A Comparative Study on the System of Determining the Number of Primary and Secondary Teachers in Other Countries (Outline)

1. Purpose and Overview of the Research

(1) Purpose of the Research

Success in school education greatly depends on the teaching and learning support from teachers. Therefore, it is an important task to put in place an environment that will enable teachers to use their expertise. The result of the OECD (2014) Teaching and Learning International Survey (TALIS) in 2013 which targeted mainly junior high school teachers, however, has revealed various problems for teachers in Japan, such as the lack of confidence in guiding students to learn independently or the long working hours.

In order to consider these problems, there are two important viewpoints: (1) to secure the necessary number of teachers (2) to establish the framework where the whole school works effectively as one team, by reinterpreting expertise and duties of teachers, reconsidering role allocation and collaboration among educational staff, and staffing specialized personnel who have expertise and experiences not owned by teachers.

In this study, we considered the factor "(1) to secure the necessary number of teachers," which is thought to be a prerequisite to solve problems. We aimed to analyze the fundamental thinking together with the system of determining the number of teachers in target countries, compare those results with those of Japan, and acquire findings to consider future system of determining the number of teachers while learning the characteristics of the system in Japan.

(2) Overview of the Research

As the research target, we selected the following eleven countries considering a regional balance, from among the countries frequently referenced in Japan's policymaking discussions: Japan, Korea, Germany, France, Singapore, Australia, United States, United Kingdom, Finland, Canada and China. For comparing the system of determining the number of teachers in other countries in this study, we carried out surveys based on literature reviews focusing on two points: "How the Central Government is involved in deciding the number of teachers" and the "System of determining the number of teachers in each country." As for federal states, unless otherwise noted, a state is considered to be a Central Government. (Furthermore, as for the comparison among the countries, we need to consider that each system is based on the country's own culture and history.)

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2. Overview of the Research Results

(1) How the Central Government is Involved in Deciding the Number of Teachers

The ways in which the Central Government is involved in deciding the number of teachers can be categorized into three categories as shown in Table 1.

Table 1 How the Central Government is involved in deciding the number of teachers

Type	Characteristics	Country
(1) Central Government Decision	Central Government decides the number of teachers, based on its own calculation formula	Germany, France[*1], Australia, Singapore
(2) Local Government (Schools) Decision	Central Government allocates educational budgets including labor costs to local governments or schools, and local governments or schools decide the number of teachers using the budget and their own financial resources	United States, United Kingdom[*2], Finland, Canada, China
(3) Central Government Calculation, Local Government Decision	Central Government allocates the budget to the local government according to the fixed number based on the calculation formula, and the local government independently decides the number of teachers using the budget	Japan, Korea

*1 In France, a fixed number is decided at the Parliament every year, and they are allocated to regions and schools based on the calculation formula.

*2 In the United Kingdom, schools decide the number of teachers within an allocated budget.

The first type is "(1) Central Government Decision" and its characteristic is that the Central Government decides the number of teachers based on their calculation formula. Germany, France, Australia and Singapore use this method. All the teachers in these countries are national public officials, that is, the Central Government decides and allocates the number of national public officials.

The second type is "(2) Local Government (Schools) Decision." In this type, the Central Government allocates the educational budget including labor costs to local governments or schools. However, one difference is that the local governments or schools decide the number of teachers using the budget and their own financial resources. The United States, United Kingdom, Finland, Canada and China use this method. Decentralization is major in these countries traditionally (United States, Canada), as a school education reform policy (The United Kingdom, Finland) or practically due to large land size and diversity (China).

The third type is "(3) Central Government Calculation, Local Government Decision." Its characteristic is that Central Government allocates the budget to the local government according to the fixed number based on the calculation formula, and local governments independently decide on the number of teachers using the budget. Japan and Korea use this method. It can be positioned between the first and the second type, combining the stability to secure equal opportunity in education nationwide, and the flexibility to allow regional originality. Please note the difference that in Japan public school teachers are local public officials, but they are national public officials in Korea. Another point of note is that the Korean government labor cost

contributions are integrated in local educational finance grants, which do not limit the use to specific administration or businesses, meaning the local government bears part of labor cost.

(2) Calculation Formula of the Number of Teachers in Each Country

The required number of teachers, assuming other conditions are the same, increases as the number of students increases, or their lesson hour increases, or decreases, as any of the following increases: (1) hours of lessons per teacher, (2) number of students per teacher or (3) class size. Considering which of (1), (2), (3) above is mainly used, we examined the type of calculation formula of the number of teachers regarding countries where central government is involved in the calculation as in Japan, and categorized them into three types shown in Table 2.

Table 2 Type of Calculation Formula of the Number of Teachers

Type	Calculation Formula	Country
(1) Hours of Lessons Type	$\text{Number of Teachers} = \dfrac{\text{Total Lesson Hours}}{\text{Number of Lesson Hours per Teacher}} \times R \text{ (coefficient)}$	France (junior high)
(2) Number of Students Type	$\text{Number of Teachers} = \dfrac{\text{Total Number of Pupils}}{\text{Number of Pupils per Teacher}} \times R \text{ (coefficient)}$	Korea, Germany, France (elementary), Singapore, Australia
(3) Class Size Type	$\text{Number of Teachers} = \dfrac{\text{Total Number of Pupils}}{\text{Standard Class Size}} \times R \text{ (coefficient)}$	Japan

France (junior high) is categorized as "(1) Hours of Lessons Type" where the number of lesson hours per teacher is mainly used. This system is considered to be suitable for the culture of France where teachers' roles are limited to lessons (junior high).

Korea, Germany, France (elementary), Singapore, Australia are categorized as "(2) Number of Students Type," where the number of students per teacher is mainly used. Even in these countries, the class formation standard may be defined by the government separately from the number of students per teacher. However, the differentiation in the number of students per teacher and the class formation standard brings an advantage of flexibility of forming classes using the allocated number of teachers efficiently.

Among the countries targeted for research, only Japan is categorized as "(3) Class Size Type," where the standard class size is mainly used for calculation. This is thought to be because the institutional design is closely related to our teaching method and educational practice where we form classes in a same grade and carry out educational activities mainly per class.