



Foro de Educación

ISSN: 1698-7799

jllhuerta@mac.com

FahrenHouse

España

Kawamura, Akira

The Quality of Compulsory School Teachers in Japan: An Analysis of Quantitative
Investigations of Teachers' Professional Development in 2011-12

Foro de Educación, vol. 14, núm. 20, enero-junio, 2016, pp. 453-466

FahrenHouse

Cabrerizos, España

Available in: <http://www.redalyc.org/articulo.oa?id=447544536022>

- How to cite
- Complete issue
- More information about this article
- Journal's homepage in redalyc.org

redalyc.org

Scientific Information System

Network of Scientific Journals from Latin America, the Caribbean, Spain and Portugal

Non-profit academic project, developed under the open access initiative

The Quality of Compulsory School Teachers in Japan: An Analysis of Quantitative Investigations of Teachers' Professional Development in 2011-12

La calidad de los profesores de enseñanza obligatoria en Japón: un análisis de investigaciones cuantitativas sobre desarrollo profesional docente en 2011-12

Akira Kawamura

e-mail: akira@kuins.ac.jp

Kansai University of International Studies. Japan

Abstract: The purpose of this study¹ is to investigate a hypothesis about why there are no regional gaps in the quality of Japanese teachers based on the data of a 2011-12 quantitative investigation of public primary school and middle/junior high school teachers in three prefectures located in different regions. Based on this survey, the hypothesis put forth in this paper has been confirmed. The results indicate that interactions among colleagues in Japanese primary and middle/junior high school teachers' teaching lives are homogenous and that the quality of experience related to professional development as a teacher is constant in 3 prefectures, regardless of the region in which their school is located and of differences in the jurisdictions' boards of education. In other words, the professional development environment is standardized. Thus we can guess that there is a certain level of teacher competence regardless of region. The standardization of the environment of teachers' professional development and the teacher competence can be cited as a characteristic of the Japanese teaching profession. If this is the case, Japanese children are guaranteed a certain level of education no matter what region they live in and can attain a certain level of academic abilities. This is presumably one reason why Japan achieves high scores on international academic ability surveys.

Keywords: teacher; quality; standardization; Japan; professional development.

Resumen: El propósito de este estudio es investigar la hipótesis acerca de por qué no hay diferencias regionales en la calidad de los maestros japoneses, basándonos en los datos de una investigación cuantitativa realizada en el curso 2011-12 sobre la escuela primaria pública y los profesores de enseñanza media/junior de las «high school» en tres prefecturas situadas en diferentes regiones. Sobre la base de este estudio, se ha confirmado la hipótesis planteada en este trabajo. Los resultados indican que las interacciones entre compañeros de enseñanza primaria y secundaria japonesa son homogéneas y que la calidad de la experiencia relacionada con el desarrollo profesional como profesor es constante en tres prefecturas, independientemente de la región en el que la escuela esté localizada y de las diferencias en las juntas de educación de

¹ Acknowledgment: This work was supported by JSPS Grant-in Aid for Young Scientists (A) Grant Number 22683018.

las jurisdicciones. En otras palabras, el entorno de desarrollo profesional ha sido estandarizado. Por lo tanto, podemos suponer que hay un cierto nivel de competencia de los profesores, independientemente de la región. La estandarización del entorno de desarrollo profesional de los docentes y de la competencia de los profesores puede citarse como una característica de la profesión del docente japonés. Si este es el caso, a los niños japoneses se les garantiza un cierto nivel de educación, sin importar la región en la que vivan, y pueden alcanzar un cierto nivel de habilidades académicas. Esta es probablemente una de las razones por las cuales Japón alcanza altas puntuaciones en las encuestas internacionales de aptitud académica.

Palabras clave: maestro; calidad; normalización; Japón; desarrollo profesional.

Recibido / Received: 05/11/2015

Aceptado / Accepted: 22/11/2015

1. Japanese Teachers Noted Throughout the World

An international academic ability survey found Japanese children to have high academic abilities. Since 1995, Japan has participated in the Trends in International Mathematics and Science Study (TIMSS), which measures academic achievement in math and science at the primary and middle/junior high school levels, and has generally ranked within the top five participating countries. Japan has also participated in the Program for International Student Assessment (PISA) since 2000 and has scored generally within the top ten in literacy, mathematical literacy, and science literacy. In the Program for International Assessment of Adult Competencies (PIAAC), which measures literacy, numeracy, and problem-solving abilities using technology among men and women age 16 to 65, Japan was generally one of the top scorers, showing that the academic abilities of Japanese adults are among the highest in the world.

Why is the quality of Japanese education so high? One important factor may be the high quality of teachers. It is believed that the quality of Japanese teachers is so high because there is a set standard and there are no differences in quality by region. Therefore, this paper hypothesizes about why there are no regional gaps in the quality of Japanese teachers and aims to investigate that hypothesis. Particularly, it focuses on the factors that support the quality of Japanese teachers and considers the fact that there are no regional gaps in these factors to be an important element in maintaining the high quality of teachers.

2. The Professional Development of Japanese Teachers

What experiences do Japanese teachers have, and what have they done to improve their own quality and thus support the quality of education? To clarify this, we should investigate what they find significant and whether they have increased their own competencies.

Among studies on Japanese teachers, the study «The Life Course of Teachers» begun by Tadahiko Inagaki *et al.* analysed and discussed the professional

development of teachers from a historical viewpoint looking at social conditions and trends in education policies². These researchers targeted a cohort of teachers who graduated in 1931 from a normal school in Nagano prefecture and discussed the impact that the history of the Shōwa period had on these teachers³. This research showed that the things which teachers believed to be most important in supporting their practices and raising competency were «research activity at school», «meetings at school with exceptional senior teachers and leaders», followed by «experience in educational practices», «appointments to schools that have personal meaning» and «meeting exceptional people outside of school» (Inagaki *et al.*, 1988, pp. 72-96) .

Junji Yamazaki, in a study related to Inagaki's life-course research, targeted teachers who graduated from the national teacher-training department and became primary and middle/junior high school teachers in prefectural schools. Between 1984 and 2004, he conducted five continuous surveys, each time clarifying the characteristics and changes of the professional development of teachers⁴. All five surveys showed that most teachers, regardless of generation, indicated that the things significant to improving the quality of practices were «training in affiliated schools», «workplace atmosphere and human relations» and «one's own motivation and effort». A higher percentage of the younger generation also indicated «personal advice from senior teachers and colleagues» and «changes in interactions with children» (Yamazaki, 2002, pp. 204-234).

These studies targeted specific eras in Japanese history and teachers in a specific region. Therefore, it remains unclear what all generations of teachers performing modern educational practices find significant in improving the quality of practices and whether the same things would be found significant in a survey targeting teachers outside a specific region.

One survey that clarifies some of what is significant in improving the quality of teaching practices among Japanese teachers is the Teaching and Learning International Survey (TALIS). In this survey, compared to teachers from other

² Inagaki (1988) got the idea of a life course for teachers from Elder's (1974).

³ *Shōwa* (25 December 1926 – 7 January 1989) is the name of the era of the Shōwa Emperor, known outside of Japan as Emperor Hirohito. The subjects of this particular survey were public primary school teachers during this Shōwa period. When they were young teachers, many teachers in Nagano prefecture were arrested for participating in leftist movements. Then, as mid-career teachers, they experienced World War II. After the war they practised progressive education while continuing to teach under the conservativization of educational policies. They experienced the changes in the Japanese educational environment brought on by the period of high economic growth and the rise of the ratio of students who go on to the next stages of education. Most of them retired from primary school teaching and administration in the 1970's (Inagaki *et al.*, 1988, pp. 5-12).

⁴ Yamazaki *et al.* (Yamazaki *et al.*, 2010; Mochizuki *et al.*, 2011ab) focused on the teachers of the younger generation and conducted the sixth survey in 2010.

countries participating in the survey, many Japanese middle school and junior high school teachers indicated the following to be significant: 1) When many people receive guidance from the principal of their school, school management team members, and leaders within the organization; 2) Classroom visits to other schools are actively carried out; 3) Feedback from teachers is given in multiple forms; and 4) Many teachers feel their competency improving as a result of the feedback.

However, TALIS does not show just how significant the guidance from other teachers is, nor what kind of feedback is significant. In addition, since this survey targeted middle/junior high school teachers, it does not shed light on primary school teachers, and it is difficult to say that it can determine what underlies the quality of Japanese primary and middle/junior high school teachers.

Therefore, this paper will clarify what types of things in their everyday teaching life modern Japanese primary and middle/junior high school teachers feel are significant in improving the quality of their practices. Additionally, it will make a comparison by region and verify the hypothesis that there are no differences by region in factors that support teacher quality and that these factors are homogenous.

3. Research Targets and Methods

The targeted regions, where Yamazaki conducts his survey studies, were B prefecture in the Chubu region, which has an accumulation of quantitative data on teacher competency formation, as well as A prefecture in the Kansai region and C prefecture in the Kanto region, which have geography, population and educational environments similar to B prefecture. B prefecture is located in the periphery of a metropolitan area and is in a region with a population over the three million mark of major cities. Prefectures A and C have similar regional characteristics. They also have similar trends in educational environments based on national academic ability survey results⁵. The survey subjects were public primary and middle/junior high school teachers in these three prefectures.

After performing random sampling for primary and middle/junior high school teachers in each prefecture, a school survey sheet (1) and teacher questionnaires (multiple)⁶ were distributed via postal mail. Each school that conduct-

⁵ The percentage of correct answers of the three prefectures in twice national academic ability surveys were near averages of all prefectures of Japan, and those areas are classified in «stable» type (Shimizu, Takada, 2012, pp. 31-51).

⁶ This survey targeted all teachers, including not only managers and general teachers, but also part-time lecturers, and therefore it was difficult to know the total number of teachers in each school beforehand. Henceforth, with reference to the total number of pupils in the school, the approximate number of teacher

ed the survey was requested to return the survey sheet and the recovered questionnaires all together. Survey results are shown in Table 1. This paper targeted full-time employees and excluded management and part-time lecturers from the recovered questionnaires.

In addition, taking into consideration the life cycle and history of the teachers, those age 50 or older were labelled «veteran teachers», those in their 30's and 40's were labelled «mid-level teachers», and those in their 20's were labelled «young teachers». The sample overview is shown in Table 2.

The more senior teachers entered the teaching profession during the early 1970's to the early 1980's, when a period of high economic growth ended and Japan entered a period of low economic growth. During this period, a large number of teachers who had been hired after the war were retiring, and children of the World War II baby boom, who had gone through school, were being employed in large numbers. As this generation entered the workforce, social problems such as school dropouts, school violence, and bullying began to take shape, and society's trust in schools was declining. From the beginning of their tenure to the mid-level of their careers, the nature of school education came under question.

Later, in their veteran years, not only were these teachers devoted to their educational practices, but they also wanted to be actively involved in school management. This was also a period during which instilling in children a zest for living and strengthening basic academic skills were being strongly demanded through educational reforms. In addition, teacher-related reforms were put forth, such as the teacher evaluation system and the teacher's license renewal system, and these teachers, in the final stages of their teaching lives, were required to respond to changing circumstances.

Mid-level teachers were hired from the mid-1980's to the early 2000's, when education problems became social problems and there was distrust towards schools. It was also a time when the number of teachers being hired was decreasing, and it was becoming difficult to get a teaching job. Currently, these teachers are in mid-level positions within schools and are mainly performing acts that are required by educational reforms.

Young teachers entered the teaching profession from the mid-2000's onward. During this time, the number of teachers being hired, especially in metropolitan areas, was rising, and educational reform was settling down. Their experience has been of various educational policies surrounding schools and teachers.

questionnaires was calculated.

4. Analysis Results

To start, I confirmed human relations and individual experiences that are significant in improving the quality of modern educational practices for teachers (Table 3). First, the items «interactions with children», «workplace atmosphere and human relations» and «personal motivation and effort» were considered significant by both primary and middle/junior high school teachers, receiving 2.5 points or more. This suggests that for teachers carrying out daily educational practices, the people closest to them and their immediate circumstances are important.

The next items considered significant were «having a partner to confide troubles in and seek guidance from», «observing colleagues' classrooms and vice versa» and «personal advice from senior teachers and teacher colleagues». Thus, we understand that opportunities to receive detailed suggestions and people's presence are important for issues related to one's own educational practices.

Although some regional differences were found in a regional comparison of the aforementioned significant human relations and opportunities, for teachers within a region, significance was ranked at the same level as teachers from other regions. Almost no regional differences were found for other items. Thus, we can infer that recognition of the significance of human relations and individual experiences to modern teachers is homogenized and that teachers have similar experiences of educational practices and related everyday experiences.

What about institutions and organizations? (Table 4). Generally, items related to institutions and organizations received lower points than items on human relations and individual experiences and did not seem to be as significant in raising current educational practices.

Closer examination reveals that practices such as «trainings sponsored by the board of education» and «teacher evaluations» and participation in organizations such as «private education and research organizations and voluntary clubs» and «union activities» were significant to teachers and remained within about 1.7–2.0 points. They seem to feel that voluntary commitment to national institutions and organizations is strongly beneficial.

On the other hand, involvement at the school with which one is affiliated, such as «trainings at affiliated school», «grade-level meetings and subject meetings at affiliated school», and «research activities and the research framework of the entire school», as well as participation in related research groups at other schools, such as «participation in other schools' research workshops» and «other districts' research groups by grade level, subject and area» had about 1.5–1.9 points. It seems that to teachers, external institutions and organizations are more

significant than their own immediate institution and organizations.

Results of the comparison among regions showed that for both primary and middle/junior high school teachers, there were not really any places with significant differences. In other words, for both primary and middle/junior high school teachers, awareness of institutions and organizations related to improving the quality of educational practices is homogenous. Thus, we can deduce that there is a certain level of formal and informal research taking place in each region.

Thus far, analysis indicates that teachers find relationships with colleagues to be extremely significant in improving educational practices. Therefore, we now focus on this point and confirm how teachers are commonly interacting with their colleagues (Table 5).

The item that received high points among both primary and middle/junior high school teachers of all generations was «talking with colleagues about children and education» (about 1.9–2.3 points). It appears that teachers often have conversations with colleagues regarding children and education.

«Being actively involved with grade-level and school management» also received high points (about 1.8–2.1). Regardless of generation, teachers are firmly committed to school management and being an active member of the organization. Taking into consideration that the response «practicing as you think you should, without worrying about other colleagues or classes» is also over 1 point, this further suggests that primary and middle/junior high school teachers are strongly committed to school management.

One item suggesting a difference between primary and middle/junior high school teachers in how they communicate is the response to «exchanging advice among colleagues about practices». Among primary school teachers, this received about 1.8–1.9 points, indicating that it happens often, while among middle/junior high school teachers, this received about 1.5–1.8 points, indicating that exchanges of advice on practices are not as extensive among middle/junior high school teachers. Another item that speaks to this relationship between colleagues is the response «consulting with colleagues for guidance on practices». Since primary schools have the homeroom system, challenges regarding practices are likely to be shared among many teachers; however, in middle/junior high schools, there is the subject-teacher system, and the number of teachers who share similar challenges is thus smaller. These items show a difference between primary and middle/junior high school teachers in communication density.

For the response «consulting with colleagues for guidance on practices», it appears that as generations increase in age, communication decreases. As teachers gain experience, competence increases, and they can resolve problems regarding

practices without consulting colleagues. We can presume that this is why the density of guidance among veteran teachers is lower.

Next, when checking for regional differences by generation, regional disparities were not found among responses, including the aforementioned. In other words, we can conclude that the way teachers interact among colleagues is homogenized.

5. Summary

The results above indicate that interactions among Japanese primary and middle/junior high school teacher colleagues are homogenous and that the quality of experience related to professional development as a teacher is constant. In other words, the professional development environment is standardized, and the hypothesis put forth in this paper has been proved. The teachers of each generation in each region maintain a similar awareness and have homogenous behaviour, regardless of the region in which their school is located and of differences in the jurisdiction of boards of education. Although each generation of teachers has its own characteristics due to the eras through which they lived, the education they received, and different number of years of experience, the similarities of each generation extending beyond regions were also confirmed. Thus we can posit that there is a certain level of teacher competence regardless of region. The standardization of the environment of professional development of teachers and teacher competence can be cited as characteristics of the Japanese teaching profession. If this is the case, Japanese children are guaranteed a uniform level of education and academic achievement regardless of the region in which they live. This is presumably one reason why Japan achieves high scores on international academic ability surveys.

Our findings show that teachers feel «trainings sponsored by the board of education» are significant for the standardization of the professional development environment of teachers and teacher competency. To this end, each region's board of education creates government-regulated training programs based on notices from the Ministry of Education, Culture Sports, Science and Technology (MEXT). In addition, as we saw from the findings on interactions among colleagues, teachers are actively committed to school management on a daily basis, and this may be related to the fact that through close interactions with colleagues, they feel they are reaching a certain level of consensus as a member of the organization.

However, this analysis cannot reject the existence of differences between individual teachers in each region. Research on Japanese teachers has indicated

that there is a culture of *cooperative pacing* (Nagai, 1977; Kawamura, 2014). In other words, Japanese teachers are interested in how other teachers run their classrooms and educational activities and then institute similar practices to keep pace with those other teachers. We can surmise that because of this, the quality of teachers in a region has also been standardized to a certain extent.

As mentioned above, the creation of a structure to support the quality of Japanese teachers can be cited as a proven effectiveness of national policies. However, it is essential to note that if teachers blindly follow government-determined standards and goals, they will be in danger of no longer thinking autonomously about what is essential for the education of the children with whom they come into contact every day and of how the future Japanese society should be.

Future topics include a further investigation on the characteristics of Japanese teachers indicated in this paper. First, it is necessary to study whether the environment of teacher competence formation and the standardization of teacher competence share commonalities in both metropolitan and rural areas of Japan. International comparative research should also be performed to determine if standardization is common among teachers from countries with high academic abilities, and if this standardization is unique to Japanese teachers or if it is common within the teaching profession in other countries, too.

6. References

- Elder, G. H. (1974). *Children of the Great Depression: Social Change in Life Experience*. Chicago: University of Chicago Press.
- Inagaki, T., Terasaki, M., & Matsudaira, N. (Eds.). (1988). *Kyōshi no life course: Shōwashi wo kyōshi toshite ikite*. Tokyo: Tokyo Daigaku Shuppankai [Tokyo University Press].
- Kawamura, A. (2013). Kyōshi no seichō ni kansuru chiiki hikaku: 2011nendo shitsumonshi chōsa no kekka kara. *Kansai kokusai daigaku kenkyū kiyō*, 14, 19-30.
- Kawamura, A. (2014). Dōchō atsuryoku no nakade ima wo ikiru kyōshitachi. *Kyōiku*, 824, 5-14.
- Kurebayashi, N. (2007). Kyōdō no dōryōsei tositeno «team»: Gakkō rinshō shakaigaku kara. *Kyōikugaku Kenkyū [The Japanese Journal of Educational Research]*, 74(2), 174-188.
- Martin, M. O., Mullis, I. V. S., Foy, P., & Stanco, G. M. (2012). *TIMSS 2011 International Results in Science*. Massachusetts: TIMSS & PIRLS International Study Center, Boston College.

- Mochiduki, K., Yamazaki, J., & Sugano, F. (2011a). Wakai kyōshi no rikiryōkeisei ni kansuru chōsakenkyū (1): 2010 Shizuoka chōsa niokeru «kyōshoku no keisei» ni kansuru kisobunseki hōkoku. *Shizuoka daigaku kyōiku gakubu fuzoku kyōiku jissen sōgō center kiyō*, 19, 209-222.
- Mochiduki, K., Yamazaki, J., & Sugano, F. (2011b). Wakai kyōshi no rikiryōkeisei ni kansuru chōsakenkyū (3): 2010 Shizuoka chōsa niokeru «kyōshokukan no keisei to henyōz ni kansuru kisobunseki hōkoku, *Shizuoka daigaku kyōiku kenkyū*, 7, 7-26.
- Mullis, I. V. S., Martin, M. O., Foy, P., & Arora, A. (2012). *TIMSS 2011 International Results in Mathematics*. Massachusetts: TIMSS & PIRLS International Study Center, Boston College.
- Nagai, S. (1977). Nihon no kyōin bunka: Kyōin no shokugyōtekishakaika kenkyū (I). *Kyōiku Shakaigaku Kenkyū [The Journal of Educational Sociology]*, 32, 93-103.
- OECD (2013). *OECD Skills Outlook 2013: First Results from the Survey of Adult Skills*, Paris: OECD Publishing.
- OECD. (2014). *PISA 2012 Results: What Students Know and Can Do (Volume I, Revised Edition, February 2014) Student Performance in Mathematics, Reading*. Paris: OECD Publishing.
- OECD. (2014). *TALIS 2013 Results*. Paris: OECD Publishing.
- Shimizu, K., & Takada, K. (2012). *Gakuryoku seisaku no hikaku shakaigaku [kokunai hen]: Zenkoku gakuryoku test ha todōfuku ni nani wo motarasitaka*, Tokyo: Akashi Shoten.
- Yamazaki, J. (2002). *Kyōshi no life course kenkyū*. Tokyo: Soufūsha.
- Yamazaki, J. (2012). *Kyōshi no hattatsu to rikiryōkeisei: Zoku kyōshi no life course kenkyū*. Tokyo: Soufūsha.
- Yamazaki, J., Mochiduki, K., & Sugano, F. (2010). Wakai kyōshi no rikiryōkeisei ni kansuru chōsakenkyū (2): 2010 Shizuoka chōsa niokeru «kyōshoku seikatsu no jittai» ni kansuru kisobunseki hōkoku. *Tōyō daigaku bungakubu kiyō: kyōikugakka hen*, 36, 79-93.
- Yufu, S., Kurebayashi, N., Kawamura, A., & Hasegawa, T. (2010). Kyōshoku no henyō: «Daisan no kyōiku kaikaku wo hete». *Waseda daigaku daigakuin kyōshoku kenkyūka kiyō*, 2, 51-82.
- Yufu, S. (2011). Kyōshoku ni naniga okotteirunoka? In Kitazawa, T. (Ed.), *<Kyōiku> wo shakaigaku suru* (pp. 42-67). Tokyo: Gakubunsha.

Annexes: Tables

Table 1. Survey Overview

	number of schools distributed to ¹	number of schools collected from	number of questionnaires recovered	school recovery rate	recovery rate within the schools collected from ²
Primary schools	A prefecture	205	50	24.4	54.0
	B prefecture	134	30	22.4	64.0
	C prefecture	159	35	22.0	41.4
	total	498	115	23.1	53.3
Middle/junior high schools	A prefecture	104	22	21.2	41.2
	B prefecture	74	26	35.1	65.8
	C prefecture	83	14	16.9	51.2
	total	261	62	23.7	51.9
aggregate total		759	177	23.3	52.7

Note 1: The survey period for A and B prefectures was from October to July 2011, and from December 2011 to February 2012 for C prefecture.
 Note 2: A percentage that divides the number of recovered questionnaires from the schools collected from by the number of teachers, as understood by the school survey sheet

Table 2. Sample Overview

	Primary school teachers (N)			Middle/junior high school teachers (N)		
	A prefecture	B prefecture	C prefecture	A prefecture	B prefecture	C prefecture
Young teachers	122	65	59	37	57	26
Mid-level teachers	209	197	102	129	184	59
Veteran teachers	144	137	110	74	104	54

Table 3. Things that are significant for improving the quality of current educational practices (human relations and personal experience)

	Primary schools									Middle/Junior high schools								
	Young teachers			Mid-level teachers			Veteran teachers			Young teachers			Mid-level teachers			Veteran teachers		
	A prefecture	B prefecture	C prefecture	A prefecture	B prefecture	C prefecture	A prefecture	B prefecture	C prefecture	A prefecture	B prefecture	C prefecture	A prefecture	B prefecture	C prefecture	A prefecture	B prefecture	C prefecture
Interactions with children	2.92	2.91	2.97	2.79	2.78	2.70	2.63	2.57	2.78	2.84	2.88	2.92	2.72	2.71	2.81	2.51	2.57	2.61
Observing colleagues' classes and vice versa	2.80	2.77	2.85	2.60	2.57	2.52	2.38	2.37	2.53	2.54	2.61	2.77	2.39	2.42	2.47	2.28	2.30	2.30
The leadership and advice of school principals and vice principals	2.50	2.34	2.68	2.25	2.17	2.30	2.00	1.95	2.21	2.46	2.48	2.46	2.09	2.16	2.22	1.92	1.89	1.93
Interactions with guardians	2.41	2.20	2.47	2.18	2.03	2.14	1.95	1.87	2.09	2.41	2.16	2.23	2.15	2.02	2.16	2.00	1.78	1.85
Personal advice from senior teachers and teacher colleagues	2.79	2.72	2.78	2.57	2.45	2.54	2.26	2.29	2.37	2.73	2.61	2.69	2.47	2.41	2.50	2.25	2.21	2.15
Workplace atmosphere and human relations	2.85	2.82	2.86	2.71	2.67	2.68	2.51	2.51	2.67	2.68	2.84	2.92	2.69	2.63	2.83	2.55	2.50	2.52
Having a partner (besides a teacher) that you can confide troubles in and seek guidance from	2.76	2.69	2.69	2.51	2.40	2.43	2.42	2.30	2.40	2.49	2.70	2.54	2.46	2.39	2.50	2.31	2.29	2.25
Encountering superior works	2.05	1.91	2.15	2.09	1.96	2.03	1.97	1.97	2.06	1.92	2.02	2.04	1.86	1.92	1.98	1.92	1.97	1.89
Personal motivation and effort	2.78	2.83	2.90	2.74	2.63	2.70	2.60	2.52	2.68	2.84	2.84	2.92	2.65	2.65	2.78	2.54	2.61	2.61
Having interests that are not directly related to education	2.50	2.43	2.42	2.38	2.28	2.16	2.16	2.21	2.31	2.41	2.54	2.31	2.20	2.18	2.22	2.21	2.18	1.98

Note 1: Values are average values based on 'quite significant' (1 point), 'somewhat significant' (2 points), 'hardly significant' (1 point) and 'not significant' (0 points).

Note 2: Places that were found to have a significant difference at the 5% level from one-way ANOVA are connected by a solid line.

Table 4. Things that are significant for improving the quality of current educational practices (institutions and organizations)

	Primary schools						Middle/junior high schools					
	Young teachers			Mid-level teachers			Veteran teachers			Young teachers		
	A	B	C	A	B	C	A	B	C	A	B	C
Trainings sponsored by the board of education	1.86	1.89	1.70	1.89	1.90	1.84	1.97	1.96	1.90	1.92	1.82	1.88
Research at affiliated schools	1.60	1.58	1.56	1.73	1.73	1.67	1.78	1.76	1.66	1.86	1.68	1.92
Grade-level meetings and subject meetings at affiliated schools	1.59	1.52	1.57	1.66	1.71	1.65	1.73	1.70	1.62	1.62	1.59	1.69
Research activities and research network of the entire school	1.60	1.63	1.54	1.73	1.75	1.71	1.76	1.77	1.68	1.86	1.73	1.88
Participation in other schools' research workshops	1.70	1.81	1.55	1.74	1.80	1.74	1.85	1.90	1.80	1.85	1.74	1.65
Other districts' research groups by grade level, subject and area	1.77	1.87	1.57	1.80	1.92	1.80	1.83	1.92	1.90	1.90	1.72	1.76
Teacher evaluations	1.92	1.97	1.84	1.97	1.99	1.94	1.96	1.98	1.99	1.97	1.92	1.92
Participation in private education and research organizations and voluntary clubs	1.84	1.95	1.73	1.84	1.86	1.75	1.77	1.88	1.80	2.00	1.94	1.69
Union activities (including the national research education assembly)	1.95	2.00	1.92	1.96	1.97	2.00	1.92	1.98	1.82	2.00	1.93	2.00

Note 1: Values are average values based on 'quite significant' (1 point), 'somewhat significant' (2 points), 'hardly significant' (1 point) and 'not significant' (0 points). Note also that teachers who had not experienced these things were excluded.

Note 2: Places that were found to have a significant difference at the 5% level from one-way ANOVA are connected by a solid line.

Table 5. Everyday Experience Related to Teaching

	Primary schools									Middle/Junior high schools								
	Young teachers			Mid-level teachers			Veteran teachers			Young teachers			Mid-level teachers			Veteran teachers		
	A	B	C	A	B	C	A	B	C	A	B	C	A	B	C	A	B	C
Socializing informally with colleagues even after they have left the school	1.89	1.85	1.56	1.51	1.46	1.57	1.46	1.21	1.31	1.76	1.75	1.50	1.45	1.41	1.29	1.32	1.40	1.11
Talking with colleagues about children and education	2.27	2.22	2.29	2.19	2.11	2.13	2.12	1.99	2.24	2.05	2.04	1.96	2.03	2.01	2.03	1.86	2.07	1.91
Observing colleagues' classes and vice versa	1.53	1.45	1.53	1.67	1.71	1.55	1.65	1.55	1.57	1.24	1.44	1.27	1.33	1.55	1.36	1.53	1.54	1.57
Exchanging advice among colleagues about practices	1.91	1.89	1.91	1.88	1.82	1.88	1.94	1.77	1.82	1.57	1.65	1.62	1.56	1.64	1.71	1.56	1.60	1.78
Consulting with colleagues for guidance on practices	2.19	2.11	2.00	1.96	1.86	1.89	1.67	1.61	1.70	1.97	1.89	1.88	1.64	1.64	1.76	1.40	1.40	1.35
Having study-group type events with colleagues	1.13	.94	1.16	1.16	.89	1.02	1.20	.95	1.15	.76	.53	.62	.80	.83	.79	.90	.87	.85
Being actively involved with grade-level and school management	1.99	2.05	2.00	1.99	2.09	2.06	2.16	2.05	2.07	1.78	1.91	2.08	1.79	1.98	2.08	1.89	1.99	1.93
Actively speaking up in staff meeting	1.06	1.00	1.16	1.65	1.61	1.61	1.96	1.64	1.93	.86	.89	.58	1.18	1.59	1.34	1.65	1.71	1.74
Consulting with senior staff, the vice principal, or principal on practices	1.66	1.69	1.80	1.58—1.87	1.92		1.60	1.56	1.63	1.43	1.28	1.46	1.49	1.67	1.64	1.49	1.64	1.59
Practicing as you think you should, without worrying about other colleagues or classes	1.11	1.08	1.29	1.22	1.12	1.18	1.31	1.24	1.25	1.30	1.04	1.04	1.24	1.27	1.34	1.22	1.45	1.30

Note 1: Values are average values based on 'happens all the time' (1 point), 'happens sometimes' (2 points), 'seldom happens' (1 point) and 'never happens' (0 points).

Note 2: Places that were found to have a significant difference at the 5% level from one-way ANOVA are connected by a solid line.