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Content

Evaluation of School-Based After-School Programs in Japan: Their Impact on Children's Everyday Activities and Their Social and Emotional Development

Fuyuko Kanefuji

Abstract: The purpose of this study is to identify the current state of school-based after-school support in Japan and to evaluate programs providing such support, known as 'After-school Classes for Children'. This study focuses on the impact of After-school Classes for Children on children's everyday activities and their social and emotional development. The analyses were conducted based on data collected from questionnaire surveys targeted at elementary school children in Tokyo. The total number of children sampled was 5,307.
The impact on children's everyday activities and their social and emotional development were identified from data analysis. This study also developed a scale for measuring the impact of 'After-school Classes for Children' on children's social and emotional development. Based on the results of analyses, it can be concluded that 'After-school Classes for Children', a program run by MEXT (the Ministry of Education, Culture, Sports, Science and Technology), is likely to contribute to the enhancement of the following two aspects of children's social and emotional development: 'Empathetic Understanding of Others' and 'Enhanced Interest and Ambition'.

Keywords: School-based after-school activity, evaluation, impact on children, questionnaire survey, children's everyday activities, social and emotional development

1 Introduction: The Purpose of this Study and the Background of After-School Activity Programs in Japan

The purpose of this study is to identify the impact of 'After-school Classes for Children' using data collected through questionnaire surveys conducted with elementary school pupils in the Tokyo metropolitan area. Before analysing the data and discussing the impact of After-school Classes for Children on children, this section first of all outlines the background to Japanese after-school activities for children, which have been developed as part of Japanese state policy. It will describe the development of this provision, its characteristics – including governance and the availability of funding – and the current state of implementation.

The school-based after-school activity mentioned in this paper mainly refers to the 'After-school Classes for Children' projects, which have been developed since 2007 as part of a Japanese government policy called 'After-school Plans for Children'. This policy was implemented in May 2006 by the Ministry of State for Measures for the Declining Birth-rate in agreement with the Ministry of Education, Culture, Sports, Science and Technology (MEXT) and the Ministry of Health, Labor and Welfare (MHLW). The 'After-school Classes for Children' project is based on a proposal that facilitated the combined implementation of the 'Local Children's Classroom Promotion Project', which was run by MEXT, and the 'Healthy Child-rearing Project with After-school Plans for Children', which was run by MHLW. Both of these projects emerged from the context of various social problems that Japan has been facing in recent years such as an increasing number of violent and criminal acts against children and the diminishing roles of home and community in children's education. The aim of these projects was to raise happy and strong children in society as a whole.[1]

Table 1 shows an outline of 'After-school Plans for Children'. MHLW's 'After-school Children's Club' is mainly aimed at caring for children while their parents are at work, and thus mainly targeted towards children between the ages of seven and nine years. This program only accepts children with both parents at work, and on submission of proof of work. On the other hand, MEXT's 'After-school Classes for Children' accepts children of any grade and does not require proof of work from parents. It is open to all children.

The focus of this paper is 'After-school Classes for Children' and the following analyses of data are based on programs provided under this project. The characteristics of after-school activities provided under this project can be summarized in the following three points: 1) they mainly use spare classrooms and sports grounds in state elementary and middle schools; 2) their planning and implementing is conducted through the cooperation of school, family, and community; and 3) they include learning, sports, intercommunication, and other activities. The content of specific activities can be decided by each municipality and thus varies according to the region. MEXT recommends that coordinators should be appointed at the city or town level, and should be incorporated into the planning stage. Decisions on appointments are entrusted to local boards of education. In this way, municipalities play the primary role in implementing projects. In terms of finance, it is stipulated that the state, prefecture, and municipality must each bear one third of the expenses respectively (as a form of budget assistance).

1 'After-school Plans for Children' will continue to be implemented under the jurisdiction of these two authorities (i.e. MEXT and MHLW, the Ministry of Health, Labor and Welfare). Details of initiatives and relevant materials are published on the following website: http://manabi-mirai.mext.go.jp/cooperation.html

Table 1. Program Outline for the Promotion of the 'After-school Plans for Children'

	'After-school Classes for Children' (run by MEXT)	'After-school Children's Clubs' (run by MHLW)
Budget from the state in 2014	5,147 million yen (42,3 million US Dollar)	33,223 million yen (274 million US Dollar)
Number of schools	10,376 (as of Financial Year 2013)	21,482 (as of May 2013)
Location of the provision	Elementary schools: 71.3% Community centres: 13.2% Children's halls: 3.4% Other: 12.1%	Elementary schools: 28.1% Child welfare facilities: 24.1% Children's halls: 12.8% Other: 35.0%
Number of days open per year (Average)	111 Days (Average of Final Year 2013)	In principle, 250 days or more including long vacations
Instructors	Various community members and parents	After-school child care workers (full-time)

* Adapted from the material produced by the Ministry of Education, Culture, Sports, Science and Technology (MEXT).

Table 2. The state of implementation of 'After-school Classes for Children'

	2007	2008	2009	2010	2011	2012	2013
Amount of the state subsidy	2,359 million yen	3,774 million yen	4,411 million yen	4,631 million yen	5,166 million yen	4,649 million yen	4,870 million yen
No. of schools implementing	6,201	7,736	8,610	9,197	9,733	10,098	10,376
Average no. of days that classes are held per year per school	111.7 days/year	117.2 days/year	114.8 days/year	118.5 days/year	118.8 days/year	No data	111 days/year
Total no. of municipalities implementing	851	1,011	1,053	1,060	1,075	1,076	1,090

* Adapted from material produced by the Ministry of Education, Culture, Sports, Science and Technology (MEXT).[2]

** The state subsidy for the three prefectures affected by the Great East Japan Earthquake in 2011 has been separated from the normal budget for after-school classes, and has been provided as a special budgets since 2012. This is why the total amount of state subsidy in the table appears to have decreased in 2012. However, the real amount of state subsidy provided for after-school classes in total is in fact increasing.[3]

Table 2 shows the time series data for 'After-school Classes for Children', which was financially supported by MEXT. The number of implementations has increased on a national scale over the last five years. As of 2013, a total of 1,090 municipalities have implemented the program with 10,376 schools being involved. The average number of days when classes are held per year per school is about 110–120 days. Of the total of 1,741 municipalities in Japan (as of April 2014), 62.6% have implement-

2 The data are quoted from the following MEXT website: 'After-school Plans for Children', http://manabi-mirai.mext.go.jp/assets/files/pdf_jissijyoukyou/H24jissijyoukyou.pdf

3 The After-school Classes for Children project has continued to be implemented in earthquake affected areas. Since 2012, however, this has been delivered as part of another initiative called the 'Project Supporting Regional Community Generation through Learning' (total budget: 1.082 billion yen), which was set up to tackle the aftermath of the disaster. The operation of this project is entrusted to the municipalities of the disaster affected areas including Iwate, Miyagi, and Fukushima Prefecture.

ed the project. The percentage is gradually rising and is expected to rise even further in the near future.

2 Literature Review of After-School Programs and Their Impact on Children in the Japanese Context

In Japan, academic research to identify the current state of school-based after-school activities has been conducted since around 2008. Some of this was done by a commission from MEXT, and the entrusted organisations have also examined the current state of school-based after-school classes on their behalf.

A nation-wide survey of after-school classes was conducted by the Systems Research & Development Institute of Japan (SRDI, 2008). Their research results showed various changes in the consciousness and behaviour of children who participated in 'After-school Classes for Children' projects. A questionnaire survey was conducted on children, parents and program coordinators to analyse any changes in children from the perspective of both the children and their parents. Then the data collected from 3,312 children who participated in the after-school programs were analysed. According to the results, 47% of children responded that they were now able to greet adults in the community and 45% answered that they played with friends in different grades more than before. Furthermore, 52% of parents whose children participated recognised that their children were now able to look after younger children, and 65% of them thought that their children were able to greet adults in the community better than before. The program coordinators said that they felt positive changes in their own awareness of and attitudes towards after-school activity compared with previous perceptions.

Another research project commissioned by MEXT identified the responses of coordinators and volunteers who engaged in 'After-school Classes for Children' projects. The Outdoor Education Research Foundation (OERF, 2008, 2009) conducted a study to discover the characteristics of leading examples of after-school classes. They analysed the content of the activities as well as perceptions of the program coordinators and volunteers in twenty cases. Their findings revealed that coordinators and volunteers 'felt fulfilled', 'became more aware of and interested in children in their local areas', and 'became more interested in issues in their communities' by engaging in the project (OERF, 2008, 2009).

There are also distinct approaches to understand after-school programs and their impact on children in Japan. The National Institution for Youth Education (NIYE, 2010) conducted a large scale questionnaire survey and analysed the data in order to understand the relationship between experiential activities and their impact on changes in children's consciousness and behaviour. In this study, nationwide questionnaire surveys were conducted on approximately 11,000 samples of children between the ages of 11 and 17 years and 5,000 samples of adults between the ages of 20 and 60 years. The samples of children were selected using a random sampling method. The survey of adults was conducted in the form of a web survey. This study

showed that participating in a variety of experiential activities in childhood has a strong impact on children's consciousness and behaviour as well as on consciousness and behaviour in adulthood. The study also showed that the frequency of participation in experiential activities is strongly related to the personal and social development of children and adults and to self-reliance in childhood and adolescence. The researchers developed a set of evaluation criteria consisting of seven categories and thirty-five specific items in order to assess the impact of these after-school experiences on children's social and emotional development.

Some studies also discussed the values, desired effects, and desired future directions of the 'After-school Children's Plan' and 'After-school Classes for Children' programs (Kato, 2007; Morimoto, 2007). These studies, however, are not evidence-based and simply discuss the issues theoretically.

The characteristics and roles of extra-curricular and out-of-school education in Japan were also analysed based on a survey conducted by MEXT and on some case studies (Yanagisawa, 2013).

There were some earlier studies conducted on pupils, parents and coordinators that attempted to measure the impact of 'After-school Classes for Children' projects (e.g. SDRI, 2008; OERF, 2008, 2009). Some of these studies (for example the study conducted by SDRI, 2008) suggest some impacts of after-school activities on children as well as on adults who participated in the activities. Nonetheless, the designs of these studies are not rigorous enough and their focuses are only on the participating children, their parents, and adults, such as coordinators and volunteers, who are engaged in after-school activities. Thus, it can be argued that the effects of after-school classes have not been adequately investigated. It can also be pointed out that many of these studies are based either on small sample surveys or individual case studies, and that some are not even evidence-based. Therefore, we have relatively little evidence of the effects and impacts that after-school programs have on children, their parents, school teachers, and the local communities in Japan.

On the other hand, studies conducted in the USA and other Western countries suggest the potential impacts of after-school programs on children and adolescents. Durlak et al. (2007) pointed out that:

> Current data offer clear empirical support for the conclusion that well-run ASPs can produce a variety of positive benefits for participating youth. More specifically, there is significant improvement in youths' feelings and attitudes (i.e. self-perceptions and bonding to school), their behavioural adjustment (i.e. increases in positive social behaviours and decreases in problem behaviours and drug use), and in their school grades and level of academic achievement (Durlak et al., 2007, p. 6).

The evidence for such positive impacts are reported by other meta-analysis and empirical studies (see, for instance, Baker, 2013; Vandell, 2013; Crawford, 2011; Cummings et al., 2011; Durlak et al., 2010; Durlak & Weissberg, 2013; Huang et al., 2012a, 2012b, 2007; Lauer et al., 2006; Zief et al., 2006; Scott-Little et al., 2002; Fashola, 1998; Posner & Vandell, 1994). These studies suggest the impact that Japanese after-school programs could potentially have on Japanese children, and provide valuable information including effective research designs and outcome measures for evaluating after-school programs that can assist Japanese researchers in future studies in this field.

Kanefuji et al. (2012) conducted an international comparative study with the aim of identifying the current state of school-based after-school activities and support in five developed countries (the United Kingdom, Germany, France, Korea and Japan).[4] The methods of the study included questionnaire surveys of elementary school children and interviews with government and state level officials and with school staff in metropolitan areas. This study contributed to outlining the current state of school-based after-school activities in each country. The results of the questionnaire surveys on children suggested there was some impact on participating children in the surveyed areas. The data used for the current article was collected in Tokyo as part of this international comparative study. Details of the Tokyo data will be described in the method section below.

It is expected that more evidence-based evaluative studies will be conducted on the effects and impacts of after-school programs in Japan. It is desirable that future studies consider not only the impact on children but also on their parents, coordinators, school teachers and other adults in the wider community. Because Japanese after-school programs are delivered by a partnership between school, family and community, they are expected to impact on all the parties involved.

Taking into account the current research situation in Japan, the following study sets out to identify the impact of after-school programs on children. It investigates the differences between participating and non-participating children. A scale for measuring the impact of school-based after-school programs on children's social and emotional development was developed from analysis of the data. By using the scale developed, the impact of school-based after-school programs on children is evaluated.

3 Methods

3.1 Definition of Key Concept

3.1.1 After School Activities

In this study, the term 'after-school activities' are defined as: 'systematic learning and experiential activities that are provided to children primarily at school before and after normal school hours and that are supported by adults including teachers, parents, local residents, and other relevant parties'.

This study focuses on after-school activities provided under the 'After-school Classes for Children' project. The reason behind this is that these activities have received government funding as a major part of 'After-school Children's Projects', an initiative implemented by the government in 2007, and expected to be promoted further with other associated educational policies in the near future. MEXT is plan-

4 This research was funded by a research grant from the Japan Society for the Promotion of Science (JSPS). Fuyuko Kanefuji (Research Representative): *International Comparative Study of National After-school Activity Supports Targeted at Elementary School Children*, 2010–2012, Grant Number: 22402051.

ning to secure more funding to promote school-based after-school projects for children from 2015 and onwards. Taking into consideration the current state of research, more studies should be conducted to identify the impact of after-school activities, especially those of school-based 'After-school Classes for Children', in order to encourage more activities to be promoted throughout Japan.

3.1.2 Children's Everyday Activities and Their Social and Emotional Development

(1) Definition and categories for measuring children's everyday activities

In this study, children's everyday activities are defined as 'activities in which children are engaged at home after school'. Seven categories of everyday activities were established for the purposes of this research and were investigated in order to find out what activities children were engaged in during the week prior to the survey. The seven categories are as follows: 1) Time spent watching TV; 2) Number of days spent without an adult's supervision after returning home; 3) Average number of friends played with regularly; 4) Number of hours spent studying outside of school hours (including cramming schools); 5) Frequency of playing video/computer games; 6) Frequency of using the Internet; and 7) Frequency of reading comic books.

The study was conducted on the assumption that participating in after-school activities will reduce time spent watching TV, the number of days when children spent time without adult supervision, time spent playing video/computer games, using the Internet and reading comic books, and that it will increase the number of friends played with regularly and the number of hours spent studying outside of school hours. In the data analysis, cross tabulation and statistical tests were conducted against participation in 'After-school Classes for Children'.

(2) Criteria for measuring children's social and emotional development

This study used the set of evaluation criteria developed by NIYE (The National Institution for Youth Education, 2010) for measuring children's social and emotional development. As mentioned above, the NIYE's evaluation criteria consist of seven categories and thirty-five items. They were developed in order to collect data and assess the effects of various experiences on children's social and emotional development (NIYE, 2010). This set of evaluative criteria was named 'The Power of (Hands-on) Experience'.

Although NIYE did not develop a scale using these thirty-five items, they were very useful in this study. As after-school programs consist of many experiential activities, it was assumed that these items can be applied to measure changes and impacts that after-school programs had on children. This study developed a scale for measuring the impact of 'After-school Classes for Children' based on these criteria developed in the NIYE study.

The seven categories developed by the NIYE are as follows: 1) a sense of self-respect; 2) awareness of social norms; 3) interest/ambition; 4) ability to sympathise; 5) interpersonal skills; 6) outlook on work; and 7) awareness of culture (including etiquette). There are five items in each category. For this study, however, three items were selected from each category (i.e. Table 9 is a list of seventeen of the twen-

ty-one items selected. These are those that showed high communality scores and were therefore used to develop the scale). These were items that were considered to be significant in measuring changes in children brought about by various experiences based on the results of the NIYE study.[5]

In the questionnaire survey, children were asked to choose the most suitable answer from four choices offered for each item. The choices were: 1) This does not apply to me at all; 2) This does not really apply to me; 3) This applies to me a little; and 4) This applies to me a lot.

3.2 Target Children in this Study

Although 'After-school Classes for Children' are provided for elementary and middle-school students, 71.3% of these are provided in elementary schools according to the survey conducted by MEXT in 2013 (see Table 1 for the data in 2013). It can be said that the majority of 'After-school Classes for Children' are provided for elementary school children. Therefore, it was decided that this study would focus on elementary school children and the programs provided for them. The questionnaire survey was conducted with children between 10 and 12 years of age (i.e. between the fourth and sixth grades in Japanese elementary schools).

3.3 Survey Outline and Data

Table 3 shows details of the data collected for this study. The total number of planned samples was 6,062, corresponding to the total number of children between the fourth and sixth grades of elementary school in T ward and K city, Tokyo. See below the number of valid responses collected was 5,321 and the valid-response rate was 87.8%. The proportions of each age group and gender are as shown in Table 4. The ratio of male to female was about 50:50, and the proportion of each age group was about 30% to 40%.

The characteristics of the two surveyed areas are as follows. Under the jurisdiction of the Tokyo Metropolitan Government, there are 23 wards and 26 cities. T ward is located in the centre of Tokyo. The resident population of T ward is about 40,000 while its daytime population is more than 850,000. This means that as many as 810,000 people are commuting into T ward. There are many government administrative offices, schools, and business enterprises in T ward. It can be said that T ward is the geographical and functional centre of Tokyo and is a well financed district. On the other hand, K city is located in the western part of Tokyo, and is a typical suburban residential area. The resident population of K city is about 190,000. The financial status of K city can be described as being about average for Tokyo.

The first reason for choosing these districts for the survey was that both districts have implemented 'After-school Classes for Children' in all of their elementary

5 The author participated in the NIYE study as a member of the research committee. During data analyses of the NIYE study, the thirty-five items were examined and twenty-one of them were selected to measure the impact of 'After-school Classes for Children' in this study.

schools and thus the level of provision of after-school programs was similar. The second reason was that the local board of education in each district agreed that we conduct the survey in all of their elementary schools. In this respect, it can be said that the sampling method used in this survey to extract districts was a judgment sampling (i.e. positive or purposive sampling). This survey was conducted by means of a complete enumeration.

The procedure for conducting the survey was as follows: 1) each local education board held a meeting with the principals of all their elementary schools, explained the purpose and content of the survey, and asked for their participation; and 2) the teachers at each school collected the data and each school posted the completed questionnaires to us. The questionnaire survey was conducted between 17th January and 28th February 2011.

Table 3. Data for this study (i.e. Numbers of schools, planned samples, valid responses, and valid-response rate)

No. of schools surveyed		No. of planned samples	No. of valid responses	Valid-response rate
Total no. of primary schools in T Ward, Tokyo:	8	1,394	1,258	90.2%
Total no. of primary schools in K City, Tokyo:	19	4,668	4,063	87.0%
Total number of primary schools:	27	6,062	5,321	87.8%

Table 4. Baseline attributes of the sample

Age & Gender	Real number	%
Age (& Grade): 10 years old (4th grade) 11 years old (5th grade) 12 years old (6th grade)	2,006 1,741 1,560	37.8 32.8 29.4
Gender: Male Female N/A	2,707 2,577 23	51.0 48.6 0.4
Total	5,307	100.0

* The 14 samples that responded N/A in both age and gender are excluded from Table 4.

4 Results

4.1 How do Children Spend Their Time After School?

How do children spend their time after returning home from school? In the questionnaire survey, the children were asked to give the number of days they spent time alone or without adult supervision after returning home during the week prior to the survey. Table 5 shows the results for this question. The most common answer was ‘almost none’, provided by 44.8% of children. This means that approximately 55%

of children in the two districts of Tokyo spent time alone or without an adult after returning home from school on at least one day.

Table 5. Number of days on which children spent time alone or without adult supervision after returning home during the week prior to the survey (Tokyo survey results)

	None	1 day	2–3 days	4–5 days	6 days or more	Don't know	n
% of children	44.8	14.4	19.5	12.0	8.7	0.6	100.0
Real Number	2,376	765	1,033	635	464	34	5,307

Table 6 shows the number of days children participated in school-based after-school activities during the week prior to the survey. It shows that more than 70% of children did not attend any after-school classes at all.

Table 6. Number of days children participated in school-based after-school activities during the week prior to the survey (Tokyo survey results)

	0 days	1–2 days	3–4 days	5 days or more	Don't know	n
% of children	73.0	10.9	4.8	2.2	9.1	100.0
Real Number	2,977	444	196	91	369	5,307

The data show that a large percentage of children do not participate in school-based after-school activities even though their schools provide them, and that many children spend their time after school at home alone or only with other children. Judging by these results, it can be argued that there is a need to promote after-school activities supports for children more proactively.

4.2 Impact of Participating in After-School Programs on Children

4.2.1 Impact on Children's Everyday Activities

In this analysis, cross tabulation and χ^2 testing were used to examine the effects of participation in after-school activities. As shown in Table 7, seven items were analysed and a visible statistical significance was observed for the average number of friends played with during the week prior to the survey. No statistical significance was observed for other items.

Table 8 shows the relationship between participation in 'After-school Classes for Children' and the average number of friends played with during the week prior to the survey. It shows that a higher percentage of children who participated in school-based after-school activities played with 5–9 and 10 or more friends. In contrast, a higher percentage of children who did not participate in 'After-school Classes for Children' tended to play alone or with one friend. It should be noted, however, that the effect size of Table 8 is relatively low (Cramer's V= 0.125).

This finding is underlined in the analysis of the relationship between the number of friends played with and the number of days the child participated (Figure 1). It

shows that the more the child participating in after-school classes, the more friends s/he played with. The effect size of this χ^2 test was .086.

Table 7. Results of χ^2 test in cross tabulation (children's everyday activities on schooldays vs. participation in after-school programs)

Children's everyday activities	χ^2 value	df	p value	Cramer's V
1. Time spent on watching TV during the week of the survey	4.793	5	.442	0.036
2. Number of days in which children spent time without an adult's supervision after returning home during the week of the survey	4.969	5	.420	0.037
3. Average number of friends the child played with regularly during the week of the survey	58.399	5	.000	0.125
4. Number of hours spent studying outside of school hours (including cramming schools)	8.447	5	.133	0.048
5. Frequency of playing video/computer games	2.053	4	.726	0.024
6. Frequency of using the Internet	2.257	4	.689	0.025
7. Frequency of reading comic books	0.933	4	.920	0.016

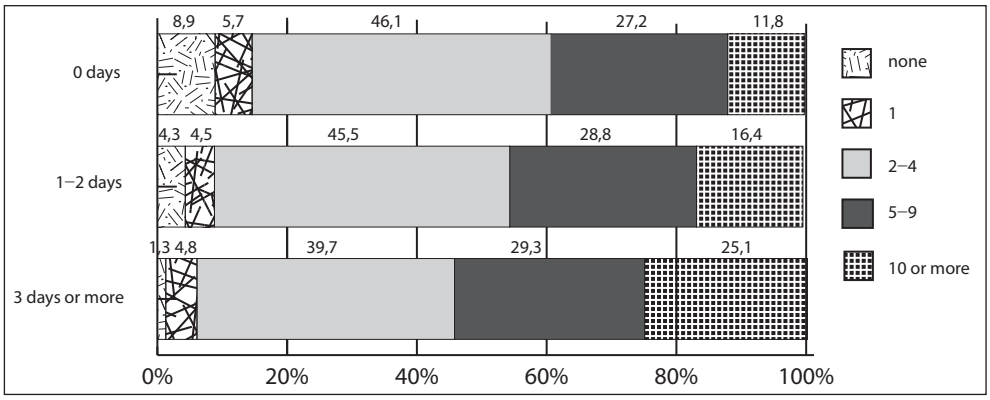
Table 8. Average number of friends the children played with regularly during the week prior to the survey shown against participation in 'After-school Classes for Children'

No of friends	None	1	2–4	5–9	10 or more	Unknown	Total%(n)
Participation, % of children	3.1% (23)	4.2% (31)	43.2% (316)	29.0% (212)	19.8% (145)	0.5% (4)	100.0% (731)
No participation, % of children	8.9% (264)	5.7% (171)	46.1% (1,372)	27.2% (810)	11.8% (351)	0.3% (9)	100.0% (2.977)

$p < .001$, n =3,708, Cramer's V= .125

* Numbers in parentheses are real numbers.

Figure 1. The number of friends played with regularly after school vs. the number of days participating in 'After-school Classes for Children'



$p < .01$, Cramer's $V = .086$

From the results of these analyses, it can be argued that participation in, and a higher frequency of participation in 'After-school Classes for Children' programs can have an impact on increasing the number of friends with whom children play schooldays. Taking account of the small scale of the effect size in both analyses, it should be born in mind that the impact of participation on the number of friends played with is restrictive in this study.

4.2.2 Impact on Children's Personal and Social Development

This section explains how the scale for measuring impact on children's social and emotional development was developed in this study, how the impact was measured using this scale, and the results of the analyses.

There are various approaches to measuring the impact of after-school programs on children. While some preceding studies focused on children's academic attainment in areas like math or reading (Crawford, 2011; Huang et al., 2011; Lauer et al., 2006; Vandell, 2013), other studies attempted to measure other types of impact, including that on children's social and emotional development, behavioural changes, safety, and changes brought to families (Durlak et al., 2007, 2010; Durlak & Weissberg, 2013).

This study focuses on the impact on children's social and emotional development. This decision was made by taking account of the nature of Japanese after-school programs that are delivered through a partnership of school, family and community. It was assumed that children's personal and social development will be nurtured by participating in such programs, in which they have opportunities to interact not only with other children but also with adults including parents, coordinators, and local residents.

The questionnaire contained twenty-one Likert scale questions and the data were collected on these from 5,307 children. The protocol adopted for the factor analysis was to use Maximum Likelihood estimation and to rotate the matrix of loadings to

obtain independent factors. This study used Promax (oblique) rotation. The Kaiser-Meyer Olkin Measure of Sampling Adequacy was conducted to test the size of partial correlations among variables. Bartlett's Test of Sphericity was conducted to confirm that the correlation matrix is an identity matrix, indicating that the factor model in this study is appropriate and that the items are factorable (i.e. KMO =.906, Bartlett's test's $p < .000$). Table 9 shows the results of an oblique rotation of the solution. After excluding the loadings of less than 0.40, it yielded a five-factor solution with a simple structure (i.e. factor loadings were = >.40). A total of seventeen items was used in the factor analysis.

As shown in Table 9, five items were loaded onto Factor 1. These five items are all related to social norms or contribution to society. For example, these include: awareness of social rules (e.g. one must obey traffic rules); willingness to give up ones seat on a train/bus for elderly/disabled passengers; and having a desire to work for the sake of society or people if possible. This factor was named 'Positive Perceptions of Social Norms'.

The four items that were loaded onto Factor 2 are related to the children's reported perceptions about: feeling happy when friends had happy experiences; feeling pain on hearing about sad stories happening to others; worrying about friends who are ignored by others; and feeling angry when someone is tormenting other people. This factor was named 'Empathetic Understanding of Others'.

Table 9. Factor analysis of children's personal and social development vs. after-school programs (Exploratory factor analysis, *maximum-likelihood method, promax rotation, factor loading matrix)*

Items	Cronbach's α	Factor					h^2
		1	2	3	4	5	
Being aware of social rules (e.g. one must obey traffic rules)	.691	.658	-.020	.045	-.188	.050	.383
Willing to give up ones seat on a train/bus for elderly/ disabled passengers		.657	.046	-.023	.060	-.137	.407
Ability to speak politely to the elderly and to speak kindly to younger people		.460	.042	-.038	.055	.097	.315
Believing that one ought to visit family graves several times a year		.453	-.031	-.002	.070	.011	.228
Having a desire to work for that sake of society or other people when possible		.374	.042	.170	.024	-.002	.293
Feeling happy when friends had happy experiences	.717	-.072	.675	-.003	.023	.023	.419
Feeling pain on hearing other people's sad stories		-.002	.657	-.017	-.007	-.023	.399
Worrying about friends who are ignored by others		.030	.630	.035	-.056	-.013	.408
Feeling angry when someone is tormenting other people		.243	.428	-.017	-.006	-.006	.368

Items	Cronbach's α	Factor					h^2
		1	2	3	4	5	
Having an occasional desire to study something more deeply	.641	-.029	.011	.665	-.016	-.051	.388
Curiosity about things that are difficult to understand		.140	-.035	.606	-.071	.026	.434
Having a desire to take on a new challenge with no previous experience		-.061	.035	.480	.168	.069	.362
Being able to speak to new people without hesitation	.603	-.077	-.040	.001	.796	-.031	.313
Being able to greet people in ones neighbourhood		.350	-.048	-.043	.393	.000	.352
Being able to make up with friends after disagreements		.041	.146	.049	.357	.088	.313
Recognising oneself as being a person who cares about ones family	.553	.085	.015	-.077	-.011	.696	.508
Having a sense of liking oneself		-.087	-.026	.066	-.004	.592	.319
Eigen value Percentage of total variance Cumulative percentage of variance		5.017 25.847 25.847	1.2253.796 29.643	1.097 3.008 32.651	1.065 2.759 35.410	1.035 2.411 37.821	
Correlation between factors		1	2	3	4	5	
	1	-	.707	.618	.531	.574	
	2		-	.562	.474	.528	
	3			-	.483	.499	
	4				-	.481	
	5					-	

The three items that were loaded onto Factor 3 are related to children's interests or ambition to learn: an occasional desire to study (something) more deeply; curiosity about things that are difficult to understand; and a desire to take on a new challenge with no previous experience. This factor was named 'Enhanced Interest and Ambition'.

The items loaded onto Factor 4 are related to the following abilities in children: ability to speak to new people without hesitation; ability to greet people in ones neighbourhood; and ability to make up with friends after disagreements. This factor was named 'Positive Interpersonal Skills'.

The items loaded onto Factor 5 represent children's self-perception as a person: i.e. recognising oneself as being a person who cares about one's family; and having a sense of liking oneself. This factor was named 'Positive Sense of Self-esteem'.

Based on the results of the factor analysis, the scale scores of each factor were calculated. The scores were then compared in relation to participation in after-school programs. Table 10 shows the results of the Man-Whitney U Test, with which the scale scores of the five factors were calculated against participation in after-school programs. It showed statistical significance in the three scale scores of Factors 1, 3 and 4. In these findings, the scores of the non-participating children are all higher than those of the participating children. The results will be considered further in Discussion.

Table 10. Participation in after-school programs and the scale scores for the five factors (Results of Man-Whitney U Test)

	n	Average ranks	Standardized U	Sig.	r
Scale scores of **Factor 1**:					
Participant	731	1,742.71	-3.183	.001***	-.052
Non-participant	2,977	1,881.95			
Scale scores of **Factor 2**:					
Participant	731	1,797.53	-1.618	n.s.	-.027
Non-participant	2,977	1,868.49			
Scale scores of **Factor 3**:					
Participant	731	1,769.28	-2.429	.015**	-.039
Non-participant	2,977	1,875.42			
Scale scores of **Factor 4**:					
Participant	731	1,681.37	-4.936	.000***	-.081
Non-participant	2,977	1,897.01			
Scale scores of **Factor 5**:					
Participant	731	1,817.65	-1.063	n.s.	-.017
Non-participant	2,977	1,863.55			

n =3,708, *** p <.01, ** p <.05

Table 11 shows the results of the Kruskal Wallis Test, with which the scale scores of the five factors were calculated against the number of days participating in after-school programs. Statistical significances were found in the two tests conducted on the scale scores of Factors 2 and 3. Based on these results, it can be argued that more frequent participation in after-school programs contributes to an enhancement of children's personal and emotional development, especially in terms of 'Empathetic Understanding of Others' (Factor 2) and 'Enhanced Interest and Ambition ' (Factor 3).

Table 11. Number of days children participated in after-school programs per week and the scale scores of the five factors (Results of Kruskal Wallis Test)

		n	Average ranks	χ^2 value	df	Sig.	r
Scale scores of **Factor 1**:	1–2 days	444	360.42	.813	2	n.s.	.030
	3–4 days	196	375.17				
	5 days or more	91	373.48				
Scale scores of **Factor 2**:	1–2 days	444	354.93	8.643	2	.013**	.320
	3–4 days	196	363.40				
	5 days or more	91	425.63				
Scale scores of **Factor 3**:	1–2 days	444	352.51	6.451	2	.040**	.239
	3–4 days	196	375.91				
	5 days or more	91	410.51				
Scale scores of **Factor 4**:	1–2 days	444	365.16	.064	2	n.s.	.032
	3–4 days	196	369.08				
	5 days or moree	91	363.44				
Scale scores of **Factor 5**:	1–2 days	444	358.40	1.547	2	n.s.	.057
	3–4 days	196	376.81				
	5 days or more	91	379.80				

n = 731, ** p < .05

5 Discussion

Based on the analyses above, the impacts of 'After-school Classes for Children' can be summarised as follows:

- With regard to children's everyday activities, the children's participation and high frequency of participation in after-school programs (i.e. After-school Classes for Children) bore some relation to an increased number of friends with whom children play after school on schooldays.
- With regard to the children's social and emotional development, a scale consisting of five factors was developed based on data from seventeen categories, and was used to measure the impact of 'After-school Classes for Children' on children's social and emotional development.
- Compared with non-participants, participants in 'After-school Classes for Children' showed lower average rankings in the following three factors: 'Positive Perceptions of Social Norms (Factor 1)'; 'Enhanced Interest and Ambition (Factor 3)'; and 'Positive Interpersonal Skills (Factor 4)'.
- Compared with the children who participated less frequently, the children who participated more frequently in 'After-school Classes for Children' showed higher average ranks in both Factor 2 ('Empathetic Understanding of Others') ($r = .320$) and Factor 3 ('Enhanced Interest and Ambition') ($r = 0.239$). It can be argued that 'After-school Classes for Children' are likely to enhance children's social and emotional development with regards to these two aspects.

Concerning the first point, it could be argued that many factors can affect the relationship between participation in after-school activities and the number of friends children play with. While it could mean that participation in after-school programs is associated with the increased number of friends children played with, it could simply mean that children who like playing with other children are more likely to participate in after-school programs. Thus, one should not assume cause and effect without reflection. It should also be noted that it is difficult to discuss this relationship adequately in this study because: 1) the effective sizes of the analysis were not large enough; and 2) the survey was based on a cross-sectional study and thus requires more evidence. Therefore, more controlled data analyses would be necessary to explain this relationship further.

Secondly, it can be suggested that the scale developed in this study is valid as one method of measuring the impact of school-based after-school programs in Japan. As shown in Results, the Cronbach's α was relatively high for some items in each factor, and all five factors were positive in this study. These results are also consistent with preceding research mentioned in the literature review.

The third point is contrary to what was expected. One of the possible explanations for this is the fact that many children do not participate in 'After-school Classes for Children'. More than 70% of the sample children did not attend school-based after-school programs. The reasons for their non-participation could be that these children attend other activities such as cramming schools, private lessons, or sports

clubs instead. It should be pointed out that cramming schools and private lessons are very popular in Tokyo and that the demographics of the surveyed areas are likely to be upper-middle class or higher and thus the parents of these non-participating children can afford out-of-school activities and other learning opportunities on a daily basis. This fact may offset the significant differences between the non-participating children and the participating children. It would be necessary to conduct further analysis focusing on the children who do not participate in either school-based after-school programs or other activities outside of school such as cramming schools. Further analysis would highlight the differences between children who participate in school-based after-school activities and children who spend after-school hours alone or only with other children.

The final point supports the positive impact of 'After-school Classes for Children' on children's social and emotional development. As described above, Japan's 'After-school Classes for Children' consist of various programs including advanced learning activities, supplementary learning activities, sport, traditional performing arts and exchange activities. These various activities facilitate children's communication with other age groups and adults, including local residents. Such experiences should increase the cultural capital of children and contribute to the enhancement of their interests and ambitions as well as their empathetic understanding of others. In the results of the analysis, a higher frequency of participation showed higher average scores in both Factors 2 and 3. This is an indication that the analysis was consistent and rational.

Based on the analyses and discussion above, it can be argued that this study triggers the following new research issues, which have to be addressed in future studies. Firstly, although the survey was conducted by means of a complete enumeration, it cannot be denied that the study areas were restrictive. It is necessary to conduct statistical analysis on a survey in which children are selected by means of a random sampling method. It can also be pointed out that it requires better designed analysis methods such as the RCT method.

Secondly, although it is of principal importance to measure the impact and effects of after-school activity from the perspective of the changes brought to children's awareness and behaviour, it should also be examined from other perspectives. For example, it is important to bear in mind that after-school activities are funded by the Japanese government as part of a policy to promote education through the cooperation of schools, family and community. Therefore, it can be argued that after-school activity should also be examined from the perspective of their impact on school teachers, after-school program coordinators and instructors, parents, and other local residents who are involved in the programs.

It is desirable that future studies on the impact of after-school activity take account of these multiple perspectives. By doing so, more evidence of the effects of after-school programs may be gathered and, as a result, add depth to research in this field in Japan.

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