

## Japanese nursery teachers' time management for assessment, recording, planning, and preparation

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The purpose of this study was to examine Japanese teachers' time spent for assessment and recording, as well as planning and preparation at their nursery center. A total of 1064 teachers from 565 centers were asked to write down the time spent for teaching and care, assessment and recording, planning and preparation, on a certain day. They all spent more than 8 hours at their center on the recorded day. Prior informed consent was obtained from their center managers. The mean time for assessment and recording was 23.4 minutes, however, 28.7% of the teachers spent no time on the task, while that of planning and preparation was 24.3 minutes, with 45.0% of the teachers not spending time on the task. Comparisons between teachers indicated that the time spent on paperwork and meetings was shorter for the former group of teachers than for the latter. Teachers' service years also affected their time use for the tasks. These results were discussed in relation to teachers' role, ability for time management, and developing the ability through teacher training.

According to Vannest (Vannest & Parker, 2010; Vannest & Hagan-Burke, 2010), most research on effective educational programs and instruction emphasizes time usage. Among them, one of the most famous studies is Carroll's (1989). The Carroll model accounts for variations in school learning with 5 classes of variables: aptitude, opportunity to learn, perseverance, quality of instruction, and ability to understand instruction. All the variables can be related to time usage; the time for teachers' design of lessons, or the time for students' necessity for learning. Rice (1999) revealed that class size has an impact on the teachers' use of both instructional and noninstructional time, and that the effect varied by subject area, type of student, and amount of time teachers spend planning for class. This finding suggests that examining variables that had an impact on time usage would be needed.

Although the importance of time usage has been confirmed, teachers' instructional time is not necessary in Japanese nursery centers. Most of them are open for more than 11 hours per day (Uzuhashi, 2009) to include 8 hours of parents' work time and 3 hours of their commuting time. However, nursery teachers' working time is 8 hours a day, based on the Labor Standards Act; therefore, children need 2 or more teachers daily. Time for transition briefing among teachers or time for assessment and recording would be absolutely imperative in Japanese nursery centers.

Planning and preparation are also needed for improving the quality of nursery teaching and care. Guidelines for Nursery Care at Daycare Centers (Ministry of Health, Labour and Welfare, 2008, 2017) recommend a good plan-do-check-act (PDCA) cycle for nursery teaching

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and care. Therefore, teachers must plan and prepare for it. The present study focused on both time of assessment and recording, as well as planning and preparation.

Regarding time usage, Nihon Hoiku Kyokai, the association of Japanese nursery centers, showed that the average time for assessment and recording, as well as planning and preparation by Japanese nursery teachers were 23.6 and 24.2 minutes, respectively (Nihon Hoiku Kyokai, 2012). Nihon Hoiku Kyokai (2012) asked the principals of one-twentieth of nursery centers in Japan to give a questionnaire to 3 teachers whose years of experience were less than 3, from 4 to 10, and more than 10, respectively. As this procedure might have distorted the results, the author (unpublished) asked all the teachers in all the centers in a city to answer the questionnaire. The results were similar to those of Nihon Hoiku Kyokai (2012). These findings indicated that time usage by Japanese nursery teachers has to be analyzed from several points of view for political and practical purposes.

The aim of the present study was to examine how Japanese nursery teachers use their time in their center, and which variables affect their time for assessment and recording, as well as that for planning and preparation. Vannest and Parker (2010) compared two types of approaches for measuring teachers' time: (1) interview or questionnaire, and (2) short observation samples. They suggested that both approaches were useful, however, broad cross-sectional data from a large number of teachers can yield broad conclusions and are more likely to be useful for broad informing policies. Based on these suggestions, the present study re-analyzed the data of Nihon Hoiku Kyokai (2012). More concretely, focusing on teachers who work for more than 8 hours daily, the differences between teachers who spent time for assessment, recording, planning, and preparation and those who spent no time for them were calculated and compared with their workplace and personal information. The present study also examined the differences among teachers with under 3, 4 to 10, and over 10 service years. The examination will contribute to on-the-job training for each center.

## Method

### Participants

Nihon Hoiku Kyokai (2012) examined 1548 nursery teachers from 653 centers across Japan. Among them, 459 teachers' staying time in their nursery center disagreed with their total spending time for activities at their workplace. They were excluded from this analysis. Among the 1089 teachers, 25 stayed less than 8 hours at their centers. They were also excluded from the analysis. From a total of 1064 teachers participating, 321 had under three service years, 349 ranged between 4 to 10 years, and 394 teachers had over 10 years' experience.

### Materials

A time management questionnaire was prepared. The questionnaire comprised of 12 questions, examining the teacher's time used in his or her nursery center on a certain day (the previous day when a participant answered the questionnaire).

- (1) When did you check in or arrive at your workplace?
- (2) When did you get away or left from your workplace?

- (3) How long did you stay at your workplace? Subtract (1) from (2).
- (4) How much time did you spend teaching and caring for children or interacting with their parents?
- (5) How much time did you spend making assessments and recording at your workplace?
- (6) How much time did you spend planning and preparing at your workplace?
- (7) How much time did you spend on paperwork at your workplace?
- (8) How much time did you spend cleaning your workplace?
- (9) How much time did you spend in meetings at your workplace?
- (10) How much time did you spend resting at your workplace?
- (11) How much time did you spend with others at your workplace?
- (12) Sum up the answers from (4) to (11) and adjust the answer to (3).

Figure 1 shows the answer sheet of the questionnaire. Personal and center-related information were examined simultaneously. Personal information included the class under the teacher's charge, position in the workplace, service years, gender, to name a few. The center information included, among others, the management agency, total number of children, number of staff, duty hours.

	Hours	Minutes
Arrival time (1)		
Quitting time (2)		
Working time (3) [(2)-(1)]		
Teaching and care (4)		
Assessment and recording (5)		
Planning and preparation (6)		
Paperwork (7)		
Cleaning (8)		
Meeting (9)		
Resting (10)		
Others (11)		
Total time [sum from (4) to (11)]		

← Adjust to match the times ←

Figure 1. Answer sheet for time management

## Procedure

The questionnaires were sent to each participant's center from Nihon Hoiku Kyokai on September 5, 2011. Informed consent was preliminarily obtained from their center managers. The principal asked 3 staff members to answer the questionnaires and returned them all to the society until October 11, 2011. Statistical analyses were performed using STATISTICA 13.3.

## Results

### Analysis I. Japanese nursery teachers' time use

Figures 2 to 9 show the mean minutes and distribution of time used for each job. Although the teaching and caring time was normally distributed, that for assessment and recording, planning and preparation, paperwork, meetings, and resting were not.

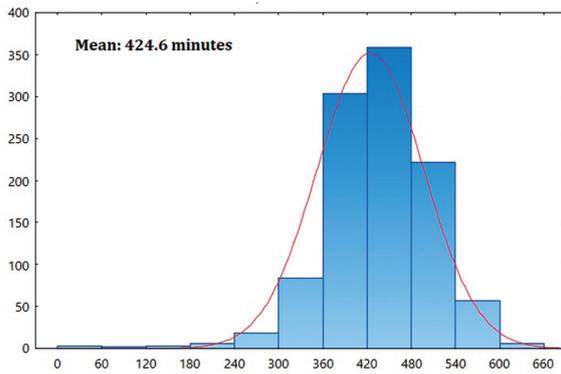


Figure 2. Distribution of time for teaching and care

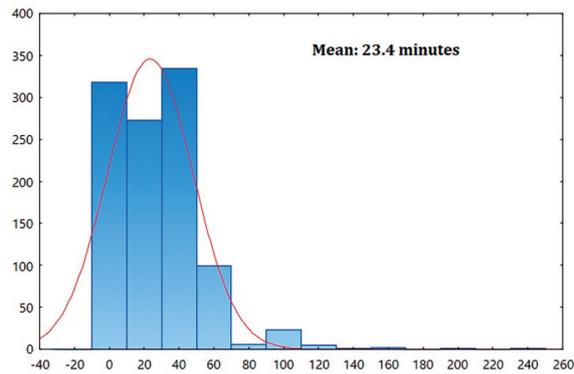


Figure 3. Distribution of time for assessment and recording

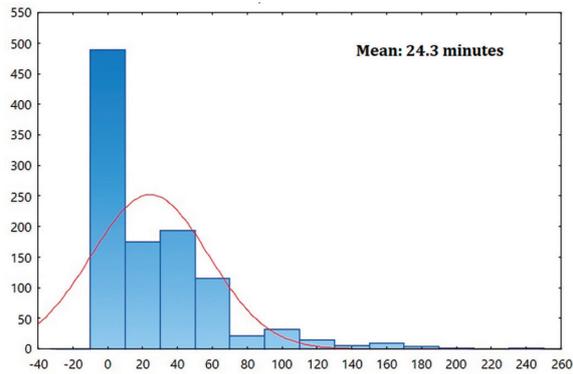


Figure 4. Distribution of time for planning and preparation

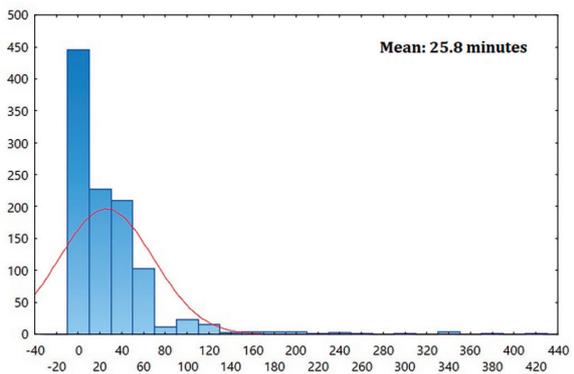


Figure 5. Distribution of time for paperwork

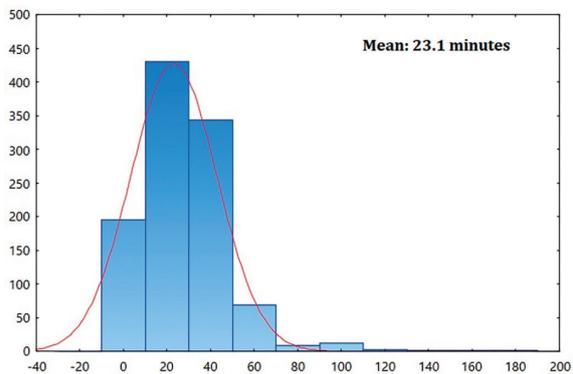


Figure 6. Distribution of time for cleaning

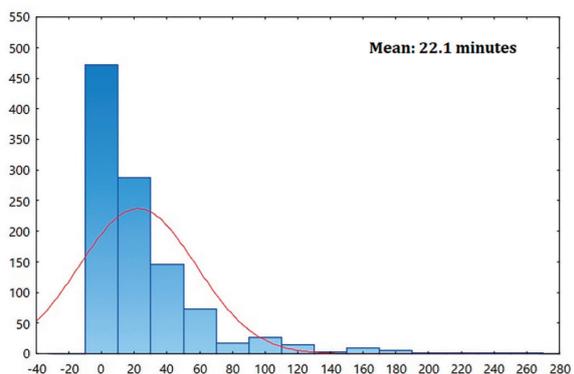


Figure 7. Distribution of time for meeting

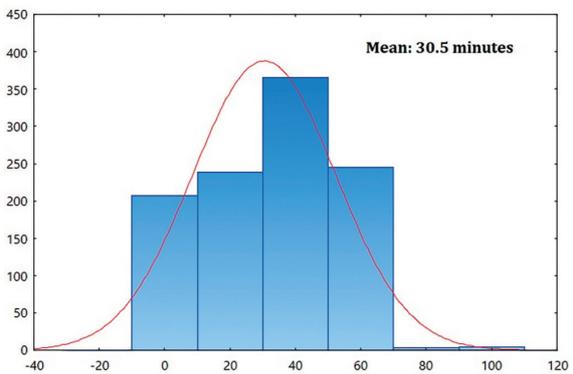


Figure 8. Distribution of time for resting

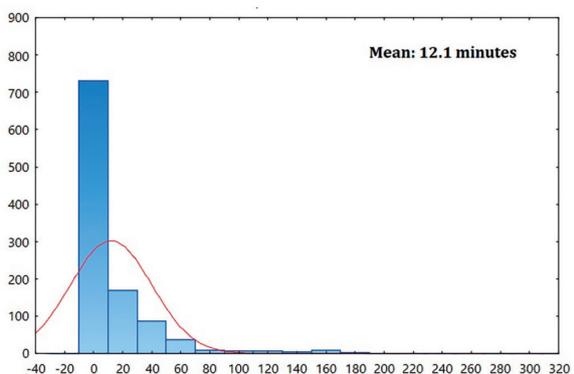


Figure 9. Distribution of time for others

In particular, for assessment and recording, about 30% of the teachers, and for planning and preparation, about 45% of the teachers did not spend any time. The present study focused on these jobs.

Analysis II. Factors affecting the time for assessment, recording, planning, and preparation

From the total number of teachers participating, 43.0% used some time for both assessment and recording, as well as planning and preparation. They were assigned to Group B. Another 28.4% spent some time only on assessment and recording. They were assigned to Group R. Of the remaining respondents, 12.0% used some time only for planning and preparation, being assigned to Group P, and 16.6% spent no time on both activities. They were assigned to Group N. Among these 4 groups, the workplace and personal information, as well as the time use were compared. Table 1 shows the mean number of staff members or mean minutes with significant differences among the 4 groups, by one-way ANOVA. Regarding the institutional factors, the centers of teachers belonging to Group R have more cooks, teachers, other than teacher, cook, and nurse, staff members, and regular full-time teachers than those in the other groups. Regarding personal factors, teachers in Group R worked for a shorter amount of time in their center than those in Group B and P. Regarding time use, teachers in Group N used more time for teaching and care, paperwork, meetings, and on others than the other groups. Teachers in Group P used more time for cleaning than those in Group R.

Table 1. Significant differences among 4 groups

	Group				Significant Difference
	B	R	P	N	
<b>Institutional Factor</b>					
Number of Cook	2.9	3.3	3.0	2.9	R>B
Number of Other than teacher, cook, and nurse	2.1	3.0	2.0	1.7	R>BPN
Number of Staff	23.5	26.0	24.7	23.3	R>BN
Number of Regular full-time teacher	10.0	11.6	9.9	10.2	R>BPN
Number of all Teacher	19.8	21.9	21.0	19.9	R>B
<b>Personal Factor and Time use</b>					
Working time in their center	588.9	578.1	595.1	584.2	PB>R
Time for Teaching and care	416.5	426.6	429.0	438.8	N>B
Time for Paperworks	19.6	24.0	23.6	46.3	N>RPB
Time for Cleaning	23.6	20.9	26.8	23.0	P>R
Time for Meeting	18.9	23.3	22.5	28.0	N>B
Time for Others	8.7	15.6	7.7	17.9	NR>BP

Table 2 shows the mean minutes used by the participants and the excluded teachers from this research. The time used for teaching, caring, and cleaning were also longer for the former than the latter. Intriguingly, the time for assessment, recording, planning, preparation, paperwork, and meeting did not significantly differ between them.

Table 2. Mean minutes and the differences between 2 groups

	Teachers staying more than 8 hours (N=1064)		Teachers staying less than 8 hours (N=25)		<i>t</i> - tests ( <i>p</i> )
	Hours	Minutes	Hours	Minutes	
(4) Teaching and care	7	4.6	5	3.6	***
(5) Assessment and recording	0	23.4	0	26.4	
(6) Planning and preparation	0	24.3	0	18.0	
(7) Paperwork	0	25.8	0	14.8	
(8) Cleaning	0	23.1	0	12.2	**
(9) Meeting	0	22.1	0	11.2	
(10) Resting	0	30.5	0	39.6	*
(11) Others	0	12.1	0	3.4	

\*  $p < .05$ , \*\*  $p < .01$ , \*\*\*  $p < .001$

### Analysis III: Differences among the three groups of service years

#### (1) Average and group differences

Table 3 shows the mean time used for each task for the three teacher groups. ANOVA was performed, and found four significant differences among them. The time for (4) teaching and care was significantly shorter for teachers whose service was over 10 years than the other teachers. The time for (5) assessment and recording was significantly longer for teachers whose service was under 3 years than the other teachers. The time for (7) paperwork and that for (9) meetings were significantly longer for teachers with over 10 service years than the other teachers. Total time, working time was longer for teachers with under 3 service years than those with 4 to 10 service years.

Table 3. Mean time used for each task for the 3 teacher groups

	Under 3 years (a)		From 4 to 10 years (b)		Over 10 years (c)		t-test (LSD)
	Hours	Minutes	Hours	Minutes	Hours	Minutes	
(4) Teaching and care	7	10.1	7	9.8	6	55.4	ab>c
(5) Assessment and recording	0	26.4	0	22.4	0	22.0	a>bc
(6) Planning and preparation	0	26.6	0	23.1	0	23.5	
(7) Paperwork	0	20.6	0	21.9	0	33.4	c>ab
(8) Cleaning	0	23.1	0	22.9	0	23.2	
(9) Meeting	0	20.3	0	20.1	0	25.3	c>ab
(10) Resting	0	30.7	0	29.7	0	30.9	
(11) Others	0	13.2	0	12.0	0	11.2	
Total time = Working time	9	51.2	9	41.9	9	44.8	a>b

#### (2) Correlations

Tables 4, 5, and 6 show significant correlation coefficients among the time used for each task by teachers with under 3, from 4 to 10, and over 10 service years, respectively. The time for teaching and care was negatively correlated with that for other tasks. Therefore, teaching and care would prevent teachers from using time for other tasks. The total working time was positively correlated with the time for tasks.

For teachers with short service years, under 3, the time for (9) meetings was not significantly correlated with the time for (4) teaching and care, which indicated that the time for teaching and care was independent from the time for meetings. For teachers with long service years, over 10, the time for (6) planning and preparation was also not significantly correlated with the time for (4) teaching and care, which indicated that the time for teaching and care and that for planning and preparation were independent.

For teachers with long service years, the time for (7) paperwork was negatively correlated with the time for (5) assessment and recording, and (6) planning and preparation. Paperwork would prevent teachers from assessing, recording, planning, and preparation.

Table 4 Significant correlation coefficients among task times for teachers with short service years

	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
(4) Teaching and care								
(5) Assessment and recording	-.229							
(6) Planning and preparation	-.144							
(7) Paperwork	-.131							
(8) Cleaning	-.196							
(9) Meeting								
(10) Resting	-.318		-.158	-.124				
(11) Others			-.128	-.119				
Total time = Working time	.412	.111	.268	.141	.119	.352	-.158	.275

Table 5 Significant correlation coefficients among task times for teachers with middle service years

	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
(4) Teaching and care								
(5) Assessment and recording	-.297							
(6) Planning and preparation	-.215							
(7) Paperwork	-.242							
(8) Cleaning	-.250							
(9) Meeting	-.331							
(10) Resting	-.383							
(11) Others	-.161		-.127					
Total time = Working time	.372		.283	.255		.224	-.185	.180

Table 6 Significant correlation coefficients among task times for teachers with long service years

	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
(4) Teaching and care								
(5) Assessment and recording	-.121							
(6) Planning and preparation								
(7) Paperwork	-.608	-.185	-.178					
(8) Cleaning	-.281			.178				
(9) Meeting	-.226							
(10) Resting	-.418	.105						
(11) Others	-.170		-.108					
Total time = Working time	.318		.203			.395	-.219	.159

For teachers with short service years, the total or working time was positively correlated with all tasks besides (10) resting. For teachers with middle service years, it was not correlated with (5) assessment and recording, and (8) cleaning. For teachers with long service years, the total time was not correlated with (5) assessment and recording, (7) paperwork, and (8) cleaning. These results indicate that teachers with longer service years have more independence within the time spent on tasks, and suggest that service years facilitate time management skills for tasks.

## Discussion

The present study indicated that:

- (1) The number of staff members other than teachers in the center was larger for teachers who spent some time recording than for those who did not.
- (2) The center closing time was later and center hours were longer for teachers who spent some time recording than for those who did not.
- (3) The leaving time in the center was earlier for teachers who spent some time recording than for those who did not spend time.
- (4) The time spent for paperwork and meetings was shorter for teachers who spent some time recording than for those who did not spend it.
- (5) The meeting time for teachers with short service years and the planning and preparation time for those with long service years would be independent from the time for teaching and care.

These results suggest the necessity for flexible applications of the Carol model. If a teacher takes a longer time to interact with children, the total amount of time for instruction would be shorter. Team instruction via assessment and recording could eliminate this type of dilemma.

The present study also suggests three political proposals and three implications for future research.

The first political proposal relates to the Japanese nursery center staff. The minimum standards for a child welfare institution is prescribed in Article 33, “The nursery school must employ a nursery teacher, a commissioned doctor, and cooking staff.” A clerical staff member is not included in this article, therefore, most nursery centers do not employ one. Office work is an affair for nursery teachers—they must spend time on paperwork. The present study suggests the necessity of clerical staff.

The second proposal refers to audit quality of nursery centers. The Child Welfare Act established Article 46, which asks the local government to introduce the audit system to maintain or improve the quality of the service along the minimum standards for a child welfare institution. Although auditors check nursery centers’ records, they cannot estimate the quality of these records. If a teacher made a record of all the children, then the auditor would acknowledge the recording of the nursery center. This acknowledgment, however, could not improve teachers’ observation of and interaction with children since the other teachers did not observe or interact with children. It is necessary to check the individual teacher’s records to develop the audit system.

The last proposal is to develop a teacher’s skill. The present study showed that the working time did not differ between those who spent some time for recording than for those who did not spend time, and that the leaving time was earlier for the former than for the latter. These findings suggest that the former group of teachers had better time management skills than the latter. As the training school of nursery teachers and on-the-job training systems have no program for developing time management skills, a system for cultivating or improving the skill is needed.

The present study has 3 limitations. The first is that teachers were asked to report their time usage for only one day in a limited term. On another day or term, they might report other usages. As Vannest and Parker (2010) pointed out, self-reported estimates of teachers’ time use are related to contentious issues or strong personal feelings, and are untrustworthy. Classroom observation by a third party trained for reliability might be superior to teacher self-reporting. More future examinations would be necessary for Japanese nursery teachers’ time use.

We showed that teachers in good nursery centers, which had high scores estimated with ECERS-R, provided by Harms et al. (1998), spent more time on assessment, recording, planning, and preparation, and less time for meetings and resting than those in ordinary centers (Shimizu & Uzuhashi, 2012). This finding suggests that spending more time for assessment and recording would create a better environment and facilitate more the development of children. An empirical examination will be expected.

Lastly, the Ministry of Health, Labour and Welfare changed the Guidelines for Nursery Care at Daycare Centers almost every decade. The change updated the training system for nursery teachers. The present data were collected in 2011 (Nihon Hoiku Kyokai, 2012). As the average length of service of nursery teachers is about 7.5 years, more than half of the teachers were employed after the collection. Replicative and cumulative examinations are necessary.

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