“Why are We Running Short of Teachers Even as the Birthrate Declines?”: A Case Study of the Teacher Shortage in Public Schools in X Prefecture in Japan*

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Translated by Nadezhda Murray‡

This paper examined the actual circumstances of the recent teacher shortage in public elementary and junior high schools in X Prefecture. Although teacher shortages had been reported, few previous studies had investigated them empirically.

With the cooperation of all five branch offices of the Board of Education, data were collected through three surveys: 1) a questionnaire survey in June 2021 of the branch offices, 2) three interview surveys in July 2021 of the administrative officers at the town level, and 3) a 2019-2021 visiting survey of the branch offices of X Prefecture and of four towns.

First, the actual amount of shortage as of May 1, 2021 was scrutinized by the questionnaire survey, clarifying the shortage into three stages. 1) Positions for 1,971 full-time teachers with tenure were unfilled as the first stage. 2) Teachers without tenure were subsequently recruited, still leaving 150 unfilled positions as the second stage. 3) Finally, part-time teachers were recruited, still leaving 115 unfilled positions as the third stage. 4) In the end, each school was required to manage by themselves. This survey also made it clear that the teacher shortage increased in each term because more and more teachers left work due to childbirth or illness, with no substitutes. This suggests that the design of the first national teacher shortage survey by the Ministry of Education in July 2021 should be redone, as it focused only on the condition of the first term.

Second, the paper disclosed that the teacher shortage had increased since 2018 in this prefecture. This was caused by multiple factors at micro/mezzo/macro levels at each stage. 1) There were three background factors for the first stage. (1) Although the numbers of teachers were strictly determined by nation-

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The local government had additionally decreased teacher numbers in order to prepare for a teacher surplus in the future, based on the declining birthrate. However, teacher demands were enlarged by the increase of children with special needs. (2) Administrators were reluctant to hire teachers with tenure. The risk of the prohibited surplus of teachers was multiplied because of the increased number of small and mutable special education classes. (3) The applicants for hiring exams decreased. Teaching itself was not as attractive as before. (4) Maternity leaves not only increased but grew longer. 2) The shortage in the second stage was caused by the lack of teachers without tenure. Few teachers were on the candidate list because most of them were already hired with tenure. 3) The shortage in the third stage was caused by the teacher license renewal system, which began in 2009. Many licenses were already expired.

Third, the effects of the shortage were examined, finding that teachers were compelled to overwork because each school had to cover 3.91 teachers’ worth of absence as a team. The paper also found that 60% of current teachers had less than 10 years’ experience, which is expected to have negative effects both on the quality of teaching and the professionalization of teaching.

**Keywords:** teacher shortage / teacher assignment / Act on Standards for Compulsory Education Schools / teachers without tenure / professionalization of teaching

1. The topic and its significance

From the late 2010s on, Japan’s mass media have surprised the public with increasing reports on a shortage of public school teachers (Kawasaki 2019). The teacher shortage has become even more serious in the 2020s.

In Japan, teachers are hired by prefectures and ordinance-designated cities as local civil servants. Their Boards of Education conduct teacher employment exams yearly, deciding whom and how many people to hire and what schools to assign them to. They regularly rotate all employed teachers, not just new ones, to different schools. This system enables equal assignment of teachers even to schools in areas with unfavorable natural or economic conditions. In addition, the number of children of 15 and under in Japan has been falling since 1982, over more than 40 years, which in straightforward terms ought to be decreasing the demand for teachers; why, then, is a teacher shortage arising? Exactly what kind of teachers are lacking, in what numbers, in the current shortage? The answer to this question has not yet been academically elucidated.

This paper, thus, focuses on empirical clarification through case study research of the status of assigned and unfilled teaching positions in public schools and the factors therein. Through this discussion, it seeks to clarify the actual status of these unfilled positions and
the survey design required to grasp this status.

The survey targeted public elementary and junior high schools in what will be called here X Prefecture. The paper’s analysis uses, in addition to publicly available statistics, the results of three surveys conducted between 2019 and 2021. The first was a survey of unfilled teaching positions conducted in May 2021 (below, the “2021 unfilled position survey”), in which questionnaires were sent to prefectural educational offices, all of which responded. The second was an interview survey of officials with experience assigning teachers in prefectural and municipal boards of education (below, the “2021 interview survey”), whose targets were A (formerly of X Prefectural Board of Education Teaching Personnel Section, former head of A Municipal Board of Education Teaching Personnel Section), B (current chief of personnel in the X Prefecture B Municipal Board of Education School Education Section), and C (former head of X Prefecture C Municipal Teaching Staff Section). Questions were sent in advance and followed by approximately two hours of semi-structured interviews, all conducted individually on July 5, 2021. The third was an inquiry conducted from 2019 through 2021, targeting all prefectural educational offices and four municipal boards of education in the prefecture (below, the “2019-21 inquiry”), involving individual inquiries concerning data on unfilled teaching positions.

X Prefecture was chosen because of the availability of cooperation and data on the parts of prefectural and municipal authorities with regard to the above survey targets. The significance of this study is in its use of uniquely provided data, its clarification of the actual status of the teacher shortage on the ground in schools through numerical surveys rather than constant conversion, and its provision of hints toward further survey designs.

Unfilled teaching positions constitute a cross-area issue involved with various problems. Teacher assignment has been studied from multiple angles within educational administration studies, educational finance studies, educational sociology, and so on; perspectives addressed have included that of class size standards and teacher numbers as concerned with the Act on Standards for Compulsory Education Schools (below, Act on Standards) (Ogawa 2001, Horiuchi 2005, Kuwahara 2002, Yamazaki 2010, Matsuda 2018, Watanabe 2019), that of policies on compulsory education expenses borne by the government (Ibuka 2020), that of decentralization reforms (Aoki 2013), that of forecasting teacher demand and supply (Shioki 2009, Kariya 2006, Yamasaki 2015), and so on.

In particular, it has been pointed out by Aoki (2013), Kawakami (2015), Kaneko (2014), and Sakuma (2018) that the adjunctification of teachers has been promoted as the end result of educational authority reforms from the Omnibus Decentralization Act of 2000 on. Until 2000, teachers were essentially full-time workers with employment guaranteed until retirement (regular employment). This paper shows empirically that as the end result of decentralization reforms, teachers’ employment format was irregularized, with increasing numbers of temporarily employed teachers on limited contracts and unfilled teaching positions.

As well, much of the existing research has been from the viewpoint of teacher assigners. This paper explores the issue from the viewpoint of the assigned teachers and the schools, addressing the effects of unfilled positions on teachers’ duties and professional development. Through this exploration, the authors hope to create a bridge between studies on educational administration, finance, and systems and studies on teaching and educational practice.

In addition, this paper attempts to refine the definition of “teacher shortage.” The Ministry of Education, Culture, Sports, Science and Technology (below, MEXT) launched a “Sur-
survey on the Actual Status of the Teacher Shortage” (below, the MEXT survey) in May 2021 as its first official nationwide survey (ongoing as of July 2021). Here, this paper’s operative definition of “unfilled teaching positions,” based on the definition of “teacher shortages” in the MEXT survey, is “the state in which the number of teachers assigned to a school (including full-time, temporary contracted, and part-time teachers) does not meet the number of teachers allocated as the school’s quota.”

Also, due to constraints of space, this paper analyzes only the survey results concerning teachers among the entire school staff surveyed. “Teacher” in this paper includes school principals, vice-principals, senior teachers, guidance teachers, teachers, school nursing teachers, school nutrition teachers, assistant teachers, and adjunct lecturers. Further, “full-time teachers” indicates “teachers hired on a contract with no end date through the teacher employment exam,” used synonymously with “teachers with tenure.” “Teachers without tenure” is used as a general term for teachers employed in all other formats including “rehired teachers” employed again after retirement.

2. The actual status of unfilled teaching positions in X Prefecture: What “unfilled” means

First, let us examine the actual status of unfilled teaching positions in X Prefecture.

2.1. Survey design

The following two points were noted when designing the 2021 unfilled positions survey. First, the survey items were designed in accordance with the actual process of assigning teachers, in order to clarify the overall picture of handling unfilled tenured positions. This design enabled the visualization of filled and unfilled positions as a constantly fluctuating process, positioned as the actual status as of May 1. That is, in X Prefecture, the number of teachers allocated to each municipality (below, allocated quota) is based on the number of students and classes on the class sorting reference date. This allocated quota was used as the standard, to begin from the question of how many regular teaching positions in schools were actually unfilled and then discover how the issue was handled.

Second, in order to clarify the actual status of unfilled positions in schools, the survey was conducted on a basis of actual numbers. Through the 2001 revision of the Act on Standards, it became possible to hire multiple part-time teachers to fill one teaching position (that is, disarranging the capacity figures), so that the number of positions based on the Act on Standards (conversion basis) and the actual number of teachers required for positions/number of unfilled positions differ. Conducting the survey on a basis of actual numbers made it possible to clarify the teacher shortages actually experienced by schools and teacher assigners, distinct from financial income and expenditure, as well as the actual labor expended in finding teachers able to serve.

2.2. Status of unfilled teaching positions as of May 1, 2021

First, the status of unfilled teaching positions in X Prefecture as of May 1, 2021, was a total of 1971 (1185 in elementary schools, 786 in junior high schools) unfilled tenured positions out of the teacher capacities allocated to each municipality (Figure 1).
Why was there a shortage of teachers with tenure amounting to almost 2000 people from the start of the academic year? The figure can be broken down into three rough groupings. First, so-called lack of personnel. This term is used in teacher assignments in various ways, but in this paper its definition means that positions went unfilled because there were fewer teachers with tenure available than the allocated quota to schools. The lack of personnel in X Prefecture was striking, amounting to 1232 positions (609 in elementary schools, 623 in junior high schools), and constituting the major factor in the shortage remaining even after assigning some 1130 temporary teachers (full-time, but on contracts of no more than a year).

The second group is teachers on maternity or childcare leave (553 in elementary schools, 150 in junior high schools). The third group is teachers on sick leave (23 in elementary schools, 13 in junior high schools). If teachers with tenure were to be assigned to cover

![Figure 1] Unfilled regular and replacement positions in X Prefecture (May 1, 2021)

<table>
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<th>Science</th>
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<td>2</td>
<td>-8</td>
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</table>

Secondary unfilled position rate K/L 8.1% 6.2% 4.2% 13.6% 8.9% 19.4% 0.0% 15.4% 24.3% 4.1% 6.9% 7.6%

Tertiary unfilled position rate L/I 6.0% 14.9% 0.0% 4.2% 12.1% 7.1% 19.4% 0.0% 15.4% 21.6% 2.0% 5.6% 5.8%

*According to the 2019-2021 inquiry
these positions, the number of teachers would exceed the allocated quota when the teachers on leave returned to work. Therefore, temporary teachers are assigned.

2.3. Stages of unfilled positions and stages of teacher shortages

Let us consider the definition of unfilled positions with respect to the actual status. Figure 1 shows that there are three stages of unfilled positions.

The first stage is, as noted above, unfilled tenured positions at the beginning of the school year. This paper calls these primary unfilled positions.

In order to handle these unfilled tenured positions, as the second stage, the municipal boards of education (below, BoE) look for temporary or contract teachers (replacements for teachers on maternity/childcare/sick leave of a year or more, on contracts of up to three years), in collaboration with the prefectural BoE. Figure 1 shows that replacements were found for all positions in junior high school health and physical education, but were insufficient elsewhere, with 150 unfilled positions (96 in elementary schools, 54 in junior high schools) remaining. These temporary teachers’ unfilled positions are here called secondary unfilled positions.

As the third stage, the BoE look for part-time teachers (so-called quasi-full-time adjuncts) to replace the temporary teachers. Figure 1 shows that 122 part-time teachers were assigned, leaving 28 positions unfilled (16 in elementary schools, 12 in junior high schools). This paper calls these adjuncts’ unfilled positions tertiary unfilled positions. Tertiary unfilled positions remain unfilled until replacements are found, with individual schools asked to take up the slack.

As above, unfilled teaching positions can be organized into three progressive stages. In the end, the duties of unassigned teachers must be handled by teachers at each school.

However, for junior high schools in particular, when tertiary unfilled positions remain and no one at the school has a license for the required subject, attempts to assign teachers may include using the unlicensed subject teacher system, collaborating with the municipal and prefectural BoE to have temporary or special licenses bestowed, and so on. Even so, there are still cases where all assignment attempts fail and classes on the subject in question cannot be held. This paper refers to unfilled positions in which no teacher can be assigned and classes cannot be held as quaternary unfilled positions. No cases of this stage have been reported in X Prefecture.

2.4. Uneven distribution of unfilled positions

Where are the most positions unfilled? By school type, primary unfilled positions as of May 1 included 553 maternity/childcare leave positions in elementary schools, 3.7 times the 150 in junior high schools. However, they were covered with secondary and tertiary assignments, resulting in no significant difference in the rate of tertiary unfilled positions. That said, this was the situation as of May; elementary schools have more difficulty finding replacements for homeroom teachers, with an even worse rate of unfilled positions at the end of the school year than in junior high schools (discussed below).

Elsewhere, when considering junior high schools by subject, there was a bias in unfilled positions. The greatest number of primary unfilled positions was PE with 184, followed by social studies with 139; however, both were covered by replacements, with 0 tertiary unfilled positions. Subjects with high rates of tertiary unfilled positions included home economics
Why are we running short of teachers even as the birthrate declines?

(21.6%), technology (15.4%), and art (19.4%), all subjects with few class hours per week. Other high rates included Japanese at 14.9% and science at 12.1%. In this way, tertiary unfilled positions tend to occur in subjects with a low supply of replacements. In the 2021 interview survey, interviewee B said “For the last few years, we really haven’t been able to find replacements for technology and Japanese. The education university graduates go to the ordinance cities. So we ask retirees to fill in, but they never agree the first time around, so we have to keep on and on asking. I’m on my way to do that right now.”

2.5 Shifts over the school year in unfilled positions

Because maternity/childcare and sick leaves occur during the school year, unfilled positions are constantly in flux. Figure 2 shows the difference in unfilled positions by period. Due to the limitations of the available data, this figure shows the numbers for the 2019 school year, in which the total secondary unfilled positions (elementary and junior high) increased from 83 in May to 142 in September and 218 in January. Tertiary unfilled positions likewise increased from 43 in May to 89 in September. The prefectural BoE took these increases seriously, issuing a notice of their intent to hire two part-time teachers for each unfilled position, but by January the number was 61, still higher than in May. This makes it clear that unfilled positions are higher in the second and third terms than in the first, because although teachers go on leave during the school year, there are not enough replacements.

Comparing shifts over the year by school type, secondary unfilled positions in elementary schools increased 2.6 times from May January (66 to 169 people). The secondary unfilled position issue becomes more serious each term in elementary schools. This is because due to the homeroom teacher system, temporary teachers must take on the heavy weight of homeroom teacher duties, which is thought to make it difficult to attract temporary teachers.

<table>
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<td>Jan.1</td>
<td>May.1</td>
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*According to the 2019-2021 inquiry

2.6 Toward an understanding of unfilled positions

As above, in order to understand unfilled teaching positions accurately, “unfilled posi-
tions” (teacher shortages) must be defined based on the following four points. First, what point of view unfilled positions are addressed from (capacity conversion or actual numbers); second, whose positions are unfilled (teachers with tenure, without tenure, part-time, etc.); third, where the unfilled positions are by school type and subject; and fourth, the period of unfilled positions within the school year.

3. Increases in unfilled positions and the factors therein

3.1. Increases in unfilled positions

Are unfilled positions really increasing? The common understanding found in the 2021 interview survey was that positions were filled somehow until around 2017, but in mid-2018 unfilled positions arose, followed by temporary unfilled positions from the beginning of the 2019 school year (Figure 3). Research into the filling of the allocated quota as of May 1 within the α Educational Office jurisdiction found that among temporary unfilled positions (secondary unfilled positions) in elementary schools, the numbers were 0 in 2018 (0% unfilled), 21 in 2019 (14%), and 13 in 2021 (10%), with shortages of temporary teachers at the beginning of the year starting in 2019. For junior high schools, temporary unfilled positions began in 2018, with 2 in 2018 (2%), 3 in 2019 (3%), and 6 in 2021 (5%). Shortages of temporary teachers from the beginning of the year began in X Prefecture around 2018 or 2019.

3.2. Factors in the increase of primary unfilled positions

Why are unfilled teaching positions increasing? The factors at each of the three stages differ. First, primary unfilled positions are increasing due to increases in vacancies, maternity/childcare leave, and sick leave.

3.2.1. Increase in vacancies

Factors in the increase of vacancies are planned vacancies due to hiring restrictions and unplanned vacancies occurring after hiring.
3.2.1.1. Increase in planned vacancies

According to the 2021 interview survey, factors in planned hiring restrictions include the following three points. First, long-term measures to avoid a teacher surplus as the birthrate declines. X Prefecture estimated teacher needs based on a 10-year population forecast and made a long-term plan for teacher hiring. Normally, all teachers with tenure would be assigned for the positions demanded by ordinance for the given school year. However, the birthrate is declining throughout the prefecture, with teacher demand expected to continue to decrease; with employment through retirement in mind, if all the required teachers were hired with tenure, a surplus would eventually result, with a strain on the budget. Therefore, the plan was to restrict tenured hiring from this point in time on, compensating with assignment of teachers without tenure to adjust demand in the long term. The X Prefecture teacher demand estimates did not take account of policy-based demand increases such as those due to deliberately decreased class sizes.

The second factor was short-term surplus countermeasures based on the increase in special education classes. From the perspective of ensuring enrollment for all students resident in the school district, public elementary and junior high schools cannot manage their capacity as high schools do. However, when class numbers fluctuate due to children transferring in and out, the Act on Standards requires that teacher numbers fluctuate accordingly. Therefore, overstaffing beyond the allocated quota due to fewer classes is a major problem, as teachers hired through the regular process cannot be suddenly fired. In the 2021 interview survey, interviewee B referred to this as a teacher surplus, pointing out that “a surplus is absolutely impermissible,” and constitutes “the worst of the disasters.” That is, in order to prevent surpluses of this kind, schools where class numbers are likely to shrink are provided with vacancies in advance and compensated for with teachers without tenure.

However, the increase of special education classes in recent years has apparently increased the risks of teacher surpluses. The standard class size for special education classes is 8 students; because one class is created for at least one student with each disability type (intellectual/physical/illness-prone/low vision/hard of hearing/emotional), the risk of fluctuating class numbers is higher than in normal classes. In X Prefecture, special education classes have been steadily increasing since 2000, when there were 429 in elementary schools and 209 in junior high schools; as of 2020, twenty years later, they had more than doubled to 1017 and 472 respectively. As well, when the 2020 class sizes are viewed by disability type, the average class size for intellectual and emotional disability classes was roughly 5 students and for the others roughly 1 student (Figure 4). In addition, class numbers may decrease when students graduate and classes cannot be consistently set, making it difficult to hire new teachers with tenure.

As noted above, although public schools are “inevitably” unable to manage capacity, assigning more teachers than the number allocated by the prefecture to schools is absolutely prohibited, even in the short term; this is a major factor in the increase in primary unfilled positions.

The third factor is the decreasing trend in applicants for the teacher employment exam. Figure 5 shows the shifts in numbers of applicants for the teacher employment exam in X Prefecture from fiscal year 2012 through 2021. In elementary schools, there were 2073 applicants for 430 positions in 2012 (4.82x), but in 2021 there were only 1129 applicants for 350 positions (3.23x), demonstrating a consistent decline.
In junior high schools as well, there were 1966 applicants for 240 positions in 2012 (8.19x) but only 1176 for the same 240 in 2021 (4.90x). Although there was a minimal increase in applicants in 2017 alone, the trend otherwise was in decline. By subjects, in 2021 there were only 10 applicants for 10 technology positions in 2021, and 21 for 16 art positions. It is now impossible to be sure of the required number of teachers for these subjects, due to factors like applicants who do not take the test or accept the job. In the 2021 interview survey, interviewee A, who has long experience as a prefectural personnel officer, indicated that they were unwilling to recruit more widely immediately, due to concerns about decreasing the quality of teachers hired.

### 3.2.1.2. Unexpected increase in vacancies

Vacancies also occur when already employed teachers with tenure decrease after the number of new hires for the following school year is decided. Unlike those in the previous section, these are unplanned vacancies as far as the BoE is concerned; they have also remained high in recent years.

First, some are vacancies due to teachers leaving their jobs for their own reasons. The peak of age-based retirement numbers has passed in X Prefecture, with recommended retirees also decreasing yearly, but those leaving for personal reasons remain numerous. Unlike age-
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Based on retirement, these teachers need only notify the BoE a month before their departure, meaning that there is no time to adjust new hiring numbers for the following year and vacancies result. Also, roughly half of them give “hired in other prefectures” as the reason for their departure. For example, according to the 2019-2021 inquiry, there were 120 teachers leaving for personal reasons at the end of the 2019 school year, of whom 58 had been hired by other prefectures. Teachers hired by X Prefecture in the mass hiring era want to go back to their homes and now find it easier to be hired there; this is thought to be one factor in the consistently high number of leavers of this kind.

In addition, there are vacancies due to rehiring refusals. Age-based retirees are expected to be rehired until they reach pension age, but there are now few (full-time) aspirants: only about 35% of age-based retirees in elementary schools and 55% in junior high schools. Also, the rehiring contract is on a one-year renewable basis, but only about 60% of rehirees in ele-

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**Figure 6** X Prefecture α Educational Office teacher employment status (percentages by school type and age group for AY2011 and AY2021)

- AY2011 Elementary
- AY2021 Elementary
- AY2011 JHS
- AY2021 JHS

*According to the 2019-2021 inquiry

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**Figure 7** Changes in length of childcare leave within the X Prefecture α Educational Office jurisdiction

- 2014
- 2018
mentary schools and 70% in junior high schools renew their contracts, a low rate in comparison with school nurses and clerical staff (2019-2021 inquiry). Vacancies thus arise when unable to assemble the expected rehirees.

3.2.2 Increase in maternity/childcare leave

The second factor in the increase of primary unfilled positions is the increase in teachers taking maternity/childcare leave and the extended period of these leaves. The number of teachers of childbearing age in X Prefecture has increased, with more people taking maternity/childcare leave. According to the distribution of teacher ages within α Educational Office jurisdiction in the prefecture (Figure 6), the percentage of elementary school teachers in their 20s and 30s was 42.9% in 2011; by 2021 it had risen to 58.5%. In junior high schools, the percentage likewise rose from 29.9% in 2011 to 52.9% in 2021. There were 128 elementary school teachers and 29 junior high school teachers on maternity/childcare leave in 2021 within this jurisdiction, about 7% of all teachers with tenure.

Further, with regard to changing leave periods, comparison between the data available from the 2014 and 2018 school years shows that leaves have become noticeably longer (Figure 7). In 2014, just 1.5% took three-year leaves, but by 2018 the figure had risen to 14.2%. Further, in 2021, 9.9% of leavetakers extended their leaves to five or six years when a second child was born during the first leave period. The background of these extended leave periods is thought to include the shortage of available nursery care as well as the difficulty of balancing childcare with the increasingly busy school environment and lack of personnel upon return from the leave.

3.2.3. Consistently high leave-taker numbers

The third factor in the increase in primary unfilled positions in the increase in leave-takers. Looking at the shifts in total leave-takers within the school year in X Prefecture, the numbers have been consistently high since 2016 (Figure 8). Teachers on leave are by definition expected to return, meaning that new hiring cannot be expanded.

3.3. Factors in the increase of secondary unfilled positions

Next, let us examine the factors in the increase of secondary unfilled positions: that is, the failure of supply of temporary teachers to meet demand, or the shortage of temporary teachers.

All three of the participants in the 2021 interview survey pointed out that the major fac-
tor was the decrease in list registrants after the teacher employment exam. In X Prefecture, aspirant temporary teachers apply to the municipal BoE or Educational Office, register on the list after interviews, etc., and are hired based on the list. A, who has handled personnel for the prefecture for many years, noted that while once there were numerous aspiring registrants at the beginning of the school year or after the announcement of teacher employment exam results, with shortages unheard of, in recent years the shortage has become chronic. This complies with the results of MEXT’s “Questionnaire on the Status of Obtaining Teachers” released in 2018.

In addition, all three interview survey participants mentioned the extreme difficulty of recruiting temporary teachers. B, for example, complained about the uselessness of the “Human Resources Bank for Supporting Schools and Children” established by MEXT during the COVID-19 pandemic and remaining in place thereafter. Normally, aspirants visit municipal BoEs and register for the list, so the staff in charge actually meet and talk with them, if only for a short time, and get a sense of them to inform the inspection of their documents. However, with the Human Resources Bank, only the application information registered on the MEXT dedicated site is sent to BoEs in the requested places of employment. Therefore, when a temporary teacher aspirant is registered, the BoE must summon the candidate for an interview and take significant steps in order to hold interview exams with accountability. This labor does not guarantee that the aspirants will be suitable for hiring. Therefore, the Human Resources Bank was “useless.”

3.4. Factors in the increase of tertiary unfilled positions

Finally, let us examine the factors in tertiary unfilled positions, that is the shortage of temporary adjuncts.

The major factor is the weight of duties. In X Prefecture, when there is a shortage of temporary teachers, part-time teachers are hired in order to prevent any effect on educational activities. According to the 2019-2021 inquiry, as of May 1, 2021, a total of 884 part-time teachers were employed, of whom 40 were replacements for secondary unfilled positions (quasi-full-time adjuncts). In short, the shortage of teachers among adjuncts willing to take on full-time-type positions is a factor in tertiary unfilled positions. For elementary schools in particular, because in effect part of the duties of a homeroom teacher are required, the stress of the position is too much compared to the position of a part-time teacher, leading to a shortage of those willing to take on quasi-full-time adjunct work.

The context herein includes the aging of adjuncts. The hiring of adjuncts in X Prefecture elementary and junior high schools viewed by age includes 52.7% in their 60s and 7.1% in their 70s, meaning that retired teachers comprise about 60% of the whole (Figure 9). In terms of physical capacity as well, they are thought to find replacement as adjuncts for temporary teachers too stressful.

Further, another factor in the shortage is the expiration of teaching licenses due to the license renewal system. Those with expired licenses cannot be hired immediately as adjuncts, no matter how much they are needed. Further, as of the end of March 2021, teachers aged 66, designated Group 1 as of the introduction of the teaching license renewal system, were facing the end of their valid license period. At X Prefecture α Educational Office, there were 17 rehirees and temporary teachers aged 65 during the 2020 school year and just 6 aged 66 in the 2021 school year (2019-2021 inquiry). 11 people (64.7%) are thought to have left the
schools with licenses unrenewed. In the 2021 interview survey, B the personnel officer said “At this point we’re bowing down to anyone with a permanent license,” indicating that their main pool of replacements now consists of teachers with permanent licenses (aged 67 and up as of 2021), who are not subject to the renewal system as of its 2009 introduction.

As above, while maternity/childcare and sick leave replacements for permanently needed teachers with tenure have increased, new hiring cannot be increased because of concerns about teacher surpluses, increasing the dependence on teachers without tenure; however, aspirants for the latter are also on the decline, leading to unfilled teaching positions.

![Figure 9] Employment status of part-time adjuncts in X Prefecture elementary and junior high schools (percentages by age group and gender in May 2021)

### 3.5. Structural factors in the increase of unfilled positions

To delve further into the issues above, the issue of unfilled teaching positions has arisen in part through a complex of the following macro-level factors.

At the municipal level, increasing demand for special education classes has increased the risk of fluctuating class numbers. At the prefectural level, teacher hiring has been deliberately restricted. The context of these restrictions, in addition to the declining birthrate and Japan’s lifelong employment system, includes financial reforms at the national level level from the 2000 Omnibus Decentralization Act enforcement on. Along with the 2001 revision of the Act on Standards, the 2004 introduction of total sum discretion to the compulsory education national government budgeting system, and the 2006 reduction to 1/3 of the rate paid by the national government, in 2006 as well a plan to decrease the number of regional civil servants was put into motion. That is, with no sign of improvement in teacher assignment numbers or increase in budget at the national level (Ogawa 2016, Matsuda 2018), prefectures were further asked to cut their civil servants, while also being given greater discretion over teacher hiring and salaries, etc.; therefore, they restricted tenured hiring and attempted to make up the difference with untenured hiring (Aoki 2013, Kaneko 2014).

One other reason for the restraint in hiring is concerns that, given the drop by half of teacher employment exam applicants over the last decade (Figure 5), a sudden increase in
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hiring might make it difficult to ensure quality in successful examinees. The drop in applicant numbers likewise has its roots in national teacher policies, in addition to changes in the age composition of teachers.

According to MEXT, the average national competitive rate for the teacher employment exam began to fall sharply around 2000. The teachers hired en masse to handle the enrollment of the first baby boom were retiring around the country, requiring higher employment. However, as the employment numbers increased, the government deployed a policy of reducing supply. From the Report of the Committee on National Teacher Training University Facilities (2001) on, they proceeded with the reorganization of teacher training universities and faculties. Moreover, based on the view that only those with enthusiasm and a sense of mission should be able to receive teaching licenses, the Educational Personnel Certification Act was revised in 2007: along with more severe requirements for the teaching license, the revisions introduced the teaching license renewal requirement. Policies making teaching licenses more difficult to obtain were also put into place by prefectures and major cities, such as more stringent standards for acceptance into teaching practica. Further, teachers’ duties were significantly increased (through the establishment of the Period for Integrated Studies in 1998, Foreign Language Activities for elementary schools in 2008, moral education evaluation as a “special subject” in 2015, compulsory Programming Education in 2017, and Foreign Language for elementary schools likewise), but there were no supplementary policies improving teachers’ salaries or other benefits.

The development of social media has made it possible for anonymous teachers to protest the deterioration of their work situations, also reducing the number of students hesitating over entering the teaching field (Kawasaki 2019).

4. The effect on schools on the ground of increasing unfilled positions

How far has the increase in unfilled positions affected schools in X Prefecture?

First, there is the effect of the increased workload per individual teacher due to the increase in unfilled positions. Tertiary unfilled positions, that is cases where even part-time teachers cannot be found, require handling at individual schools.

There are basically three methods of handling these positions within schools. The first one is an increase in existing teachers’ workloads. In elementary schools, department heads and vice-principals, who would not normally be homeroom teachers, take on that position in addition to their existing jobs; in junior high schools, teachers with licenses for the relevant subjects add to their class hours to cover the classes with no teacher available. Alternatively, multiple special education classes are covered by one homeroom teacher. Second, there is the reorganization of the curriculum. For example, if a part-time teacher will be available from June on, the curriculum is changed to insert classes for that subject from June on. Third, there is the option of application for non-subject licenses. With special permission, teachers who are not licensed for the subject in question can cover classes in that subject for one academic year only.

As of May 2021, X Prefecture had 28 tertiary unfilled positions; as of July, there were no reports of classes being cancelled for lack of teachers. That is, teachers in each school had prevented class cancellations by taking on the work of 28 people in addition to their
own duties. This situation indicates the increase in workload per teacher due to the increase in unfilled positions. From the children’s point of view, compared to having the allocated quota of teachers present (no primary unfilled positions), the learning environment is unstable, affecting classes, daily life, etc. Even if situations like vice-principals acting as homeroom teachers, an effect of unfilled positions easily perceived by parents, do not arise, some effect on the quality of classes and guidance is likely, such as teachers handling more classes with less time to examine student notebooks.

Second, while unfilled positions increase the burden on all working teachers, they increase the workload per tenured teacher in particular. As of May 2021, there were 1971 primary unfilled positions in elementary and junior high schools. Divided by 504 schools, the result is an average of 3.91 missing tenured teachers per school. However, school duties include those that only tenured teachers can handle, such as tasks involved with the core of school management as well as the management of part-time teachers. That is, the work of approximately four tenured teachers at each school had to be carried out by the existing teachers. This burden only became heavier as more teachers departed on leave through the academic year. Since 2008, MEXT studies on teacher work status have helped raise issues with the brutal workload facing teachers, but the situation described above suggests that workstyle reform must both reduce unfilled teaching positions and optimize the workload of individual teachers.

Third is the influence of primary unfilled positions on the quality of educational activities involving children. Figure 10 compares the percentages of years of experience of teachers with tenure within the X Prefecture α Educational Office jurisdiction in 2011 and 2021. Teachers are becoming younger overall as the dankai sedai postwar generation \(^{10}\) retires en masse; in 2021, teachers in their 20s and 30s comprised 60% of all elementary school teachers. Viewed by years of experience as well, 47% of regular elementary school teachers and 45% of junior high school teachers in 2021 had fewer than 10 years of experience, an increase on 2011, indicating how experience has decreased.

In this way, about half of all teachers with tenure have less than 10 years of experience, while some 2000 temporary teachers are also assigned to fill primary unfilled positions. Moreover, most of the temporary teachers are in their 20s (see Figure 10), so that the total percentage of teachers with less than 10 years of experience is unquestionably higher than Figure 10 shows. Also, training opportunities for temporary or part-time teachers are scarce compared to those of teachers without tenure, with little support for professional growth.

The area of pedagogical research has produced numerous studies showing that in teachers’ professional development, years of experience correlate with increased lesson proficiency, and are considered an indicator for increased proficiency and specialization (Livingston and Borko 1989; Schön 2017, etc.). The further increase of teachers with little experience due to unfilled positions suggests the possibility of negative effects on teachers’ professional development. As well, the increased rate of dependence on teachers without tenure and greater tendency to manage labor by the hour have been called a “shift to the precariat” (Standing 2016), emphasizing divisions and hierarchies within the profession (Burns et al. 2009). This suggests the possibility of the deprofessionalization of the teaching profession and the growing divisions therein (Katsuno 2018).
5. Conclusion: Potential Issues

Here the conclusion presents three points and suggests issues for future research. First, this paper has shown that not only are unfilled teaching positions constantly in flux, but they also differ by school type, subject, time of year, and stage of substitution. Views of unfilled positions differ significantly depending on what the position is, why it is unfilled, and what the purpose of addressing it is. In the future, more elaborate survey design clarifying the status of unfilled teaching positions will be required.

In particular, academic consideration is called for concerning the methods and interpretation of the results of the MEXT survey on teacher shortages conducted from May to July 2021 (unreleased as of July 2021). For example, as noted above, April and May are the months with the fewest unfilled teaching positions, so the MEXT survey may fail to reveal the full severity of the situation in schools. As well, a survey directly conducted by MEXT, whose position it is to guide and advise the prefectures and ordinance cities, may well be biased in its responses due to fear of being held responsible for unfilled teaching positions.

Further, related to the conclusion above, another issue for the future is exploration of the problem suggested by Note 2 of the MEXT survey form (1-1): “Shortages do not include numbers not assigned to schools.” “Numbers not assigned to schools” refers to internal reserves in which BoEs do not allocate the required number of teachers to schools, mentioned as “pool numbers” (Horiuchi 2005, p.37) and “teacher numbers handled via the pool” (Ogawa 2001, p. 156). Prefectures and ordinance cities do not assign all the teachers regulated by ordinances to schools, keeping back the difference as internal reserves, of which a certain number are required in practical terms in order to assign new teachers when class numbers increase during the school year.

However, due to the teacher shortages in recent years, reducing assigned numbers and increasing the pool in advance may have been done in order to make it appear as if unfilled positions themselves are decreasing. No municipality has released the actual status of internal reserves of allocated quotas, making it impossible for this study to address the issue as well. Clarification thereof is an issue for future research.

Second, the paper has considered the causes and background of unfilled teaching posi-
tions, positioning them as the results of the post-2000 financial and administrative reforms and teacher training reforms, which have increased regional municipality discretion regarding teacher assignments, while allocated teacher numbers and budget do not increase. Unfilled teaching positions are likely to be the result not of a simple cause-and-effect process but a problem arising from a complex of macro-level factors, for which improvement will require a holistic approach.

Third, the paper has considered the effects on schools on the ground of the increase in unfilled positions. In X Prefecture, after the retirement of the postwar generation, about half of all teachers with tenure now have less than 10 years of experience, in addition to the 2000 temporary teachers hired yearly. Therefore, the burden of teachers with tenure has also increased. The problem of unfilled positions requires resolution from the perspectives of lesson quality and teacher professional development in addition to that of workstyle reform. Future issues include research into medium- to long-term holistic improvement measures for the problem of unfilled positions, not just short-term bandaids, such as the fundamental reconsideration of the Act on Standards proposed by Suetomi (2016).

Notes
1 An ordinance city is a city regulated in the Local Autonomy Act as “a city designated by ordinance of population 500,000 or above.” Through decentralization reforms, ordinance cities are able to hire teachers, as well as prefectures.
2 Through the 2001 revision of the Act on Standards, the hiring of part-time teachers within the allocated number of teachers, subject to governmental coverage of compulsory education costs, was permitted (the so-called “disarranging the capacity figures”). X Prefecture regulations include up to 29 work hours per week, a hiring period of at least 3 months, monthly salary payments, no employment during summer vacation, and treatment as staff hired for the fiscal year.
3 A system that enables teachers of other subjects in the same school to cover the relevant subject for no more than a year without the relevant license, if it is not possible to hire teachers holding licenses for the relevant subject.
4 A license valid only for 3 years within the prefecture of issuance, as an exceptionally issued assistant teaching license, granted only when it is not possible to hire teachers with regular teaching licenses.
5 A license specially granted to working adults with superior knowledge or experience who do not hold teaching licenses.
6 For example, at Kure Municipal Yoshiura Junior High School in Hiroshima Prefecture, when unable to find a replacement for part-time teachers who had quit, classes in eighth-grade science and seventh-grade Japanese could not be held during April 2018. (Nihon Keizai Shimbun, “Kyoin fusoku de jugyo dekizu: 4-gatsu bun, Hiroshima no ichiritsu chu [Teacher shortages means classes cannot be held: April classes at a municipal junior high in Hiroshima],” May 14, 2018)
8 Regarding part-time teachers, a comparison of lists at each Educational Office enabled identification of those working at multiple schools in order to grasp the actual total numbers accurately.
9 MEXT, “Reiwa 2-nendo (Reiwa gannendo jisshi) koritsu gakko kyoin saiyo senko shiken no jissshi jokyo no point [Important points on the implementation status of the public school teacher employment examination for 2020 (held in 2019)],” February 2, 2021.
10 The dankai sedai postwar generation refers to the 1947-1950 first baby boom in Japan, a large generational cohort.
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