Extended Education Supported by Parents and the Community: Its Impacts on Japanese Schoolteachers

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Abstract: This article focuses on extended education supported by parents and the community at school and its impacts on schoolteachers' perceptions towards their work in Japan. A national survey using random sampling on elementary schoolteachers was conducted by the author; the results were used to analyze the relationships between the following variables: the existence of SSRHs, parent- and community-supported extended education, and teachers' perceptions toward their work and that of the local network. While several studies in the field have focused on extended education's effects on children, the current study is valuable because it discusses how extended education can affect other educational stakeholders. This study's findings therefore identify a new area of investigation that can be used to evaluate extended education's efficacy.

Keywords: Extended education, Support by parents and the community, Impacts on schoolteachers, Factor analysis, SEM

Introduction

Although less prevalent than those on Western countries, there are still several studies that evaluate Japan's extended education program (including after-school classes for children) as implemented by the Ministry of Education, Culture, Sports, and Technologies (MEXT) in 2007. Furthermore, as extended education normally targets children and youth, it is understandable that the current literature (both in Japan and internationally) has focused predominantly on this population.

However, this focus is problematic, as there is little information on how extended education affects other educational stakeholders, making it harder to fully understand this pedagogical method. In other words, even though there are studies focusing on other aspects and stakeholders of extended education, these studies still focused on how these various factors affect children. This ultimately means that there is insufficient research into how other extended education participants and relevant personnel (e.g., parents, community residents, schoolteachers, etc.) are affected.

This article therefore analyzes the relationship between the extended education system as supported by parents and the community and its impacts on Japanese

 https://doi.org/10.3224.ijree.v5i1.02

schoolteachers. Through this, the author will elucidate how extended education affects non-youth populations. Prior to the analyses, we will discuss Japan's extended education system and contextualize this research using the existing literature. We will develop scales to help identify teachers' perceptions towards their work and that of the local network (i.e., between the school, the students' families, and the local community). An analysis of how parent- and community-supported extended education programs affect schoolteachers will also be provided.

Review of the Literature

Studies Evaluating Extended Education and Its Impact in Japan and other countries

There are many studies analyzing extended education's effect in various contexts. This includes studies in Germany (Stecher & Maschke, 2016), the UK (Dyson & Kerr, 2016), the USA (Huang, 2016), Sweden (Klerfelt, 2016), Australia (Welsh, 2016), and Japan (Kanefuji, 2016), all of which provide an evaluation of each nation's school-based after-school activities and educational policies. In this subsection, we will only review the literature on the US and Japan due to both space constraints and the fact that quantitative evaluation studies on this subject are mostly American-based (Dyson & Kerr, 2016, p. 89).

Based on 52 selected studies in her review of American after-school programs, Huang showed that they have a wide range of effects (Huang, 2016, pp. 167–212). More specifically, after-school programs were found to have a positive impact on students' academic achievement scores (Arcaira, Vile, & Reisner, 2010; Reisner et al., 2004; Russell et al., 2007; Vandell, Reisner, & Pierce, 2007). The review also looked at students' attitudes towards school and learning as precursors to actual achievement outcomes. After-school programs were found to improve students' regular school day attendance, and learners reported higher aspirations regarding finishing school and going to college (Huang et al., 2004). Furthermore, after-school program participants were significantly less likely to drop out of school when compared to matched non-participants (Huang et al., 2007; Arcaira, Vile, & Reisner, 2010).

Other key findings in the literature concerning the effect of extended education are as follows. First, the participants and their parents felt safe during and after the after-school programs (Russell et al., 2010; LaFleur et al., 2011; Russell & Woods, 2012). Furthermore, students participating in quality after-school programs showed significant increases in their self-perception, self-confidence, and self-esteem (Durlak & Weissberg, 2007). After-school programs also helped improve participants' personal and social skills (Vinson & Hutson, 2014), conflict resolution skills (Reisner et al., 2004), decision-making ability, and leadership skills (Lyon, Jafri, & Louis, 2011); they also reduced problem behaviors (Vandell, Reisner, & Pierce, 2007; Durlak et al., 2010). Additionally, qualified after-school programs contribute to children's health (Mahoney et al., 2005; Huang & CREST team, 2012). Furthermore,

in terms of family and community involvement, 37 of Huang's (2016) 52 reviewed studies addressed their involvement in these programs[1].

On the other hand, studies evaluating Japanese extended education emerged after MEXT introduced its After-school Classes for Children (ACC) program in Japan. Many of these studies are descriptive, only introducing initiative projects and clarifying their characteristics (OERF 2008, 2009; SRDI 2008a, 2009; Yanagisawa, 2013).

However, there are some Japanese-based quantitative studies on after-school programs' effect on children. The Systems Research and Development Institute of Japan (SRDI) clarified the positive behavior modifications and the transformed perceptions of children in after-school programs by conducting questionnaire surveys on children, parents, and coordinators (SRDI, 2008b). Other studies have looked at how these programs affected children's social and emotional development; one study found that students participating in extended education were more socially and emotionally developed than their non-participating peers (Kanefuji, 2015). However, only a few rigorous empirical studies have utilized methodologies like random sampling and randomized control testing.

Regarding teachers' perspectives, some research has been conducted concerning their assessment of children and youth in different ACC programs provided within and outside of schools in Japan (Kanefuji & Iwasaki, 2013). More than 70% of these programs were provided at schools; the remainder was provided externally (e.g., at community learning centers, children's halls, other institutions) (MEXT 2014). Based on a random sampling of public elementary schoolteachers, it was found that teachers in schools with in situ after-school programs had more positive relationships with the children and students than their counterparts with after-school programs provided outside schools (Kanefuji & Iwasaki, 2013). Even though Japanese schoolteachers are not expected to provide and instruct in these after-school programs, the results suggested that in situ after-school programs may have a positive effect on schoolteachers.

Based on the above review, it is clear that extended education's role in children's lives has been extensively researched. However, the literature rarely focused on how other stakeholders (i.e., parents, the community, schoolteachers) are affected. This observation may be attributed to researchers' assumption that other stakeholders are only inputs in the extended education system.

Context and Methodology

Systems approach to analyzing and understanding extended education

Originally, the systems approach was proposed as the General System Theory by Austrian biologist Ludwig von Bertalanffy (Bertalanffy, 1968) and his colleagues, who were economists, mathematical biologists, and physiologists. According to the general systems theory, a system is defined as a group of interacting, interrelated, or

interdependent elements that form a complex whole. Systems therefore have inputs, processes, outputs, and feedback mechanisms.

One reason we focus on extended education's impacts on schoolteachers is that we assume that they are not simply inputs in the extended education system, but are instead part of its output. Furthermore, although some studies consider extended education and its program development process as an input-process-output system model, we believe this interpretation does not account for feedback mechanisms. When we presume that extended education is a system under the systems approach, we should consider how input mechanisms may also be affected by the output and the processes. This means the input, process, and output are not static; instead, they are dynamic mechanisms whose components interact with one another.

Based on the basic characteristics of the systems approach (Nakano, 1988), we now present the fundamental premises that will be used here to analyze extended education as a system. Firstly, extended education (including after-school programs) and its planning process can be understood as an input-process-output system, and it is a cyclical open system. Secondly, if it is assumed that extended education undergoes development processes, this implies that the extended education system includes feedback mechanisms in addition to inputs, processes, and outputs. Thirdly, this study aims to analyze and clarify the relationships between each component in the extended education system, but our analyses are not meant to be used to control or manage the system, as we need to better understand the system first.

Rationale for selecting schoolteachers as target population

There are two additional reasons for why we focus on schoolteachers in this study. Firstly, extended education in Japan is expected to provide improvements to students' learning environments and support based on strong cooperation between the school, the parents, and the community. As mentioned, Japanese schoolteachers are neither responsible for nor expected to direct and instruct in ACCs at their schools. ACCs are volunteer-operated (i.e., by parents, community residents) educational, sports, and cultural activities or programs that are offered to elementary and junior high school students and are predominantly provided in situ during after school hours. The parents and community residents who volunteer to facilitate these activities form an organization called the School Support Regional Headquarter (SSRH). However, despite being run by the SSRH, these activities are under the jurisdiction of the municipal government.

The ACC and SSRH systems were introduced in 2007 as part of the programs outlined in the National Educational Policy. They were designed to promote after-school activities through increasing cooperation between schools, parents, and regional residents in Japan. Financial support can be obtained from the municipal, prefectural, and national educational boards, each board providing a third of the funding. Figure 1 shows the total number of ACCs and SSRHs during 2012–2015, where both are seen to have increased[2]. According to MEXT statistics, 48% of public

elementary schools have ACCs and 31.9% of elementary and junior high schools have SSRHs (MEXT, 2016).

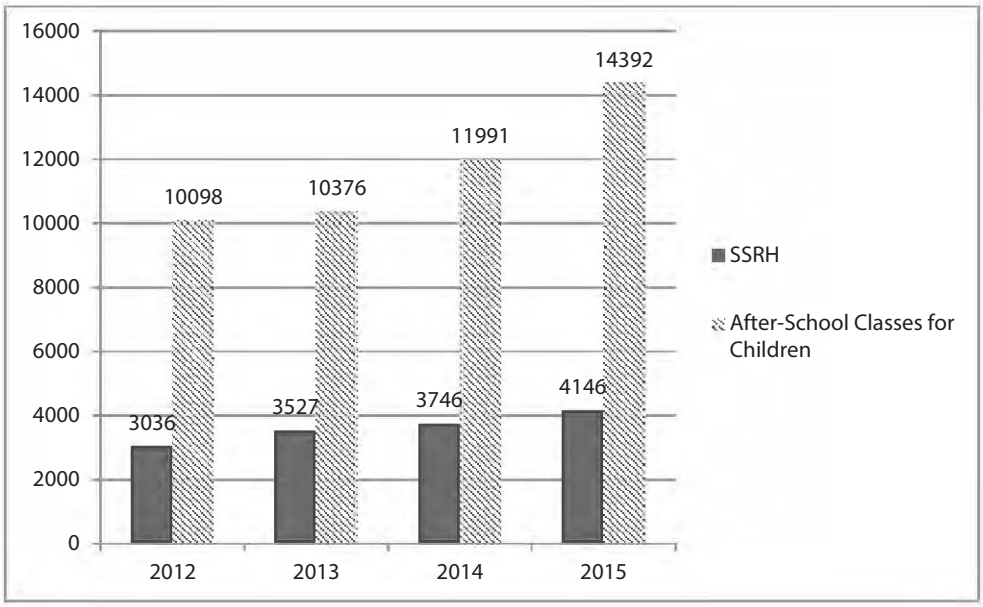


Figure 1. Numbers of Implementation on SSRH and After School Classes for Children in Japan

According to the 2013 TALIS survey[3], Japanese schoolteachers have very difficult working conditions (OECD, 2014; NIER, 2014). Teachers in Japan have the longest total working hours and spend the most time leading extracurricular activities out of the surveyed 34 countries. Moreover, Japanese schoolteachers spend far longer hours doing office work. Their self-efficacy and job satisfaction levels are also very low compared to the averages from other participating countries. This study will therefore address this serious issue by elucidating how parent- and community-supported extended learning programs can improve the teachers' current working conditions.

Research Questions

This article seeks to identify extended education's impact on schoolteachers in Japan. We investigate the differences in teachers' reactions to extended education programs that are supported by parents and the community compared to those that are not. In this study, the following three research questions will be addressed[4].

1. Are there differences in schoolteachers' perceptions of cooperation between the school, parents, and the community depending on whether extended education programs are supported by parents and the community?

2. Are there differences in schoolteachers' perceptions towards their work depending on whether extended education is facilitated by parents and the community?
3. Is there a relationship between the conditions of extended education supported by parents and the community, teachers' perceptions towards their work, and teachers' perceptions of cooperation between the school, parents, and the community?

Method

Definition and use of key concepts

Criteria for determining parent- and community-supported extended education programs

Firstly, parent- and community-supported extended education is defined as systematic educational activities that support the school and the students; these activities are mainly provided by parents and the community residents at school. The current conditions of extended education supported by parents and the community at each school are surveyed from two aspects. First, we asked teachers if there was a SSRH at their school; second, we asked teachers if there were actual parent- or community-run activities held at their school. We split these activities into twelve categories, as shown in Table 1. We also added an additional factor, the supporting score from parents and the community, which is derived from the sum of frequencies collected by using multiple answers in Table 1's categories.

Table 1. Supported activities provided by parents and community residents at school

1	watching and guiding the children to and from school for safety control
2	maintaining the gymnastics hall and athletic ground
3	operating and administrating the library room
4	supporting activities in school sports festival and school trip
5	reading to children during before school at classroom
6	providing a wide variety of after-school programs
7	maintaining flowerbeds at school
8	point rating drills during before and after school with children
9	speaking as a guest at regular classes
10	educational leading as a member of team teaching
11	participating to meetings as a member of the community school management meeting
12	other activities to support children and school at school

Table 2 shows the current conditions of extended education supported by parents and the community in this study. Firstly, 26.1% of schoolteachers work in schools with a SSRH. The descriptive statistics of the supporting score from parents and the community is shown in

Table 2. Teachers who are working at school that has a SSRH in this study

	Teachers who are working at school with SSRH	Teachers who are working at school with no SSRH	NA	Total
n	316	682	215	1213
%	26.1	56.2	17.7	100.0

Table 3, and the average score is approximately 4.6. This means that schools are supported by parents and the community with, on average, about five of the twelve surveyed categories of support activities.

Table 3. Descriptive Statistics of 'Supporting Score from Parents and the Community'

N	Minimum	Maximum	Mean	SD
1213	1.00	11.00	4.5727	1.83341

Scale measuring teachers' perceptions towards their work

Teachers' perception of their work was examined through 20 Likert scale items. These items were created and revised with reference to the "Teachers Perceptions Survey" (Recruit Management Solutions, 2007). The items were selected and used to develop a scale for examining teachers' perceptions of their work through factor analysis (Table 4).

The protocol adopted for the factor analysis was to use maximum likelihood estimation and to rotate the matrix of loadings to obtain independent factors. More specifically, the promax (oblique) rotation was used. The Kiser-Meyer-Olkin Measure of Sampling Adequacy and Bartlett's Test of Sphericity showed that the factor model in this study is appropriate and that the items are factorable (i.e., KMO = .872, Bartlett's test's $p < .000$, df = 105, approximate $\chi 2 = 9410.910$). Table 4 shows the results of an oblique rotation of the solution. It yielded a four-factor solution with a simple structure (i.e., factor loadings were > .40).

As shown in Table 4, six items were loaded onto Factor 1. These six items are all related to teachers' feelings of congeniality and reward with respect to their job. This factor was named Feel Rewarding. The seven items that were loaded onto Factor 2 are related to teachers' feelings of being overloaded at work. This factor was named Feel Burdened. The five items that were loaded onto Factor 3 are related to the teachers' positive feelings about their job in terms of working with their colleagues at their current school. This factor was named Feel Positive Towards Colleagues. The items loaded onto Factor 4 are related to feeling stuck in a rut and monotonous when working. This factor was named Feel Stuck.

Table 4. Factor analysis results of teachers' perceptions towards their work (Maximum-likelihood Method, Promax Rotation, Eigenvalues of 1 and above)

	No. of items	Cronbach's α	Feel rewarding	Feel burdened	Feel positive towards colleagues	Feel stuck
1. I can bring out my best in my current job.	6	0.876	.856	-.034	-.031	.081
2. I am suited for my current job.			.824	-.109	-.117	.124
3. I can shine in my current job.			.806	-.089	-.022	.158
4. I am proud of my current job.			.691	.095	.088	-.072
5. I feel my current job is rewarding.			.610	.076	.105	-.193
6. I feel I am developing as a person through my current job.			.587	.141	.106	-.181
7. The job is too busy and my life revolves around the job.	7	0.827	.055	.827	-.056	-.030
8. The job is too busy to carry on in the longer term.			-.334	.745	-.081	.094
9. There is too much responsibility for me in my current job.			-.102	.632	.088	.100
10. I feel mentally exhausted by conversing with pupils/students or their parents.			.063	.614	.012	-.123
11. I often stay at work after hours and work overtime.			-.072	.565	-.005	.094
12. I cannot handle the job with my previous experience and knowledge.			.108	.557	-.084	-.121
13. I often bring work back home.			-.167	.462	.144	.098
14. I am lucky with work colleagues at school.	5	0.455	-.059	.024	.950	.047
15. I enjoy working with fellow teachers and staff.			.068	.018	.889	.069
16. I often learn from other teachers and staff.			-.020	.095	.795	-.033
17. I feel lucky to be working at my current school.			.249	-.086	.547	.009
18. I am often troubled by relationships at work (reverse item).			.115	.272	-.502	.091
19. The current job is monotonous and I don't find it challenging.	2	0.781	-.003	-.056	-.021	.830
20. I feel I am in a rut as there is too much repetition.			-.091	.067	.049	.816
	Factor contribution		5.894	2.428	1.692	1.009
	Cumulative contribution ratio		29.47%	41.61%	50.07%	55.12%
Correlation coefficients among factors			1	2	3	4
	1		1.00	-.352	.477	-.478
	2			1.00	-.201	.224
	3				1.00	-.456
	4					1.00

Scale measuring teachers' perceptions on cooperation between the school, parents, and the community

To analyze the teachers' perceptions of cooperation between the school, parents, and the community, this study established seven survey items and analyzed them using factor analysis to develop a scale (see Table 5). More specifically, the method used was the same as the one used for creating the scale for teachers' perceptions of their work. The precision of the analyses' results was good (i.e., KMO = .730, Bartlett's

test's $p < .000$, $df = 21$, approximate $\chi 2 = 1965.836$). It yielded a two-factor solution with a simple structure. Table 5 shows the results of the solution.

Four items were loaded onto Factor 1. These four items are related to teachers' positive feelings and anticipation in relation to the effects of cooperation between the school, parents, and the community. This factor was named Regarding Cooperation. The three items that were loaded onto Factor 2 were related to the teachers' negative feelings in relation to cooperation between the school, parents, and the community. This factor was named Rejecting Cooperation. Using these scales, I analyzed the relationship between teachers' perceptions of their job and those of cooperation between the school, parents, and the community, as well as the extended education supported by parents and the community.

Table 5. Factor analysis result of teachers' perceptions on cooperation among school, parents and the community (Factor Analysis with Maximum-likelihood Method, Promax Rotation, Eigenvalues of 1 and above)

	# of items	Cronbach's α	Regarding Cooperation	Rejecting Cooperation
1.Cooperation with parents and community has good effects to promote children's academic development	4	0.730	0.837	-0.016
2. Cooperation with parents and community has good effects to promote children's norm consciousness.			0.786	0.056
3. Cooperation with parents and community is necessary for school administrations.			0.743	-0.025
4. Cooperation with parents and community aid in lightening teachers' overload of job.			0.356	0.01
5. Human resources other than teachers are needed for liaison and coordination to cooperate with parents and community	3	0.579	0.084	0.735
6. It is not essentially teachers' work to do liaison and coordination with parents and community.			-0.222	0.542
7. It is difficult to secure time for cooperation with parents and community.			0.123	0.457
	Factor Contribution		2.08	1.04
	Cumulative contribution ratio		29.66%	44.53%
Correlation coefficients among factors			1	2
	1		1.000	.47
	2			1.000

Data and Sample

The data was collected by the National Elementary School Teacher's Survey, which was distributed to elementary school teachers as a questionnaire in 2012 (Kanefuji, 2012). Table 6 shows the anticipated number of samples, the number of valid responses, and the survey response rate. Ultimately, 1,213 samples were used in the subsequent analyses. The survey period and the sampling method were as follows:

Survey period: From September 24–October 23, 2012
Survey method: Questionnaire research by mail
Sampling method: Out of 21,121 state schools teachers throughout Japan, 600 schools were selected using a stratified two-stage random sampling method.

Table 6. Samples and Valid Response Rate of the Survey

	Planned # of Samples	# of Valid Responses	Valid Response Rate
# of School	600	273	45.5%
# of Elementary School Teachers	3,000	1,213	40.4%

The stratification was done using the number of regions and the total number of students per school. The classification number of regions was twelve and that of the total number of students was two. Five copies of the questionnaire were sent to each school. The questionnaire only targeted teachers in charge of classes. Table 7 shows the baseline attributes of the samples. The male to female ratio was about 40:60, and the proportion of each age group was about 20% to 30%.

Table 7. Baseline attributes of the sample

Age & Gender	Real number	%
Age (& Grade): 30 years old less or equal	194	16.0
31–40 years old	232	19.2
41–50 years old	409	.33,8
51–60 years old	373	30.8
61 years old or more	2	0.2
Gender: Male	454	37.4
Female	751	61.9
N/A	9	0.7
Total	1,213	100.0

Results

Effects of SSRHs on schoolteachers' perceptions of their work

Table 8 shows the results of the cross-sectional analyses between the presence of SSRHs at schools and the teachers' perceptions of their work. The top scores were from teachers who had a SSRH at their school, while the bottom ones were from those who did not. The percentage represents the positive responses ("apply very much" and "somewhat apply").

It is evident that the presence of SSRHs clearly affected teachers' perceptions of their work. Teachers whose schools have SSRHs felt significantly less burdened by extended education activities, which are run by parents and the community. These teachers also perceived that the volunteer-run activities were very active. Note that the above differences were all statistically significant.

Table 8. Relationship between the Presence of SSRHs at School and Teachers' Perceptions of their Work

	National ES Teachers	Effect Size
1. Feel less burden about after-school hours involving volunteer activities of community residents	50.6% *** 35.1%	.151***
2. Feel that intercommunication is increasing at their school	77.0% ** 68.3%	.093**
3. Volunteer activities supporting their school are very active	76.3% *** 65.6%	.158***

Note: 1. % represents the positive responses ["apply very much" and "somewhat apply"]

2. The top scores are the responses of the teachers who have a SSRH at their school, and the bottom ones are those of teachers who do not have a SSRH at their school.

3. *** $p < .001$, ** $p < .05$ Effect Size=Cramer's V

Correlation coefficients between variables

Table 9 shows the results of the correlation coefficients between variables. Factors of teachers' perceptions towards their work and factor scores of teachers' perceptions on cooperation between the school, parents, and the community were mutually correlated. The factors of Feel Rewarding and Feel Positive Towards Colleagues in teachers' perceptions towards their work were positively correlated with Regarding Cooperation, and negatively correlated with Rejecting Cooperation. In contrast, Feel Burdened and Feel Stuck were positively correlated with Rejecting Cooperation, and negatively correlated with Regarding Cooperation.

The correlations between teachers' perceptions and whether extended education activities were operated by other educational stakeholders show that the supporting scores by parents and the community were positively correlated with Feel Reward-

ing and Regarding Cooperation, so thus teachers' perceptions also have positive correlations with the existence of SSRHs.

Table 9. Pearson's correlation coefficients among variables

		1	2	3	4	5	6	7	8
Teachers' Perceptions towards their work	1 Feel Rewarding	1	-.395**	.520**	-.540**	.262**	-.075*	.031	.078**
	2 Feel Burden		1	-.224**	.264**	-.014	.235**	.002	.018
	3 Feel Positive t/w Colleagues			1	-.512**	.272**	-.090**	.008	.055
	4 Feel Stuck				1	-.226**	.160**	.019	-.051
Teachers' Perceptions on cooperation among school, parents and community	5 Regarding Cooperation					1	.019	-.026	.139**
	6 Rejecting Cooperation						1	.080*	-.007
Conditions of extended education supported by parents and community	7 Existence of SSRH							1	.197**
	8 Support Score by Parents & Community								1

** p < .01, *p<.05

Relationships among variables: The results of t-test for paired samples

Tables 10 to 12 show the results of the paired sample t-tests. In these analyses, each score is divided into three groups using the tertile value. The groups with the lowest and the highest scores were used to compare each t-test. The results show statistically significant differences between the factor scores of teachers' perceptions towards their work, the scale scores on regard for cooperation, and the support scores by parents and the community.

Teachers who feel rewarded at work and have positive feelings towards their colleagues had high scale scores for Regarding Cooperation. On the other hand, teachers who scored high on Feel Burden and Feel Stuck also scored high on Rejecting Cooperation. Furthermore, teachers who received high supporting scores by parents and the community scored high on Regarding Cooperation. There were no

differences in the scores for Rejecting Cooperation between well-supported teachers and less supported teachers

Table 10. The t- test for paired samples: Teachers' Perception towards their work and that of on cooperation among school, parents and the community 1

Factor Scores of Teachers' perceptions towards their work	Scale Scores of Regarding Cooperation	N	mean	SD	SEM	t
REGR factor score 1: Feel Rewarding	Group of the lowest scores	524	-.2161657	.93970592	.04105124	-7.151***
	Group of the highest scores	649	.1742242	.92131674	.03616485	
REGR factor score 2: Feel Burden	Group of the lowest scores	524	-.2517167	.99778022	.04358823	-8.259***
	Group of the highest scores	649	.2007109	.87675174	.03441552	
REGR factor score 3: Feel Positive Towards Colleagues	Group of the lowest scores	524	-.0109293	.88684723	.03874210	-.462n.s.
	Group of the highest scores	649	.0139072	.93705330	.03678256	
REGR factor score 4 : Feel Stuck	Group of the lowest scores	524	.1955641	.90004416	.03931861	6.692 ***
	Group of the highest scores	649	-.1537363	.87942812	.03452057	

Note: Scale Scores are divided to three groups by using tertile value. The groups of the lowest and the highest are used in the t test. *** p < .001

Table 11. The t- test for paired samples: Teachers' Perception towards their work and that of on cooperation among school, parents and the community 2

Factor Scores of Teachers' perceptions towards their work	Scale Scores of Rejecting Cooperation	N	mean	SD	SEM	t
REGR factor score 1: Feel Rewarding	Group of the lowest scores	530	.0722989	.95066244	.04129414	2.312*
	Group of the highest scores	629	-.0570099	.94640049	.03773546	
REGR factor score 2: Feel Burden	Group of the lowest scores	530	.1059304	.93759803	.04072666	3.362***
	Group of the highest scores	629	-.0837561	.97270678	.03878436	
REGR factor score 3: Feel Positive Towards Colleagues	Group of the lowest scores	530	-.1855346	.86921541	.03775630	-6.341***
	Group of the highest scores	629	.1510586	.92560146	.03690615	
REGR factor score 4 : Feel Stuck	Group of the lowest scores	530	-.1244291	.90376561	.03925707	-4.435***
	Group of the highest scores	629	.1108640	.89638952	.03574139	

Note: Scale Scores are divided to three groups by using tertile value. The groups of the lowest and the highest are used in the t test. *** p < .001 , * p < .05

Table 12. The t-test for paired samples: Teachers' Perception on cooperation among school, parents and community and Conditions of extended education supported by parents and the community

Scale Scores of Teachers' Perceptions on cooperation	Supporting Score from Parents & the Community	n	mean	SD	SEM	t
Scale Scores of Regarding Cooperation	Group of the lowest scores	598	13.2525	1.90779	.07802	-3.048**
	Group of the highest scores	602	13.5797	1.81080	.07380	
Scale Scores of Rejecting Cooperation	Group of the lowest scores	589	8.7453	1.54952	.06385	0.629n.s.
	Group of the highest scores	596	8.6896	1.49934	.06142	

Note: Scale Scores are divided to three groups by using tertile value. The groups of the lowest and the highest are used in the t test. *** $p < .001$

Pass analyses between variables

We conducted pass analyses to verify the structure between the variables. Pass analysis is a component of structural equation modeling (SEM). By using this method, we can assume a causal model and verify the relationships between variables structurally, in addition to evaluating the models' adequacy with the data.

Figures 2 to 4 show the results of pass analyses between the three kinds of variables we focused on in this study. In these analyses, we made very simple causal models, which demonstrated that support from parents and the community affected teachers' perceptions of the cooperation between the school, parents, and the community. In addition, their perceptions affected the Feel Rewarding, Feel Positive Towards Colleagues, and Feel Stuck factors of how they felt about their work. That is to say, we assumed that the teachers' perception of cooperation functions as an intervening variable between the conditions of extended education and their perception towards their work.

Figure 2. A pass analysis among variables: A causal model among Conditions of extended education, Teachers' Perception on Cooperation, and Teachers' Perception towards their Work: Feel Rewarding

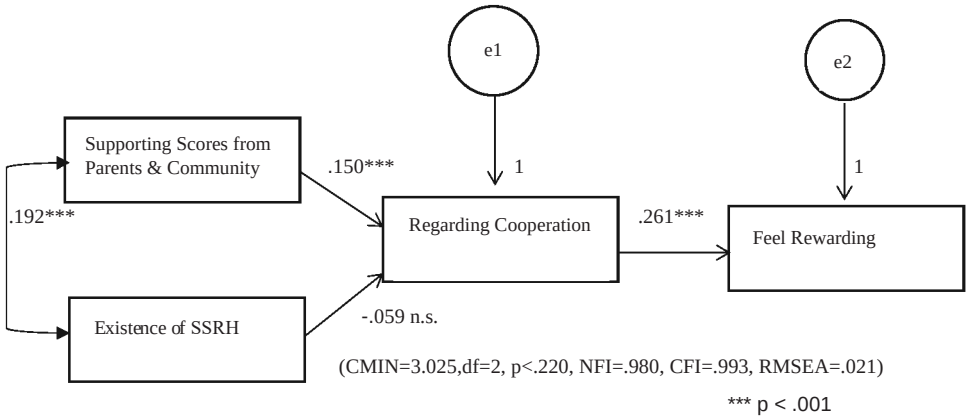


Figure 3. A pass analysis among variables: A causal model among Conditions of extended education, Teachers' Perception on Cooperation, and Teachers' Perception towards their Work: Feel Positive Towards Colleagues

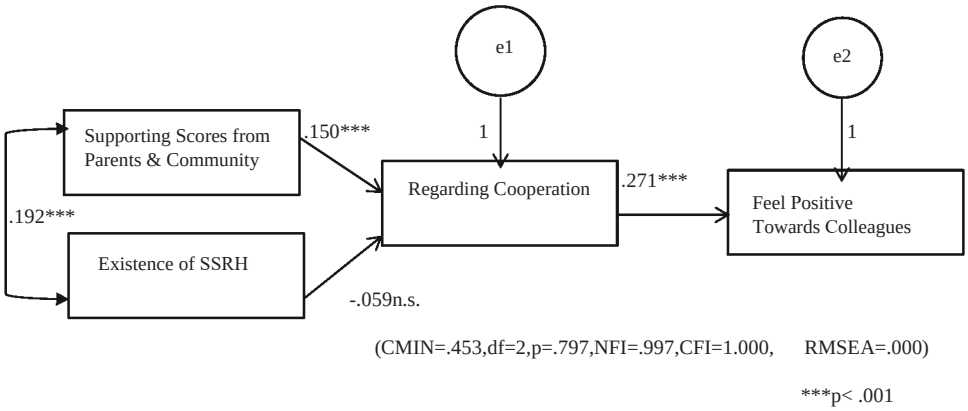
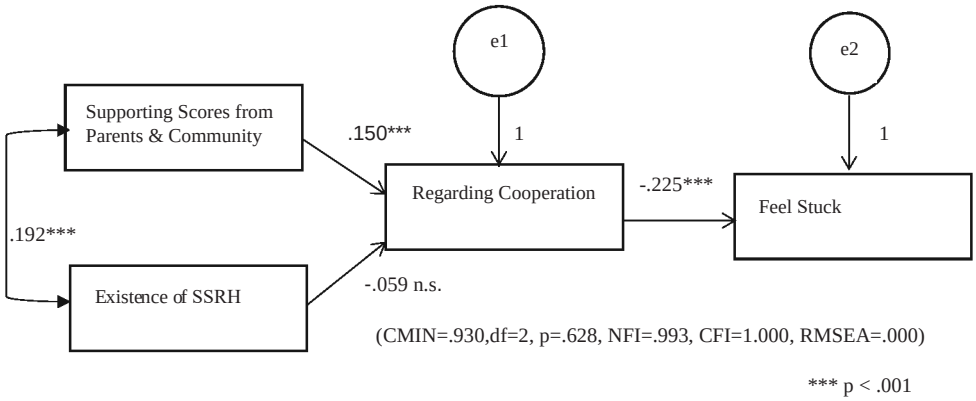


Figure 4. A pass analysis among variables: A causal model among Conditions of extended education, Teachers' Perception on Cooperation, and Teachers' Perception towards their Work: Feel Stuck



According to the results of the pass analyses, the teachers' perceptions on Feel Rewarding, Feel Positive Towards Colleagues, and Feel Stuck were all well-explained by the causal models. The fit indexes (i.e., CMIN, NFI, CFI, RMSEA) were all acceptable. These models were thus considered to fit the data very well.

Discussion

This study focused on extended education supported by parents and the community and clarified its effect on Japanese schoolteachers. From the analyses, we found several relationships between the variables. This study provides a practical and an academic contribution.

The conditions of extended education supported by parents and the community have resulted in considerable differences in schoolteachers' perceptions towards their work and towards cooperation between the school, parents, and the community (thus verifying research question 3). Well-supported teachers thought more positively about cooperation between the school, parents, and the community (thus verifying research question 1). Moreover, these teachers also felt more rewarded, had more positive relationships with colleagues, and were less burdened at work (thus verifying research question 2). This means that extended education supported by parents and the community had positive impacts on schoolteachers' perception towards their work. All three research questions in this study were therefore verified.

The results also suggested that the presence of SSRHs positively affected teachers' perceptions towards their work. Even though this effect was not statistically significant in the pass analyses, it may still serve to increase the number of volunteer-operated activities. Furthermore, as schoolteachers with a SSRH at their school felt less burdened by after-school activities (Table 8), this would suggest that teachers' after-school workloads and work hours in general were also reduced by SSRHs.

The involvement of parents and the local community in these after-school programs, in addition to SSRH activity, may therefore improve schoolteachers' working environment in Japan. Thus, from a practical viewpoint, it would be beneficial to increase the number of supported extended education programs and SSRHs across schools nationwide.

At the same time, it should be noted that some schoolteachers rejected cooperation with parents and community residents (Table 5). One possible explanation for this is that schoolteachers may fear that cooperation with these volunteers will take more time and that additional human resources (other than the teacher) are needed to ensure positive cooperation (Table 5). Some schoolteachers may also fear that they will lose classroom control and authority through the cooperative process. Therefore, it is very important to educate teachers to realize that working with parents and the community in extended education does not increase their workload, and that it will instead provide various benefits, such as reducing their after-school workload.

Although after-school programs and in-class curriculums are not directly connected, it is important to recognize that Japanese schoolteachers generally spend more time than their international peers leading extracurricular activities (7.7 hours per week versus 2.1 hours; see OECD, 2014). Thus, by reducing their after-school workload, teachers will experience less stress and will be able to focus more on their in-class activities, which may increase their overall productivity and job satisfaction. Volunteer-supported extended education programs are therefore valuable in that they indirectly improve teachers' working conditions.

Conclusion

Based on these results, we may also say that extended education is an open system that is affected by both internal and external factors; in addition, each component in the system interacts with the others. Therefore, in evaluating extended education programs, it is necessary to further examine the various factors and components in the system. The effects on schools and teachers as well as on parents and local residents should be analyzed more extensively, in addition to performing a detailed examination of their effect on children and youth. Furthermore, when examining extended education as a system, researchers need to keep in mind that each component is not static and independent, but instead makes up a system with mutual interactions.

By accumulating more research, we will gain a more holistic understanding of extended education and clarify its effects. This means that various contexts and perspectives need to be discussed and evaluated through future research. We believe these evaluation studies on extended education can also enhance the quality of evaluation studies as a whole.

While this study adds to the literature on parent- and community-supported extended education and its impact on schoolteachers, several limitations should be noted. First, while we analyzed data collected by using a random sampling method, it surveyed only elementary schoolteachers in Japan and did not include teachers at other stages of education (e.g., middle and secondary schoolteachers). Different

results may have been found by using data on schoolteachers from different stages. A second limitation is that this study does not account for the supported activities' quality because this data could not be collected through our questionnaire survey. Thus, it is possible that the quality of the parent- or community-supported activities may have significantly different impacts on schoolteachers. A third limitation is that this study used data collected from cross-sectional research. If we want to understand extended education in more detail as a system, we must analyze it with longitudinal data. Future studies that use these methods and provide exhaustive analyses will contribute to the academic progress in this field of study.

Endnotes

1. In England, some studies have reported that the relationship between parents' interventions and children's achievement scores are unclear, even though many studies strongly support this relationship (Dyson & Kerr, 2016, pp. 94–96).
2. The activities are conducted based on a national educational policy derived from an amendment to the Fundamental Law of Education in 2008. Act 13 was established with the purpose of promoting cooperation between schools, parents, and communities in educational activities.
3. Japan participated in TALIS (OECD, TALIS: Teaching and Learning International Survey) in 2013.
4. This study project was conducted under a grant from the Japan Society for the Promotion of Science (JSPS). Research head: Kanefuji, F., Research No. 23653272, (2011–2013).

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