroots Technical Cooperation Project: Quality Improvement of Early Childhood Education at State Preschools in Battambang Province, Cambodia (SVA 2019)

The rating scale is designed to allow high scores only when teachers make good use of distributed materials and maintain them properly, and not when teachers just place the materials. Therefore, this result indicates that teachers improved their skills in the composition of a classroom environment.

4-3. Reading promotion activities, storytelling

This subsection elaborates on reading promotion activities like storytelling. Overall, the target preschools of the project had practised storytelling before the project. Yet, there were few picture books and other storytelling materials in many cases, and the teachers did not tell stories very often.

There were 3 major activities for reading promotion: 1) distribution of picture books and storytelling materials, 2) teacher training, and 3) monitoring. The teacher training was a three-day program, including the following content: importance of storytelling, the production of storytelling materials, practising storytelling, how to utilise storytelling to enrich class activities, and the promotion of reading at home (book lending, etc.).

As a result, the frequency of storytelling increased after the project intervention, as shown in **Table 2**. As to the reasons for the increase in frequency, many teachers answered, in an open-ended question, that “there are many picture books and storytelling materials”, “teachers have acquired the skills to tell stories”, and “children like to listen to stories”. A few also answered that “teachers like telling stories”. These answers suggest that the distribution of picture books and capacity building of teachers enabled the teachers to practise storytelling, and the children’s interest in listening to stories further improved teachers' motivation for storytelling.

Table 2: Frequency of storytelling

（Surveyed 33 teachers at 25 preschools）

	Before	After
Never	0.0%	0.0%
Rarely	9.4%	3.0%
Once a week	15.6%	3.0%
Twice a week	25.0%	15.2%
3 times a week	40.6%	18.2%
4 times a week	6.3%	18.2%
5 times a week	3.1%	15.2%
More than 6 times a week	0.0%	27.3%

Source: Terminal Evaluation Report for the JICA Grassroots Technical Cooperation Project: Quality Improvement of Early Childhood Education at State Preschools in Battambang Province, Cambodia (SVA 2019)

The teacher training also introduced how to utilise storytelling and picture books to enrich class activities, such as using storytelling as a lead-in to the next activities. As a result, all 33 teachers interviewed in the terminal evaluation survey answered that they "incorporated storytelling into other activities". Asked about with which activities teachers utilised storytelling, in an open-ended question, 72.7% answered drawing (e.g., drawing a picture based on the story), 63.6% answered observation (e.g., comparing the objects in the picture book with the real objects), 54.5% answered promoting free reading and book lending, and 21.2% answered playing dramas by children. This shows that teachers have started using picture books and storytelling to enrich the content of class activities.

Figure 6: Storytelling with a picture book (left), drawing activity after storytelling (right)

4-4. "Learning through Play and the Environment" in model preschools

This subsection explains the activities for promoting "Learning through Play and the Environment". As key inputs for grasping and practising this concept, study visits to Japan and technical support in Cambodia were conducted in cooperation with Japanese nursery school/kindergarten teachers. The target of these activities was limited to the teachers at 4 model preschools and government officials from MoEYS, POE and DOE, who played an important role in teacher training and monitoring, because targeting all 42 target preschools was not realistic due to the nature of these activities.

Study visits to Japan

Study visits to Japan were conducted twice for about 10 days each, with 14 participants in total. The training was mainly conducted at Tenryu Kohsei-kai's nursery schools/kindergartens, where participants learned about the concept and practise of "Learning through Play and the Environment" through observations of the nursery schools/kindergartens, lectures, and practical training.

In the practical training, the participants joined the class activities side by side and learned how Tenryu Kohsei-kai teachers set "aims" in each activity considering the development stage of children, create an environment where activities can be carried out in line with those aims, and adjust the content of

activities observing the children's reactions. For example, during the study visits in 2017, a series of activities themed on Sports Day were held at the nursery school/kindergarten, where Sports Day was scheduled the following week. The participants experienced activities for about 4 days, such as practising for Sports Day outside, making cheering goods (naruko[17] and maracas) with recycled materials (e.g., milk cartons and plastic bottles) (**Figure 7**), and drawing pictures of the sport children want to do their best in at Sports Day, all of which were designed to have a natural "sequence" from one to the other. After the practical training, the participants discussed how each activity would contribute to the development of children to deepen their understanding.

Figure 7: A cheering good developed with recycled materials by a child (left)
Children and participants from Cambodia cheering up using the developed goods
at the rehearsal of Sports Day (right)


Technical support in Cambodia

Technical support in Cambodia by Japanese teachers was conducted five times in the project, and 12 Tenryu Kohsei-kai teachers visited Battambang. Each technical support program lasted about five days and consisted of the following activities: 1) open class by a model preschool teacher and review of the class (lesson study), 2) lectures on "Learning through Play and the Environment" by Tenryu Kohsei-kai teachers, and 3) training on the development of class activity plans (**Figure 8**).

In the lesson study, the model preschool teachers who participated in the study visits to Japan developed a class activity plan and implemented it for two days while other participants observed it. The participants included teachers from other model preschools and government officials from the ECE Department of MoEYS, POE and DOE. They checked the activity based on the checkpoints such as "Were the aims and activities appropriate for the children?", "Was the setting of the environment

[17] A type of instrument made by attaching bamboo tubes or pieces of wood to a wooden board to produce sound.

appropriate for the activities?", "How did the teachers interact with the children?" and "What was the reaction of the children?". They exchanged opinions on these points in the following review session. The teachers from Japan observed the lesson study and provided comments and advice from an expert perspective.

Before and after the lesson study, the teachers from Japan gave a lecture on "Learning through Play and the Environment". This enabled the Cambodian participants to link the concept of "Learning through Play and the Environment" and its practices. Also, an exercise of class activity plan development was conducted in which model preschool teachers and government officials developed the content of class activities based on the learning through the lesson study and lectures. Furthermore, the Tenryu Kohsei-kai teachers gave training sessions on craft activities using recycled materials available in Cambodia (e.g., plastic bottles) to support Cambodian preschool teachers in creating fun activities using materials easily found in their surroundings.

Figure 8: A craft activity with recycled materials at an open class (left)
Model preschool teachers and POE/DOE staff working on class activity plan development (right)


"Learning through Play and the Environment" by Cambodian teachers

As a result of these activities, the model preschool teachers gradually started to develop and devise a class activity plan and practise it by themselves. For example, a teacher at Battambang City Resource Preschool, one of the model preschools, came up with an activity to make "caterpillars" using plastic bottle caps. The aims of this activity were "to become able to sort recycled materials in types", "to become aware of the difference in colours", and "to make good use of recycled materials". Considering the developmental stage of children, some tasks with potential risks, such as piercing holes in the plastic bottle caps, were performed by the teacher. According to the model preschool teacher, the children enjoyed this activity a lot, and the photos show that the children were satisfied with the original "caterpillars" they made themselves (**Figure 9**).

In this activity, the teacher of Battambang City Resource Preschool set the "aims" of the activity, prepared the "environment" in consideration of the children's development stage (piercing holes in the plastic bottle caps, etc.), organised the activities with a natural "sequence" from one to the other (sorting the recycled materials and the subsequent creative activity) so that the children would be interested in the activity and feel a sense of accomplishment. In other words, this activity was the very example of a Cambodian teacher realising the concept of "Learning through Play and the Environment" in a way that suited the context of her preschool.

Figure 9: Making "caterpillars" using recycled materials at Battambang City Resource Preschool

Source: The photos were shared by the teacher of Battambang City Resource Preschool

Policy impact

These efforts influenced the new ECE curriculum for state preschools approved by the MoEYS in June 2018 (MoEYS 2018). For instance, the new curriculum stipulates, in its implementation guideline, that learning in early childhood should be done through "play and cooperation". It also stated that preschool teachers should "facilitate" children's learning based on their initiative and be creative in planning and implementing activities, considering children's development stages.

There should be several reasons why the project could bring policy impact. First, the director and deputy directors of the ECE Department and Curriculum Development Department of MoEYS, responsible for formulating ECE policy and drafting the new curriculum, participated in the study visits to Japan at the very moment of the ECE curriculum reform. Indeed, the MoEYS officials who visited Japan expressed to SVA staff that the inspiring experience of seeing fun and engaging interactions between Japanese teachers and children helped them shape the future vision of preschools in Cambodia. Secondly, the presence of preschool teachers who applied the learning from Japan in practice should have contributed to this result. In fact, since 2018, the model preschool teachers trained in the project have been cooperating as resource persons for the MoEYS-led teacher training for implementing the new curriculum.

5. Impact on children and causal relationship with project interventions

The previous section elaborated on the ECE project by SVA, such as the composition of a classroom environment, reading promotion activities, and the promotion of "Learning through Play and the Environment". As a result, the target preschool teachers have started to apply the techniques they learned through the training, and model preschool teachers have started practising "Learning through Play and the Environment". These achievements also led to policy impact.

This section analyses the positive changes in children and the causal relationship with project interventions based on the data obtained from the terminal evaluation survey. First, it discusses the impact on children observed by the teachers, such as motivation to come to preschool and school readiness. Next, it analyses how the composition of a classroom environment and reading promotion activities led to positive changes in children. It also discusses how these activities contributed to a good relationship between children and teachers. Finally, it presents the "Theory of Change" of how the project interventions impacted children.

5-1. Impact on children

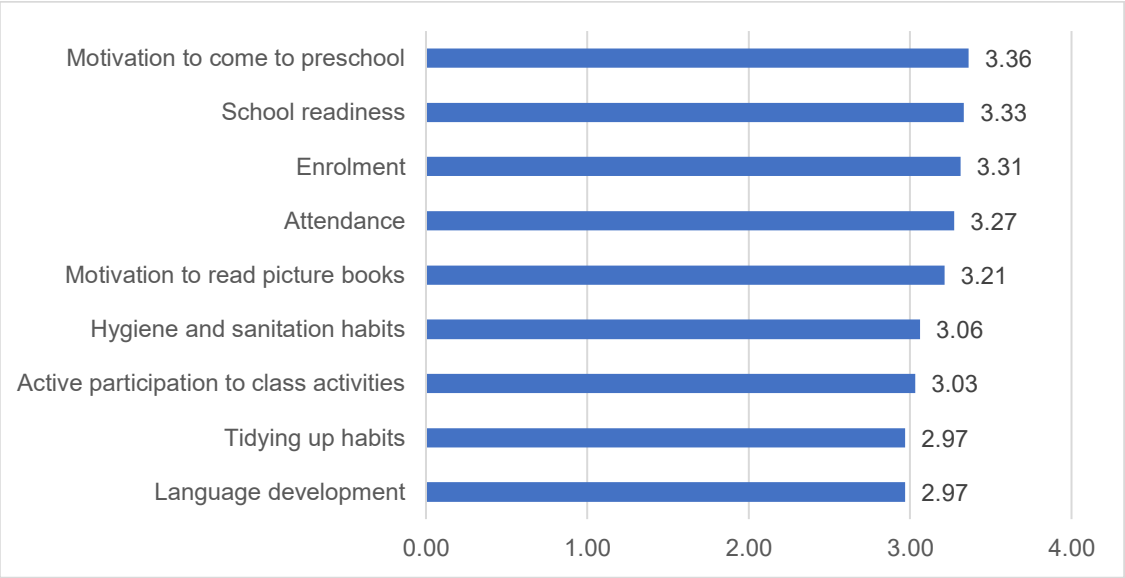
This subsection discusses the positive changes in children, confirmed through interviews with preschool teachers, principals, and guardians in the terminal evaluation survey[18].

In the interviews with teachers, they were asked to rate to which extent they observed any changes in children in 9 areas, such as "motivation to come to preschool" and "school readiness" as a result of project interventions. The ratings were given on a five-point Lickert scale: not at all (0 points), a little (1 point), fair (2 points), well (3 points), and very well (4 points). As a result, the average score was 3 points or higher for almost all areas. The highest score was "motivation to come to preschool" (3.36), followed by "school readiness" (3.33), "enrolment" (3.31), "attendance" (3.27), "motivation to read picture books" (3.21), "hygiene and sanitation habits" (3.06), "active participation to class activities" (3.03), "tidying up habits" (2.97) and "language development" (2.97) (**Figure 10**).

[18] It is possible that some of the positive changes in children may have been caused by factors other than this project because the children were exposed to various stimulation in their daily lives. However, given that the survey team asked the respondents to list the changes they thought were caused by this project, the data presented in this section should have a certain validity.

Figure 10: Positive changes in children observed by teachers

(responded by 33 teachers of 25 preschools surveyed in the terminal evaluation)



Source: Terminal Evaluation Report for the JICA Grassroots Technical Cooperation Project: Quality Improvement of Early Childhood Education at State Preschools in Battambang Province, Cambodia (SVA 2019)

These changes were also confirmed in interviews with principals and parents. As for principals, due to their responsibility of overseeing both preschool and primary school classes, many responded that there was a smooth transition to primary education as a result of improved school readiness, with some principals even pointing out improvements in the promotion rate from Grade 1 to Grade 2 as in the box below.

Principals' responses on improved school readiness

- Children are ready to study in Grade 1 and are confident.
- Grade 1 students who graduated from preschool classes can learn smoothly. The repetition rate from Grade 1 to Grade 2 also declined.
- The repetition rate declined from 40% to 10% when the students who had participated in the preschool class supported by the project were promoted from Grade 1 to Grade 2.
- The children who studied at preschool and are in Grade 1 now go to the library and read books.

Furthermore, many responses from teachers indicated the project's contribution to the development of non-cognitive skills (initiative, confidence, social skills, etc.).

Teachers' responses on the development of non-cognitive skills[19]

- Children always help a teacher arrange chairs and tables and prepare playing materials. **(initiative)**
- Children help each other and share materials together in the classroom. **(cooperation, social skills)**
- Children are brave. They are not afraid of doing an activity when a teacher proposes to do it in front of other children. **(confidence)**
- Children pay attention to a teacher and focus on the teacher's instruction. **(concentration)**

Also, the teachers interviewed in the survey, in open-ended questions, provided more detailed accounts of the behavioural and attitudinal changes in children and the promoting factors of these changes. The author analysed the patterns and themes in these free responses and categorised them as shown in **Table 3**. The data in the table indicates that the composition of a classroom environment and reading promotion activities like storytelling contributed to these positive changes in children, which is further discussed in the next subsections.

[19] The text in brackets is by the author.

Table 3: Positive changes in children and promoting factors[20]

	Positive changes in children (or guardians)		Promoting factors		Excerpt of teachers' response
Motivation to come to preschool	–	—	Attractive and clean classroom	75.8%	"Many children like to come to preschool because the classroom is clean, there are a lot of learning materials, and they like the teacher telling stories."
	–	—	Many learning materials and picture books	69.7%	
	–	—	Interest in storytelling	39.4%	
	–	—	Play, communication with friends	12.1%	"The teacher has a good relationship with children."
	–	—	Good relationships with teachers	9.1%	"Children under 3 years also want to go to preschool."
Active participation in class activities	Clean and tidy up by themselves, assist teachers	39.4%	More materials to play / books to read	15.2%	"Children assist the teacher in cleaning, arranging materials, and telling their friends to follow the teacher."
	Brave	21.2%	Good teaching method, children like teachers	12.1%	
	Active	18.2%	–	–	"Children are brave and active. When they wonder, they ask (questions) immediately."
	Interaction with teachers (ask / answer questions, pay attention)	18.2%	–	–	"Children are brave. They are not afraid of doing an activity when a teacher proposes to do it in front of other children."
	Interaction with friends, help each other	18.2%	–	–	
	Clever	12.1%	–	–	
Motivation to read picture books	Communicate with friends (read together, etc.)	18.2%	Picture books (beautiful pictures, many picture books, children like picture books)	81.8%	"Children like to see pictures in picture books." "Children want to read the book after a teacher conducts storytelling."
	Read aloud (role-play of the characters, tell the name of animals, etc.)	18.2%	Storytelling	24.2%	"Children see pictures, exchange books together, and talk about pictures."
	Borrow books	15.2%	–	–	"Because there are a lot of picture books in a preschool class, a teacher observed that, after children arrive at class and keep their bag in box (rack), they go to read books at library corner."
Language development	Vocabulary, use of polite and correct words	57.6%	Tell the story of picture books, tell stories based on pictures	24.2%	"Children know the words, remember the stories more than before, and develop language."
	Interaction with friends	36.4%	Speak and talk more	12.1%	"Children open books and tell the story based on pictures."
	Interaction with teachers (listen, ask / answer questions, etc.)	27.3%	—	—	"Children have (good) relationships with a teacher and friends by talking, reading picture books and speaking with classmates." "A relationship among children is improved more than before."

[20] Originally, the teachers were supposed to answer the promoting factors of positive changes in children in the 9 areas. However, it was confirmed that teachers also answered specific examples of how children (or guardians) changed in many cases. In this table, the author sorted each answer into the categories whichever seemed more relevant.

Tidying up habits	Arrange, pick up and return items properly	54.5%	–	–	"Children are able to arrange their bags, shoes, chairs, other learning materials, and books properly." "Children know their own places/seats." "Most children keep their bags in the right place and help each other to arrange learning materials." "Children always share playing materials together."
	Know their own places / Sit on designated chairs	39.4%	–	–	
	Respect time	21.2%	–	–	
	Listen to teachers	18.2%	–	–	
	Cooperate with friends, share materials	9.1%	–	–	
Hygiene and sanitation habits	Clean themselves (clean hands, cut nails)	57.6%	–	–	"Because of floor tiles, children's clothes became cleaner than before." "Children like being clean, so they clean the floor." "Children eat outside the classroom and throw rubbish into a rubbish bin." "Children drink clean water, so their health (condition) is good."
	Drink clean water	45.5%	–	–	
	Dressed tidy, wear a clean uniform	42.4%	–	–	
	Throw rubbish properly	36.4%	–	–	
	Clean classroom	18.2%	–	–	
	Eat outside of the classroom	12.1%	–	–	
Attendance	Regular attendance / Decreased absenteeism	60.6%	Motivation to come to preschool	42.4%	"Children want to go to preschool. Even when they are sick, they still ask their parent to send them to preschool." "Get permission when they are absent." "Parents improve understanding of ECE. Preschool teachers encourage and talk with parents about the development of their children."
	Report of absence to teachers	18.2%	Understanding and cooperation of parents	12.1%	
Enrollment	–	–	Enrollment on time	33.3%	"A principal and village chief cooperate with each other to share the information of enrollment to villagers. This activity was promoted to all parents and they bring their children to enrol school on time." "Many parents were waiting for enrollment time and bring their children to preschool because they see children who attended preschool are better when they go to Grade 1."
	–	–	Information sharing by school (campaign, etc.)	30.3%	
	–	–	Improved awareness of parents, good reputation of preschool	15.2%	
	–	–	Information sharing with SMC, village chief, etc.	9.1%	
	–	–	Attractive classroom environment	6.1%	
School readiness	Easy to study in Grade 1 (fast learner, good score, etc.)	15.2%	Basic knowledge and skills	81.8%	"When children who study in preschool go to Grade 1, they get good scores because they have good habits and skills." "(Children) have friends and know the teacher." "Children are brave, and they listen and talk more."
	Easy for primary school teachers to teach	15.2%	Familiar with school / Not afraid / Brave	57.6%	
	–	–	Good behaviours and attitudes	54.5%	
	–	–	Play / communication with friends	27.3%	
Others	–	–	–	–	"Children understand about living in society more than before." "Parents trust preschool teachers."

Source: The table is prepared by the author based on the terminal evaluation survey data.

5-2. Causal relationship with improvements in a classroom environment

This subsection elaborates on how the improved classroom environment has contributed to positive behavioural and attitudinal changes in children, such as motivation to come to preschool, tidying up, hygiene and sanitation habits, initiative, and social skills.

Motivation to come to preschool

The most significant contribution of improved classroom environments is "motivation to come to preschool". 75.8% of teachers cited "attractive and clean classrooms" as the promoting factor for "motivation to come to preschools", and 69.7% cited "many teaching materials and picture books" as in **Table 3**. "Motivation to come to preschool" is a promoting factor of "attendance" (42.4%), thus the improved classroom environment even led to "attendance".

Tidying up, hygiene and sanitation habits

The next point is the contribution to improvement in lifestyle habits. For instance, 54.5% of teachers mentioned "arrange, pick up and return items properly" as an example of children's behavioural changes in "tidying up habits". Improved classroom environment, such as easy-to-use furniture and name stickers, seems to have facilitated children's acquisition of tidying up habits (**Figure 11**).

For behavioural changes of "hygiene and sanitation habits", teachers answered that children were keeping themselves clean, throwing away trash properly, and keeping the classroom clean. Teachers' responses like "Because of floor tiles, children's clothes became cleaner than before" and "Children like being clean, so they clean the floor" indicate that the introduction of floor tiles and shoe boxes has helped children understand that "the classroom is a place that should be kept clean".

Initiative, confidence, social skills

The improved classroom environment seems to have developed non-cognitive skills, such as initiative, confidence, and social skills. For instance, regarding the children's tidying-up habits, a teacher answered that "children are able to arrange their bags, shoes, chairs, other learning materials, and books properly". This means that children have more space to take action on their own, and they become familiar with doing things more independently. Perhaps this has also led to children's initiative and confidence. Indeed, many teachers reported, in "active participation in class activities", that children became more "brave" (21.2%) and "active" (18.2%), asking questions proactively and behaving confidently without fear. Overall, this suggests that children gained confidence by having more space to take action on their own and became more active in class activities.

Improved classroom environments even seem to have developed children's social skills. As examples of behavioural changes in children, teachers answered that "children always share playing materials together" or "(children) help each other to arrange learning materials". This shows that the children

recognised that the learning materials were “shared property” for all. Furthermore, many teachers (39.4%) reported that children now recognise their "own" places or sit in their designated seats with name stickers, which even seems to have contributed to children's sense of not disturbing and respecting others' spaces[21]. Taken all, these examples indicate that children became aware of the importance of rules and cooperation. Indeed, one of the teachers answered, “Children understand about (the meaning of) living in society more than before”, suggesting their improvement in social skills.

Figure 11: Children putting their belongings in the rack (left)

A child picking and returning toys by herself (right)

5-3. Causal relationship with reading promotion activities

This subsection discusses how reading promotion activities like storytelling have contributed to positive changes in children, such as motivation to come to preschool, interest in reading, language development”, and active communication among children.

Motivation to come to preschool

The data shows that children are motivated to come to preschool because of picture books and storytelling by teachers. As discussed in the previous subsection, 69.7% of teachers responded that “many teaching materials and *picture books*” motivated children to come to preschool. Also, 39.4% of teachers pointed out “interest in storytelling” as one of the promoting factors.

Interest in reading

As for interest in reading, **Table 3** clearly shows that the project intervention significantly contributed to children’s “motivation to read picture books”, with 81.8% of teachers citing “picture books (beautiful pictures, many picture books, children like picture books)” as a promoting factor. This is

[21] This point was not necessarily raised by teachers during the terminal evaluation survey, but SVA staff frequently heard, during the project, teachers saying that children started to respect others’ spaces.

followed by “storytelling” (24.2%) as one of the teachers responded that “children want to read the book after a teacher conducts storytelling”. Many teachers pointed out that preschool children were particularly interested in beautiful pictures. This indicates that picture books with many pictures are attractive learning materials for early children who cannot read.

Language development

Next, regarding “language development”, 57.6% of teachers pointed out “vocabulary, use of polite and correct words” as positive changes they observed in children. Given that teachers reported children were remembering and telling stories based on pictures, children seem to have learned new words and improved their ability to express themselves verbally through picture books and storytelling.

Communication, interpersonal skills

The data also shows that reading promotion activities enhanced communication among children. For instance, 18.2% of teachers pointed out “communication with friends (reading together, etc.)” as one of the behavioural changes, as one of the teachers stated that “children see pictures, exchange books together and talk about pictures”, which suggests that picture books functioned as a medium to promote communication among children. Another teacher also mentioned that “the relationship among children improved”. This indicates that children’s interpersonal skills may have improved as a result of increased interaction through reading promotion activities. The increased conversation among children might have led to “language development” as well.

Figure 12: Children enjoying reading picture books with friends

5-4. Contribution to good relationships between children and teachers

The project interventions might have also facilitated good relationships between children and teachers. For instance, 9.1% of teachers cited “good relationships with teachers” as the promoting factor of “motivation to come to preschool”. Even though the percentage of this response is not very high, given

that teachers gave the responses to an open-ended question, a certain number of teachers seem to have felt that they had developed better relationships with children. Notably, many guardians also pointed out in the interviews that their children liked their teachers and that the teachers took better care of their children. Though several factors should have facilitated good relationships between teachers and children, storytelling and the composition of a classroom environment also seem to have contributed, as I explain in the following paragraphs.

Storytelling by teachers

As for storytelling, there were several responses from guardians pointing out that storytelling led to children's attachment to their teachers, such as "children like teachers because teachers always tell them stories." The fact that 39.4% of teachers cited children's "interest in storytelling" led to "motivation to come to a preschool" also suggests that children like storytelling by teachers.

Regarding the contribution of storytelling to attachment, Frude and Killick (2009) argue that storytelling facilitates intimate communication between the teller and the listener (or caregivers and children) and helps them share experiences and feelings through stories, thereby strengthening the attachment relationship. It has been pointed out that parents and children deepen their relationship through books (Matsuoka 2015) and that children "feel a comforting safety and happiness, and feel that they are loved" when listening to stories from their parents (JNNE 2008, p.65). The sense of attachment that develops between parents and children through storytelling would apply, to some extent, to the relationship between teachers and children. Thus, it should be reasonable to assume that storytelling contributed to building better relationships between children and teachers.

Composition of a classroom environment by teachers

Regarding the contribution of the classroom environment, children's recognition of a teacher as "someone who prepares a safe place and provides fun learning materials" might have led to good relationships between children and teachers. For example, in the interviews with guardians, one of the responses read, "Teachers prepare lots of toys and teaching materials, so the children are happy when they arrive at the classroom". Also, one of the principals stated, "The teacher prepares (safe) drinking water for the children, so children and parents feel safe". These answers suggest that children and guardians came to trust teachers who provide a clean, safe, and attractive classroom environment.

It is also possible that the classroom environment has reduced the burden on teachers. In Cambodia, there are many cases where one teacher looks after so many children that teachers have difficulty in proceeding with class activities[22]. In this situation, a classroom environment that helps children do things by themselves might have reduced the burden on teachers. This, perhaps, enabled teachers to

[22] The pupil-teacher ratio for preschools in Battambang province is 30.26 on average, or 620 teachers for 18,765 pupils (MoEYS 2019b), while there are many cases where 1 teacher looks after more children.

interact with children in a more relaxed manner.

Sense of trust

Overall, the data suggests that children like, trust and feel attached to the teachers who tell stories and prepare a good environment for them. It has been widely known that establishing a sense of trust is crucial as a foundation for child development. In the context of early childhood care and education in Japan, too, children's trust in teachers is recognised as an important foundation for the healthy development of children (Cabinet Office, Ministry of Education, Culture, Sports, Science and Technology, and Ministry of Health, Labour and Welfare 2018, Ministry of Education, Culture, Sports, Science and Technology 2018, Ministry of Health, Labour and Welfare 2018).

Taken all, it would be reasonable to assume that the storytelling and composition of a classroom environment by preschool teachers contributed to establishing a good relationship between children and teachers and developing children's sense of trust in teachers, which laid a strong foundation for the growth of children, as confirmed in the previous subsections.

5-5. Theory of Change

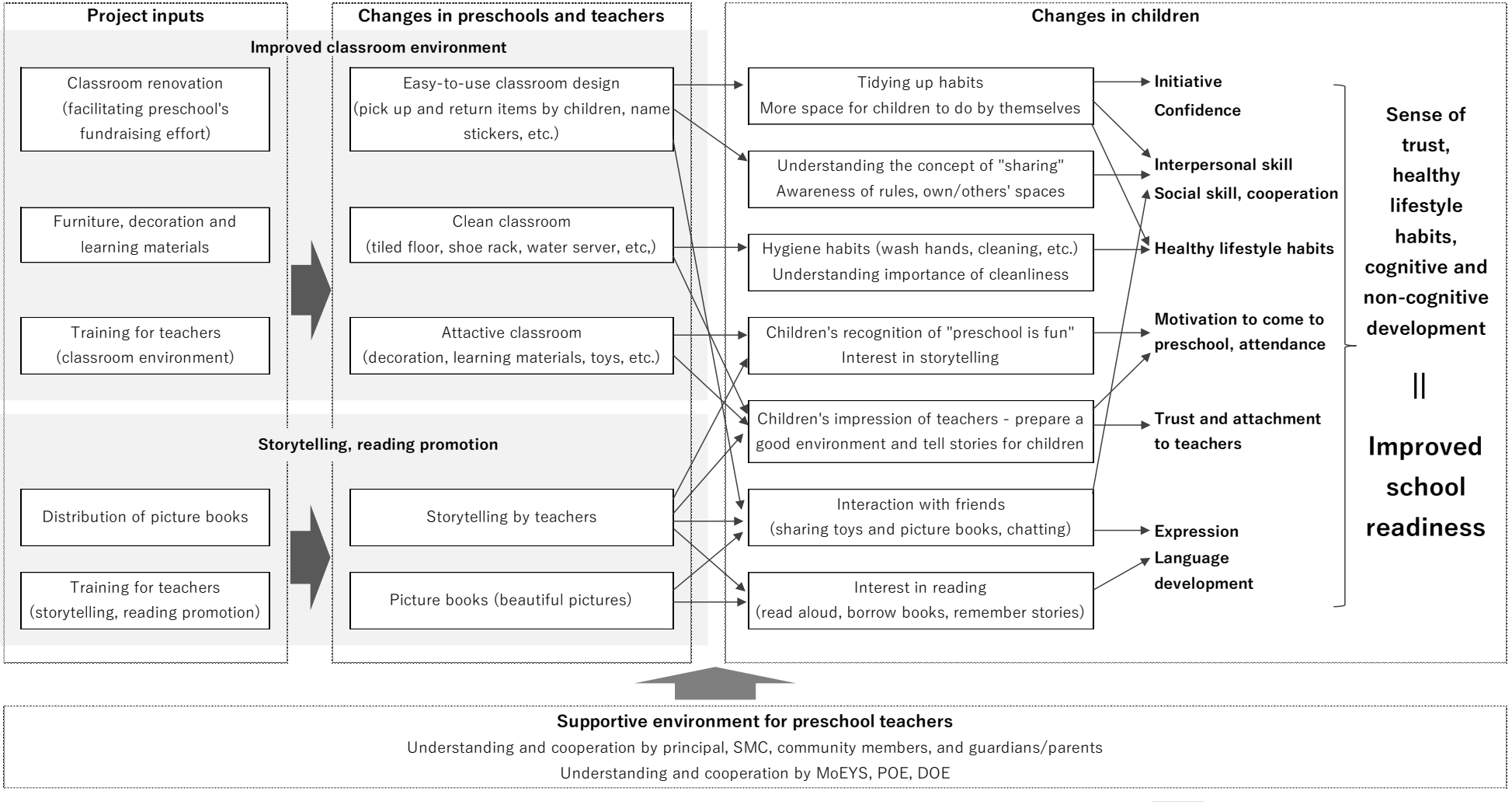
The previous subsections discussed the positive changes in children and analysed the causal relationship with project interventions. Based on this, the author developed the "Theory of Change" as shown in **Figure 13**.

To sum up, as a result of project interventions, such as classroom renovation, distribution of materials, and teacher training, the classroom environment significantly improved to an easy-to-use, clean, and attractive one. Teachers started storytelling, and children's access to picture books also increased. Eventually, improved classroom environment and reading promotion activities contributed to positive changes in children, such as initiative and confidence, interpersonal and social skills, healthy lifestyle habits, motivation to come to preschool, improved attendance, trust and attachment to teachers, expression, and language development.

Overall, these positive changes could be categorised in the following: nurturing *a basic sense of trust*, as in attachment and trust to teachers; development of *healthy lifestyle habits*, as in tidying up and hygiene habits; *cognitive development*, as in language development; and *non-cognitive development*, as in initiative, confidence, motivation, interpersonal skills and social skills. These comprehensive changes, facilitated through the project interventions, resulted in *improved school readiness* of children.

Also, the author would like to highlight that a supportive environment for preschool teachers, such as cooperation from principals, SMC members and government officials, significantly contributed to achieving these outcomes.

Figure 13: Theory of Change – causal relationship between project interventions and positive changes in preschools, teachers, and children



Source: The table is prepared by the author based on the terminal evaluation survey data.

6. Challenges and Lessons Learned

This paper introduced SVA's ECE project in Cambodia, with particular emphasis on activities such as the composition of a classroom environment, reading promotion activities like storytelling, and promotion of "Learning through Play and the Environment". It also analysed how a series of project interventions brought positive changes in children. Finally, this section outlines the challenges of the project and lessons learned in the case of implementing similar projects.

6-1. Challenges

The project has two major challenges: the replicability of the project interventions and the response to the new ECE curriculum.

Replicability of the project interventions

Firstly, the content of the project is not necessarily replicable at all preschools in Cambodia. From the beginning, this project did not target all state preschools in the target area. Instead, the project team selected the preschools which met the following criteria: 1) having a relatively strong building that can withstand wind and rain, 2) the school and community members are likely to cooperate in classroom renovation, and 3) the preschool teachers are less likely to be transferred. These criteria were necessary due to the project's emphasis on a classroom environment and for ensuring sustainability. However, it also means that the same input may not necessarily translate into the same result when applied at preschools with different conditions.

It is obvious that preschools with poor building conditions, limited community participation, and a high possibility of teacher transfer are in a more difficult situation and have a higher need for support. Though it could be possible that the effect of the project may spread to other preschools with the support of government officials and model preschool teachers who played a role as trainers in the project, for future project formulation, devising the project design to be more replicable for preschools in more difficult conditions may be necessary.

Response to the new ECE curriculum

The second point is the response to the issues that may arise in disseminating the new ECE curriculum. As discussed earlier, the new ECE curriculum reflects the concept of "Learning through Play and the Environment", and preschool teachers are expected to devise activities by themselves to facilitate children's effective learning process. However, preschool teachers with little experience with the teaching methods incorporating "play" or limited experience in developing class activity plans may find it challenging. Model preschool teachers also pointed out, in an interview, that a large number of children per teacher and the limited budget for purchasing learning materials were obstacles in practising "Learning through Play and the Environment" in Cambodia, though they were also aware

of the effectiveness of the method. Considering these points, it is necessary to bridge the gap between the ideal of the new curriculum and the reality in the field and help preschool teachers put it into practice.

In this regard, SVA, as an NGO, is in a good position to approach both teachers in the field and MoEYS officials who are responsible for policymaking. Thus, supporting preschool teachers in practising the new ECE curriculum should be important for SVA in the successor project. For instance, it is necessary to develop model preschools that can put the concept of "Learning through Play and the Environment" into practice, from which other preschool teachers can learn. Also, creating hands-on guidebooks (e.g., the example of craft activities using recycled materials or play-based activities) for supporting preschool teachers in developing and devising class activities would be important. In doing so, these activities should be implemented in close coordination with both government officials at the central, provincial and district levels and the preschool teachers in the field, which would eventually help to reduce the gap between the ideal in the policy and the reality in the field.

6-2. Lessons Learned

This paper aims to introduce the experience of SVA's ECE project in Cambodia as an example of international cooperation projects in the ECE sector and to present the findings and lessons learned. To this end, this subsection summarises the five key lessons learned from the project: child-initiated learning; material support for the composition of a classroom environment, expertise and localization, cooperation with multi-level stakeholders, and the role of national staff members.

Child-initiated learning

First, an approach that facilitates children's learning based on their initiatives is important in ECE. As in the discussion above, the positive changes in children observed in the project became possible by materialising a place that allows "child-initiated learning supported by adults" (Weikert 2000, p.69) in Cambodia through the composition of a classroom environment and reading promotion activities like storytelling. The experience of this project reaffirms the importance of a teaching method that facilitates children's learning based on their initiative.

Material support for the composition of a classroom environment

The second point is the effectiveness of material support for the composition of a classroom environment. In the context of international education development projects, material support tends to be avoided compared to technical support, such as training. However, material support should be understood as part of the "composition of a classroom environment", as this project showed the importance of the physical environment for the development of early children.

In doing so, the material support should come along with the training of the preschool teachers so that they can arrange and maintain an effective environment for the development of early children. Also, while a certain volume of material support at an initial stage is essential for teachers and other stakeholders to understand the importance of an environment, it is important to ensure that the necessary costs for maintaining the environment shall be covered by the school and the government after the completion of the project.

Expertise and localization

Third, a balanced combination of expertise and localization is important. In this project, nursery school/kindergarten teachers from Tenryu Kohsei-kai introduced the concept and practice of "Learning through Play and the Environment" in Japan. Then, SVA contextualized the inputs to make them applicable to preschools in Cambodia. As a result, the teachers accepted the concept and teaching methods introduced in the project and put them into practice, and MoEYS also found them effective. The example of this project shows that a balanced combination of ECE expertise and the localization effort is important for improving the quality and effectiveness of the project.

Cooperation with multi-level stakeholders

Fourth, collaboration with different levels of stakeholders, from community members to the central government, is important. Due to its focus, this paper could not fully examine the capacity development of counterparts and the awareness-raising activities of community members under Output 1 and 4. However, the project could not have achieved the results without the understanding and cooperation of the principals, SMC members and community members. For example, support from the principals, SMC members, and guardians was vital for budget allocation and the application of new teaching methods at preschools. Also, the understanding and cooperation of DOE, POE and MoEYS, which supervise educational administration including ECE, were essential in applying new teaching methods. In this project, the project team explained the project content not only to the target preschools but also to all other stakeholders, including SMCs, POE, DOE, and MoEYS, for accountability. The project team also closely collaborated with them, as exemplified in the teacher training in cooperation with POE and DOE staff.

The range of stakeholders to cooperate would vary depending on the nature of the projects to be implemented. However, in the case of this project, the fact that the project contents were accepted by a wide range of stakeholders, from community members to MoEYS, led to preschool teachers feeling comfortable adopting new teaching methods (**Figure 13**).

Role of national staff members

Finally, the role of national staff members is significantly important. The localization process of the teaching methods from Japan and close collaboration with the various stakeholders mentioned above

were not possible without the presence of Cambodian staff members, who are familiar with local contexts such as the state of preschools in Cambodia and the lives of people in rural areas and who have sufficient capacity to coordinate with all stakeholders, including government officials from MoEYS, POE and DOE. They made a great effort to build trust with the stakeholders and carry out project activities respecting the stakeholders' initiatives, which is believed to have encouraged the behavioural changes of the stakeholders and beneficiaries.

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ANNEX I: Log-frame

Project name: Quality Improvement of Early Childhood Education at State Preschools in Battambang Province, Cambodia

Project period: Jan 2016 – Feb 2019 (3 years and 2 months)

Target Area: 1 city and 4 districts in Battambang Province (Battambang City, Thmar Koul District, Banan District, Bavel District, and Kamrieng District)

Target Group: 2,398 children, 82 preschool teachers, 42 principals, school management committees (SMCs) and community of 42 state preschools, ECE Department of Ministry of Education, Youth and Sport, Provincial Office of Education (POE) and District Office of Education (DOE) of target areas, 500,957 people in 1 city and 4 target districts

Narrative Summary	Objectively Verifiable Indicators	Means of Verification	Important assumptions
Overall Goal Quality of class activities is improved at state preschools in Battambang province through effective teaching methods and an attractive classroom environment, and developed in-service training program is adopted by MoEYS.	1. Counterparts adopt the training program developed in the project.		
Project Purpose Quality of class activities is improved at target preschools through effective teaching methods (storytelling, material producing, plays and space arrangement) and an attractive classroom environment.	1. More than 80% of preschool teachers attended in-service trainings practice the knowledge and skills acquired through the trainings. 2. Physical development and health, moral and culture development, understanding and cognitive development and language development of children at target preschools is enhanced.	1. Baseline/Endline survey data 2. Interview *Conduct interview to both male and female.	
Outputs			
1. POE/DOE instructors and ECE Department staff acquire practical knowledge and skills for teaching methods of ECE, and POE/DOE instructors gain capacity to conduct workshop developed in the project.	1. In-service training 8 times in total (2 times x 4 districts) and raising awareness workshop 5 times in total (1 time x 3 districts, 2 times x 1 district) are implemented in cooperation with POE/DOE instructors.	1. Record of raising awareness workshop and in-service training	Most of trained preschool teachers do not change.
2. Preschool teachers in the target schools improve capacity for teaching methods (storytelling, material producing, plays and space arrangement) for early child.	1. Average score of post-test for in-service trainings about storytelling, learning materials, play and space arrangement is more than 75 out of 100.	1. Pre/post test of training	
3. Classroom environment is improved to be more child-friendly and attractive for early child in the target schools.	1. Classrooms of more than 80% of target schools are renovated.	1. Observation	

	2. All target schools are equipped with book corner, shelf for learning materials and shelf for children's bag. 3. All target schools are equipped with 150 copies of picture books.	2. Observation, record of furniture supply 3. Observation, record of picture books supply	
4. Principals, teachers and SMC understand the importance of ECE and cooperate for preschools in terms of fundraising or manpower and so on.	1. Average score of post-test for workshop about importance of ECE to principals, teachers and SMC is more than 75 out of 100. 2. SMC cooperate for preschools in terms of fundraising or manpower and so on at more than 80% of target schools.	1. Pre/post test of raising awareness workshop 2. Interview to principals and SMC, record of contribution (donation)	
Activities (Activities with * were started before the project starting date with private funding)	**Input**		
0. Conduct a baseline survey	**SVA / Tenryu Kohsei-kai** - Staff: 14 persons in total 12 persons at Cambodia office 2 persons at Tokyo office - ECE experts in Japan: 8 persons in total *Project team members from Tenryu Kohsei-kai - Materials for workshop Manual and guidebooks Stationary Materials for developing learning materials - Furniture, equipment and other materials for target schools Furniture Poster and leaflet Picture books Leaning materials Materials for decoration and learning materials development - Study visits to Japan	**MoEYS/POE/DOE** - ECE Department staff - POE staff - DOE staff - Salary for principals and preschool teachers **School/SMC** - Room allocation for preschool class - Manpower for classroom renovation, etc. - Fundraising for classroom renovation, etc.	POE and DOE staffs do not change.
1-1 Develop the program of in-service training and raising awareness workshop in cooperation with ECE Department/POE (*)			
1-1-1 Develop curriculum/manual/guidebook of in-service training and raising awareness workshop with POE			
1-1-2 Conduct in-service training and raising awareness workshop to 3 sample schools for test to check the effectiveness of the developed training and workshop program			
1-1-3 Organize consultation meeting with ECE Department to confirm the program of in-service training and raising awareness workshop			
1-1-4 Revise curriculum, manual and guidebook of in-service training and raising awareness workshop based on the result of training, workshop and monitoring			
1-2 Conduct ToT to POE/DOE trainers based on the developed training and workshop program			
1-3 Organize training for raising awareness on ECE to target schools in cooperation with POE/DOE (Same as 4-2)			
1-4 Organize in-service training to target schools in cooperation with POE/DOE (Same as 2-1)			
1-5 Organize regular meeting to show the progress with ECE Department, POE/DOE every 6 months.			
1-6 Organize training for capacity development of ECE Department and POE staff in Japan (2 times) (Same as 2-4)			
1-7 Advocate POE/DOE to integrate developed in-service training in the Annual Operation Plan			

2-1 Conduct in-service training to target schools			
2-1-1 Organize 1st in-service training to target schools			
2-1-2 Organize 2nd in-service training to target schools			
2-2 Conduct monitoring to target schools after in-service training			
2-3 Conduct training and monitoring by Japanese experts			
2-4 Organize training for capacity development of preschool teachers in Japan (2 times)			
2-5 Organize feedback meeting with ECE Department and POE/DOE based on the result of monitoring			
2-6 Conduct following-up training to target schools based on the result of monitoring			
2-7 Organize wrap-up workshop to target schools to share the result of the project and finalized training program			
3-1 Develop furniture and materials for early child (*)			
3-1-1 Develop sample furniture and materials			
3-1-2 Provide furniture and materials to sample schools for test			
3-1-3 Modify design of furniture and materials based on the result of monitoring			
3-2 Renovate preschool classrooms in cooperation with SMC			
3-2-1 Conduct survey to check the condition of classroom and furniture at target schools			
3-2-2 Facilitate target schools to proceed renovation			
3-3 Provide furniture to target schools			
3-3-1 Conduct survey to check the condition of classroom and furniture at target schools			
3-3-2 Provide furniture to target schools			
3-3-3 Check furniture arrangement at target schools			
3-4 Provide picture books and learning materials for ECE			**Pre-condition** MoEYS policy for ECE will not be changed.
4-1 Develop/prepare poster/leaflet to raise awareness on ECE (*)			
4-2 Organize workshop to raise awareness on ECE to target schools in cooperation with POE/DOE			
4-3 Facilitate principals and SMC of other target schools to organize event to raise awareness on the importance of ECE and necessity of cooperation for ECE to community people			
4-4 Distribute poster/leaflet to target schools and community people			
5. Conduct an end-line survey			

ANNEX II: Rating scale for preschool classroom environment

	1 Inadequate	2 Minimal	3 Good	4 Excellent
RS1: Sufficient indoor space	The area is crowded. Students cannot stretch their arms without touching other students. The area is not well maintained. Major repairs are needed. There is not enough light. Children have difficulty seeing things.	The area is not crowded. Student can stretch their arms without touching other students most of the time. Major and/or minor repairs are needed. More light may be required.	The space is sufficient. Children can stretch their arms without touching other students. Minor repairs (that do not affect learning and children's safety) may be needed (i.e. wall repainting, floor polishing). The area is well maintained.	The space is sufficient. Children can stretch their arms without touching other students. Teachers can walk around and reach every kid. No repair is required. The area is well-maintained and well-lit.
RS2: Child-sized chairs and tables (for all children)	Less than 50% of children in class have access.	50-60% of children in class have access.	61 to 80% of children in class have access.	More than 80% of children in class have access.
RS3: Shoe rack (availability, condition, sufficient space for children, name seal with symbol, cleanliness and maintenance)	The shoe rack is not available or not in usable condition.	The shoe rack is available in usable condition, but there is not enough space for all the children to keep their shoes. Name seals or symbols for each child are not available.	The shoe rack is available in usable condition and has enough space for all children to put on their shoes. Name seals or symbols for each child are available. But not so clean and well-maintained.	The shoe rack is available in usable condition and has enough space for all children to put on their shoes. Name seals or symbols for each child are available. It is clean and well-maintained.
RS4: Information board (availability, utilised and updated, access to information, decoration)	No info board or not in usable condition.	Info board is available, but not so utilised or the information is not regularly updated.	Info board is available, and the information is regularly updated. Parents/community members can access some information through the info board.	Info board is available, and the information is regularly updated. Parents/community members can access some information through the info board. It is well-decorated to attract attention
RS5: Hygiene corner (Availability of minimum hygiene materials*, level of utilisation, cleanliness and maintenance) *towel, mirror, comb, trash bin, water server, bucket for handwashing, and broom	The number of minimum daily hygiene materials is less than 4.	4 to 6 minimum daily hygiene materials are available. The corner is not clean, well-maintained, and easily accessible for children.	4 to 6 minimum daily hygiene materials are available. The corner is clean, well-maintained, and easily accessible for children.	All or more than the minimum daily hygiene materials are available. The corner is clean, well-maintained and easily accessible for children.

RS6: Availability of books (Books for children)	There are supplementary reading materials and picture books in the class, but children are not allowed to use them. There are only 1–3 books: book per pupil ratio is less than 1/3.	There are only a few books in the class. For all children to read at once, they may have to share one book with at least 3 children in one group: book per pupil ratio is from 1/3 to less than 1/2.	There are enough books for children to read/look at in pairs at once: book per pupil ratio is from 1/2 to less than 1.	There are enough books for every child to read/look at once: book per pupil ratio is 1 or higher.
RS7: Book corner (availability of the corner, cleanliness, arrangement, accessibility)	Book corner is not available. The number of books is less than 10 copies.	Book corner is available. The corner is clean, well-arranged and accessible for children. The number of books is from 10 to 39 copies.	Book corner is available. The corner is clean, well-arranged and accessible for children. The number of books is from 40 to 79 copies.	Book corner is available. The corner is clean, well-arranged and accessible for children. The number of books is at least 80 copies.
RS8: Sufficient toys available for children	Less than 50% of children can play at once.	50% of children can play at once.	75% of children can play at once.	All children can play at once without waiting.
RS9: Learning materials for children (Score of RS8, availability of the corner, functionality, arrangement)	Less than 50% or 50% of children can play at once. (RS8-1&2) Learning materials corner is not available.	75% of children can play at once. (RS8-3) Learning materials corner is available. It functions well – children can access and utilize learning materials corner by themselves (pick up and tidy up toys, etc.). It is not well-arranged (not categorized in basket/box with seals and not clean).	75–100% of children can play at once. (RS8-3&4) Learning materials corner is available. It functions well – children can access and utilize learning materials corner by themselves (pick up and tidy up toys, etc.). It is well-arranged (categorized in basket/box with seal and clean).	All children can play at once without waiting. (RS8-4&4^{+}) Learning materials corner is available. It functions well – children can access and utilize learning materials corner by themselves (pick up and tidy up toys, etc.). It is well-arranged (categorized in basket/box with seal and clean).
RS10: Display corner (availability of the corner, display and update of children's achievement, arrangement of the space)	There is no space for displaying art.	Space or boards for displaying art is available. Not so many children achievements are displayed. Display is not regularly updated. The arrangement is not good enough (not beautiful or not in order).	Space or boards for displaying art is available. Many children achievements are displayed. Display is regularly updated. However, the arrangement is not good enough (not beautiful or not in order).	Space or boards for displaying art is available. Many children achievements are displayed. Display is regularly updated. The arrangement is good enough (beautiful and in order).
RS11: Racks/hooks for bags (availability and arrangement of the space, cleanliness and maintenance)	Racks/hooks for children's bag are not available.	Racks/hooks for children's bag are available, but not for all children. It is not properly arranged with stickers with name and symbol for each child. It is not so clean and well-maintained.	Racks/hooks for children's bag is available for all children. It is properly arranged with stickers with name and symbol for each child. It is not so clean and well-maintained.	Racks/hooks for children's bag is available for all children. It is properly arranged with stickers with name and symbol for each child. It is clean and well-maintained.

RS12: Science corner (availability of the corner, display of natural/science objects and related books or posters, well arranged and updated)	Science corner is not available.	Science corner is available (natural or any science objects are displayed at the corner). The corner is not well arranged and attractive. It is not so updated according to class activity. Relevant books or posters are not displayed most of the time at the corner.	Science corner is available (natural or any science objects are displayed at the corner). The corner is well arranged and attractive. It is updated according to class activity. Relevant books or posters are not displayed most of the time at the corner.	Science corner is available (natural or any science objects are displayed at the corner). The corner is well arranged and attractive. It is updated according to class activity. Relevant books or posters are displayed most of the time at the corner.

Education and Development Research Paper No. 16

Promoting "Learning through Play and the Environment" in Early Childhood Education in Cambodia: Improving ECE through the composition of a classroom environment, reading promotion, and collaboration with nursery school/kindergarten teachers from Japan

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