

The Origin of Lesson Study in Japan

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Abstract: This study aims to clarify the history and issues in the origin of lesson study in Japan. In 1872, a new school system was started by the Meiji government. In that period, the object lesson was introduced in the normal school [teacher training college] as an updated teaching method for the new elementary schools. The object lesson method is based on Pestalozzian theory, according to which teaching should start from observation of objects that helps students recognize the concepts through their intuition. This method introduced a significant change in teaching. The normal school undertook on the responsibility of spreading the new teaching method through training teachers and also editing and publishing instruction manuals and textbooks. In the process, the criticism lesson was introduced as a teacher training method. In this method, the normal school students presented a lesson to the class and other students observed and discussed about it. For observation and discussion, four points of criticism were used: matter, method, teacher, and children. These are also useful for today's lesson study. The object lesson was spread along with the criticism lesson to the whole country through normal school products such as instruction manuals, new textbooks and the teachers who graduate. This form of lesson study shows us its origin and its principles. Later, the criticism lesson expanded its role from pre-service teacher training to in-service professional development. This describes how lesson study originated in Japan.

Key Words: Lesson Study, Object Lesson, Normal School, Criticism Lesson

I. Introduction

Japanese lesson study has been a popular professional development approach in recent years (Stigler & Hiebert, 1999). In this method, teachers collaborate to study teaching contents and instructions by observing lessons and discussing about them. Through such an approach, they try to improve the quality of their teaching.

The origins of this type of lesson study can be traced back to the early 1900s' when study meetings about new teaching methods took place in attached schools and private schools (Nakatome (ed.),1984). Lesson study was well established as a strategy

of in-service teacher training by the middle of the 1960s (Fernandez & Yoshida, 2004). This study attempt to determine the origin of lesson study prior to that period. The characteristics of lesson study include teachers observing each other giving lessons followed by critical discussion, but the origin of this style and the background of its acceptance are not well known. How did they build this professional development approach? In this study, this question will be explored through a historical methodology.

II. The Beginning of the New School System

During the early Meiji era (1868-1912) in Japan, the Meiji government introduced the Western social system for modernization of country's resources, including the school system. In 1872, a new school system named "Gaku-sei [School System]" was started by the government. Previously, only "Terakoya [primary school for general public]" and "Hankou [regional government school for feudal clans]" were available, which were not managed by the national government. Therefore, we can say that the modern school system in Japan began with "Gaku-sei."

In "Gaku-sei," the schools consisted of "Dai-gaku [University]", "Tyu-gaku [Secondary School]" and "Syo-gaku [Elementary School]". The Meiji government endeavored to spread "Syo-gaku" to the whole nation and to develop the system from elementary education to elite education for talented people. In this era, the matter of urgency was to introduce Western civilization and technology, and to build a modern country similar to Western countries. The schools undertook the responsibility to provide the country with appropriately trained human resources.

For mathematics education, the Meiji government directed schools to introduce Western arithmetic instead of Japanese arithmetic, because they needed to import Western technology. The subject "San-yo [Arithmetic]" was set up for elementary mathematics education. In "San-yo" they used Arabic numbers and written calculations based on decimal notation.

III. Normal School and the Object Lesson

To achieve the new school system, "Gaku-sei," teacher training was also needed. In 1872, the Meiji government established a normal school in Tokyo, to ensure the pre-service teachers learn the new teaching methods. American teachers, having experience in teacher training, were invited to teach in the normal school. One of these was Marion Scott who introduced the classroom teaching method in which one teacher teaches all the students together by using the black board or teaching charts and object lessons.

The object lesson is one of the teaching methods which was famous in

American normal schools in that era. The aim was to apply Pestalozzian theory to elementary teaching. According to Pestalozzian theory, all cognition is based on one's intuition, and intuition is absolutely essential for human cognition. We recognize things by intuition, and then form a concept. This was seen as a natural order of mental development. The starting point of intuition is the image we receive through the senses. Therefore, teaching should not start from reading books, but instead from the observation of a familiar object. Teachers then expect make their students to learn intuitively (Pestalozzi,1801).

In arithmetic, a teacher makes students count real objects such as fingers or small stones. The student can recognize the numbers intuitively through counting the real objects. In the case of $3 + 4 = 7$, for example, the teacher should not start from the abstract equation and operation. She should give her students three stones and four stones, then have them gather all the stones and count the sum of them. This activity will provide students a recognition of the process of addition and intuit the meaning of $3 + 4 = 7$.

The object lesson was introduced as an improvement over teaching by lecture, since that had been the previous method. In lecture, the teacher imparted the correct knowledge and students received it. Although the object lesson was an unfamiliar method when first introduced at that time in Japan, the normal school teachers were challenged to use this new education method. In normal school, new teachers were trained to understand the object lesson and to introduce it to all the schools in the country.

IV. Arithmetic Teaching by the Object Lesson

The role of normal schools was not only training teachers but also proposing new rules for instructions through editing and publishing instruction manuals and textbooks. At the beginning of "Gaku-sei", the only books available were translations of foreign texts but they were not useful for elementary students because of the high level of information. Suitable textbooks for students were strongly demanded. Responding to the demands, the normal school edited textbooks for each subject, using the foreign textbooks as a guideline. These textbooks became the foundation of modern textbooks in Japanese schools.

In arithmetic textbooks, we can see significant changes influenced by the object lesson. "Hisan Kunmou [Enlightenment on Written Calculation]" was the designated textbook for elementary schools in "Gaku-sei". It aimed to introduce written calculation, as performed in Western arithmetic, in Japan. In this textbook, the example $25673 + 8499 = 34172$ was used to introduce addition (Figure 1). Using these numbers,

the algorithm of written addition was explained. This was a general and abstract explanation for algorithm. In addition, the introductory example was not suitable for elementary students. After this introduction, practice drills were given. At the beginning of "Gaku-sei", such a textbook was commonly used.

In 1873, "Sho-gaku Sanjutsu-syo [Elementary Arithmetic Textbook]" edited by the normal school, was published. This was not only a new arithmetic textbook but also a representative of the object lesson in that era. In this textbook, addition was introduced through pictures (Figure 2). By showing objects, students were expected to

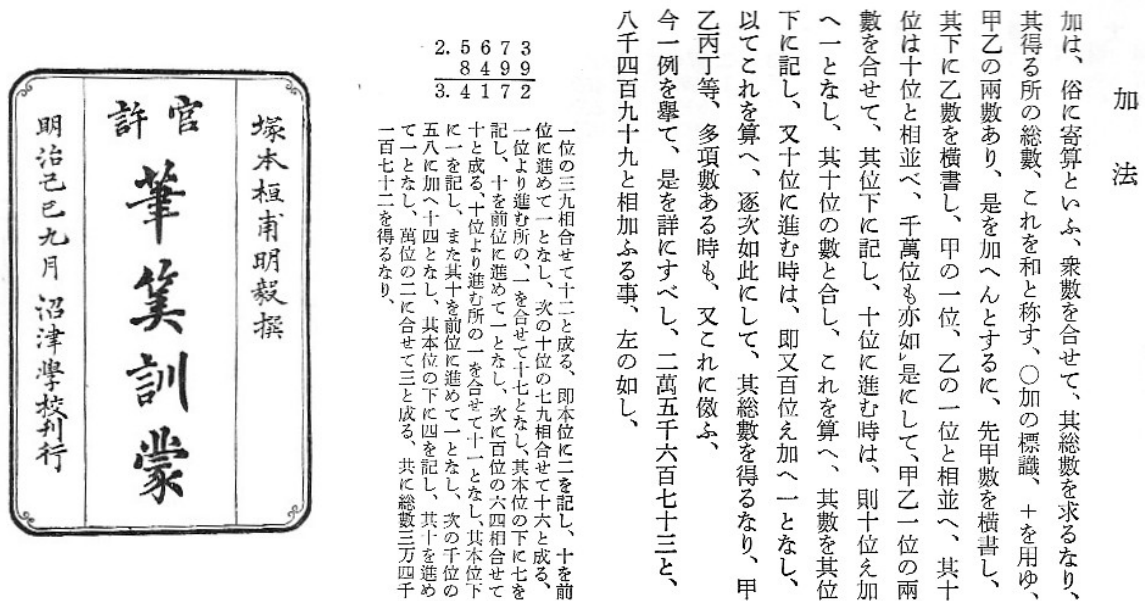


Figure 1 "Hisan Kunmou [Enlightenment on Written Calculation]" (Tsukamoto,1869)

The abstract of the translation of Figure 1 is as follows:

Addition

Definition of Addition,

Introduction to the term "Sum" and the sign "+"

Explanations of the positional notation and the algorithm in general

Example 25673
 ± 8499
 34172

3+9=12. Write 2 on ones. 7+9=16, 16+1=17. Write 7 on tens. 6+4=10, 10+1=11. Write 1 on hundreds. 5+8=13, 13+1=14. Write 4 on thousands. 2+1=3. Write 3 on ten thousands. Therefore the sum is 34172.

understand the meaning of addition and the sum by their intuition. There was no equation initially, it was intended to be derived from students observation. Initially , small numbers, such as 1 and 1, were used. Such an approach seems very natural today but, compared with earlier used textbooks, this was a major change in student learning. After this introduction, the addition of numbers proceeded step by step, up to 10 + 9.

The differences between these textbooks are clear. First of all, the principles of teaching are different. The former focuses on teaching an algorithm for an abstract operation, and difficult numbers are given to explain this general operation. The latter shows the situations of addition and the results of that operation through pictures. No explanations are provided for the algorithm and equations are also absent in the initial parts of the textbook. The students are expected to recognize addition through their intuition by observing objects. The numbers given are simple and easy to count, and are gradually increased. It is clear that the latter is more suitable as an introduction to elementary arithmetic.

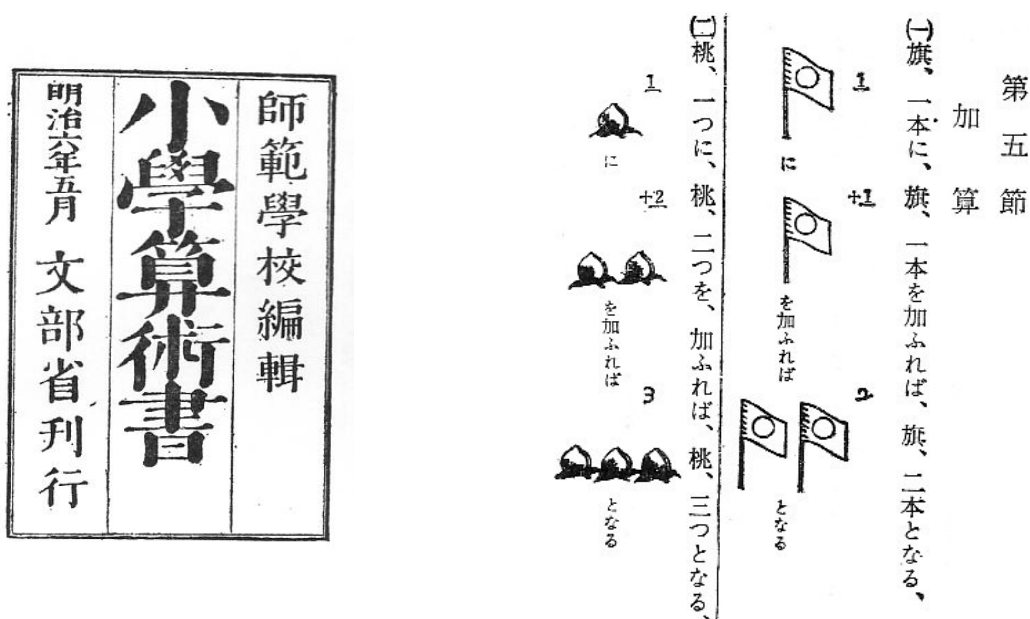


Figure 2 "Sho-gaku Sanjutsu-syo [Elementary Arithmetic Textbook]" (Monbusyo,1873)

The translated text of Figure 2 is as follows:

Section 5 Addition

- (1) One flag added to one makes two flags.
- (2) Two peaches added to one makes three peaches.

V. Spreading the Object Lesson

i) The object lesson as a teacher training method

To use the new textbook based on the object lesson, all the teachers in the nation needed to be well trained. To spread the object lesson method, a new teacher-training program was developed in the normal school. The normal school teacher referenced some books on introduction of object lesson, imported from America, about developing object lessons.

One of the books was written by Edward Sheldon who was the principal of New York State Normal School in Oswego. He introduced Pestalozzian theory to elementary education, experimented with it on attached schools and public schools in Oswego and developed the teacher training method to help teachers practice it. In his book, "A Manual of Elementary Instruction for the Use of Public and Private Schools and Normal Classes; Containing a Graduated Course of Object Lessons for Training the Senses and Developing the Faculties of Children", he introduced criticism lesson and model lesson, as the methods to be used in normal schools (Sheldon,1871).

The criticism lesson involves each normal school student showing a lesson to their group. The class observes this lesson, and then expresses its opinions on the various points of the lesson in which they thought the teacher had succeeded or failed.

The model lesson is a lesson given by a well-trained teacher. The normal school students would take notes on the lesson, observing, the teacher's ideas and plans. It is important to observe a sufficient number of model lessons, as well as criticism lessons, to develop a well-trained teacher.

Teacher training and the object lesson cannot be separated. To succeed at spreading object lesson in whole country, well-trained teachers are needed. On the other hand, to train teachers, the object lesson itself is very useful. Because the teacher are required teaching skills to succeed the object lesson. the object lesson provided a suitable learning experience for teachers.

ii) Criticism lesson and points of criticism

Sheldon(1871) defines specific points of criticism in his criticism lesson. These four categories are matter, method, teacher and children. Regarding subject matter, three points are awarded on the basis of whether it is suitable for children. In the method category, seven are awarded on the basis of whether the teacher clearly comprehends the distinction between information that must be imparted by teacher and information that must be developed by child. For teacher category four points are awarded , one each for class management, the standing position in the classroom, manner, and language of teacher. In the children category two points are awarded, one each for

attitude and understanding of the students. These categories are also appropriate for today's lesson study.

To conduct a criticism properly, Sheldon mentioned that it was necessary to have a presiding critic and to develop a summary the opinion at the end. In the criticism lesson, two principal objectives are always achieved, to acquaint normal students with the principles of education that are based on the nature of children and to utilize the principles of teaching. By comparing the objectives with the outcomes, the criticism lesson can succeed in training teachers. These approaches are also appropriate in today's lesson study.

These points of criticism are exactly the same as those introduced teacher training classes at normal schools. In the instruction manual "Kaisei Kyojutsu [Revision of Teaching Methods]" written by normal school teachers in 1883, the points of criticism were introduced as viewpoints to use while observing other teachers' classes (Wakabayashi & Shirai (eds.),1883). This method was also emphasized for use by normal school students. In those days, normal schools were established in local regions of Japan. The object lesson was spread from Tokyo normal school to the local normal schools through manuals, the new textbooks mentioned previously, and the teachers who graduated from Tokyo; then it was spread from the local normal schools to whole country. Thus the principles and method of object lesson were spread.

iii) Development of lesson study

Inagaki (1995) described the criticism lesson as practiced around late 1890s. They were conducted in elementary schools attached to normal schools. In this case, although the teaching methods were changing from the object lesson to Herbert's five phases of teaching, the criticism lesson remained a useful method to develop and train new teachers.

In the early 1900's, many local boards of education also held the conferences for teachers in order to develop new teaching methods. The criticism lesson was accepted as a method to be used the teachers conference. The conferences were called "Jugyo-hihyo-kai [criticism lesson conference]" or "Jugyo-kenkyu-kai [Lesson study conference]". This can be seen in the educational magazines published in that era; some records were found about the use of lesson study in not only normal schools but also local elementary schools.

As stated before, the criticism lesson was originally established as part of lesson study and it spread to local normal schools for teacher training. The criticism lesson later expanded its role from pre-service teacher training to in-service professional development. From the historical development of the criticism lesson, we

can see the origin of lesson study in spreading the object lesson and teacher training during the early Meiji era in Japan.

VI. Conclusions

The origin of Japanese lesson study can be seen in the early Meiji era. During this time, the object lesson was introduced as a new teaching method. To spread the method, teacher training became an important issue. Pre-service teachers in normal schools would practice the object lesson by using the criticism lesson. This demonstrates the origin of lesson study and its principles. The criticism lesson later expanded its role from pre-service teacher training to in-service professional development. This describes how lesson study originated in Japan.

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