

Lesson Analysis for Sustainability of Lesson Study

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Introduction

- One of the main academic tasks of educational researchers is to find a significant way to support teachers to sustain their lesson study practice in schools. This paper discusses on methods of lesson analysis (*Jugyou Bunseki* 授業分析) as an effective way for developing and continuing lesson study (*Jugyou Kenkyuu* 授業研究) in Japan.

Lesson Analysis and Lesson study



Purpose of the Research

- The function and vision of lesson analysis in order to sustain and enhance lesson study will be clarified in this research through the joint project carried out by Nagoya University and schools of Tokai City over a period of five years(2002-2007).

Purpose of the Research(2)

First, the paper discusses what is lesson analysis and how teachers can do lesson analysis and find a new perspective to continue lesson study. Then, the paper discusses how lesson analysis support academic researchers and teachers to do lesson study collaboratively, and to understand student learning and expand professionalism in teaching.

What Is Lesson Study?

- 1) Lesson study is a model of Japanese school-based teacher professional development.
- 2) Lesson study as collaborative research on classroom activities is thought to make possible the exchange of experiences between teachers, collaborative planning, participatory learning, the enhancement of professional dialogue among teachers, and teachers' reflection.

Spirit of Japanese Lesson Study

Collaborative research

Shared experiences

Reflect on action

Kaizen (improvement)

Learning from each other

Continuous change in practice

Acquire professional knowledge in school

What is lesson analysis ?

Lesson analysis is method for analysis and reflection of the lesson based on the transcription

Social conditions surrounding lesson study

- Teachers in Japan have been carrying out lesson studies as a part of collaborative research of lessons as the foundation of schools.
- Some have volunteered to gather beyond districts and to hold voluntary study groups.

A Voluntary Study Group

Seminar in Summer Vacation



Social conditions surrounding lesson study(2)

- Graduate school for teaching is about to be established in order to educate practical teachers.
- Kyoshi-Jukus (seminars for developing teachers' professional abilities).

Conditions surrounding in-school training

- Discussions do not become profound (they remain weak in content).
- The atmosphere is exclusive (insiders only).
- Training lasts for only a year with poor vision.

Conditions surrounding in-school training(2)

- The guidance process is patterned, it is of a compulsory nature (no idea of enhancing humanity).
- Training is training, a class lesson is a class lesson, training not being practical.

Lesson studies in the world

- Development of research programs(Stigler, U.S.A.).
- Teachers' professional development (Fernandez, U.S.A).
- Understanding of children by teachers (Lewis, U.S.A.).
- Mentor function in teacher preparation (U.K).

Lesson studies in the world(2)

- Lesson analysis (*Unterrichtsanalyse*) (Kuhn, Germany).
- Development of lesson techniques as an art (Lernkunst) (Grammes, Germany).
- verification of the effect of the textbook (Gao, China).
- Action research, educational reform (U.K.: Lo, Hong Kong).
- School improvement (Arani, Iran) .

Researching lesson study

- linguistic research, sociological research,
- psychological/cognitive research (Akita 2004).
- Approach analysis of interaction within the class emerged as the most comprehensive research for lesson study (Rex. Steadman, & Graciano 2006).

Researching lesson study(2)

- The methodology of lesson study must question what kind of new horizons or significance can be acquired.
- For example, when looking at the Japanese study of questioning, its contents have shifted from the traditional study of logical organization of the lesson content and social organization of the class to the study of semantic generation and participation structure.

Participants

- This project is based in the Fukushima junior high school district.
- Fukushima junior high school (17 classes, 28 teachers)
- Fukushima elementary school (16 classes, 22 teachers),
- Funajima elementary school (12 classes, 19 teachers) and
- Meirin elementary school (13 classes, 20 teachers, established in 2007).

Participants(2)

- **Researchers and graduate students** of the Graduate School of Education and Human Development, studying mainly in the area of educational methods, are working as research helpers with the four base schools.
- **A teacher's consultant** from the Tokai City Board of Education and the chief of the Teacher's Training Center (since 2006) are also involved with this project.
- When a lesson study is carried out in one school, members from the other three schools, the Board of Education and the university participate.

The role of author in the project

- The author introduced the **model of lesson study** and its philosophy to three schools in 2002, as the general manager of the project.
- **The significance of nominating students** for research,
- **observation methods** during the research lesson including how to take memos on stickies, methods to create comprehensive records of research lessons,
- and **discussion methods** for meetings after research lessons are explained within the context.²⁰

Data Collection

- Analyzing documents concerning the collaboration.
- Collection unit plans and lesson plans carried out in the project.
- Recording all research lessons and meetings after the lessons.
- Interviews with the principals, vice principals, directors of school based research, and the leaders that joined each group, etc.

Japanese Model of Lesson Study and Lesson Analysis

The participatory lesson study workshop

- Lesson studies have been named participatory lesson study workshops, and are implemented according to the following stages.
- This participatory lesson study workshop starts with discovering and sharing the problems a teacher encounters in practicing daily lessons.

First stage: Overall plan

- Annual plan of lesson study, and selection of research lesson and its teacher

Second stage: Creation of unit plan and lesson plan

- 1) Creation of lesson plan that can benefit best from the selection of nominated students for research .
- 2) Creation of unit plan and lesson plan by teacher groups of the subject or the grade.

Third stage: Preparation for research lesson

- 1) Clarification of problem consciousness in the research lesson.
- 2) Confirmation of the request for students.
- 3) The contents, methods and approaches concerning what the teacher wishes to realize.
- 4) Completion of the unit framework, lesson plan and seat table.
- 5) Determination of the nominated students for research (around three students).

Fourth stage: Sharing roles of observing and recording the research lesson, and explanations

- 1) Sharing roles of observing and recording the lesson.
 - a) Stenographer (2 persons): Describe the time, speaker and outline of the remark/action in chronological order.
 - b) Observer of the nominated students (1 to 2 persons for each student): Describe the condition of the student in chronological order.
 - c) Overall observer.

Observation

- 2) Points to remember during observation
 - a) Take down whatever the observer feels particularly about.
 - b) The observer will take down the condition of the nominated students being observed on stickies, in chronological order.

江高木 AとBが一緒にいるときに、AとBの間にいるようにした。

高木 ほかいいいですね？
「 ぽちちかかいたくない？ いいですね？
「 まあ、いいでしょう。
「 これに番号つけます。

「 Cのとる行どう。みんながとる行どう
「 10パターンのくらい出ましたが、プリントを見てください
「 自分がいやだなと思う項目にバツをつけて下さい

山中 先生、7番ってAがBの悪口を言ったことAは知ってるの？
高木 へん、それは想像してみても考え下さい。
「 さあ、そろそろかけた？

意見交換

「 おきたくん、起きて下さい！
「 おきたくん、やる気ないですか？
「 そろそろいいかな？
「 だいたいかけたら、どこにXをつけたかきくよ。

はい、それじゃあね、ちよっと途中で「もい」のでやめてください
「 どこにXをつけたかきくの2"手をあげて下さい。

- ① 何も言わずにそのままにいた。 これやったらって人？ 11人
- ② Bに伝えてAには内緒にしてBに直させた。 4人
- ③ Bにはらした。 18人
- ④ 相談にのるだけって悪口は言わない これいない？ OK
- ⑤ CもBの悪口を言った。 これたくさんいるね 24人
- ⑥ AとBの間に入るようにした。 これいないね OK

教師の意図が加える。

Sixth stage: Accumulation of the results

- Organize the discussion results, and distribute them. Also, organize the materials used in the research lesson, discussion materials, videotapes, and store them.

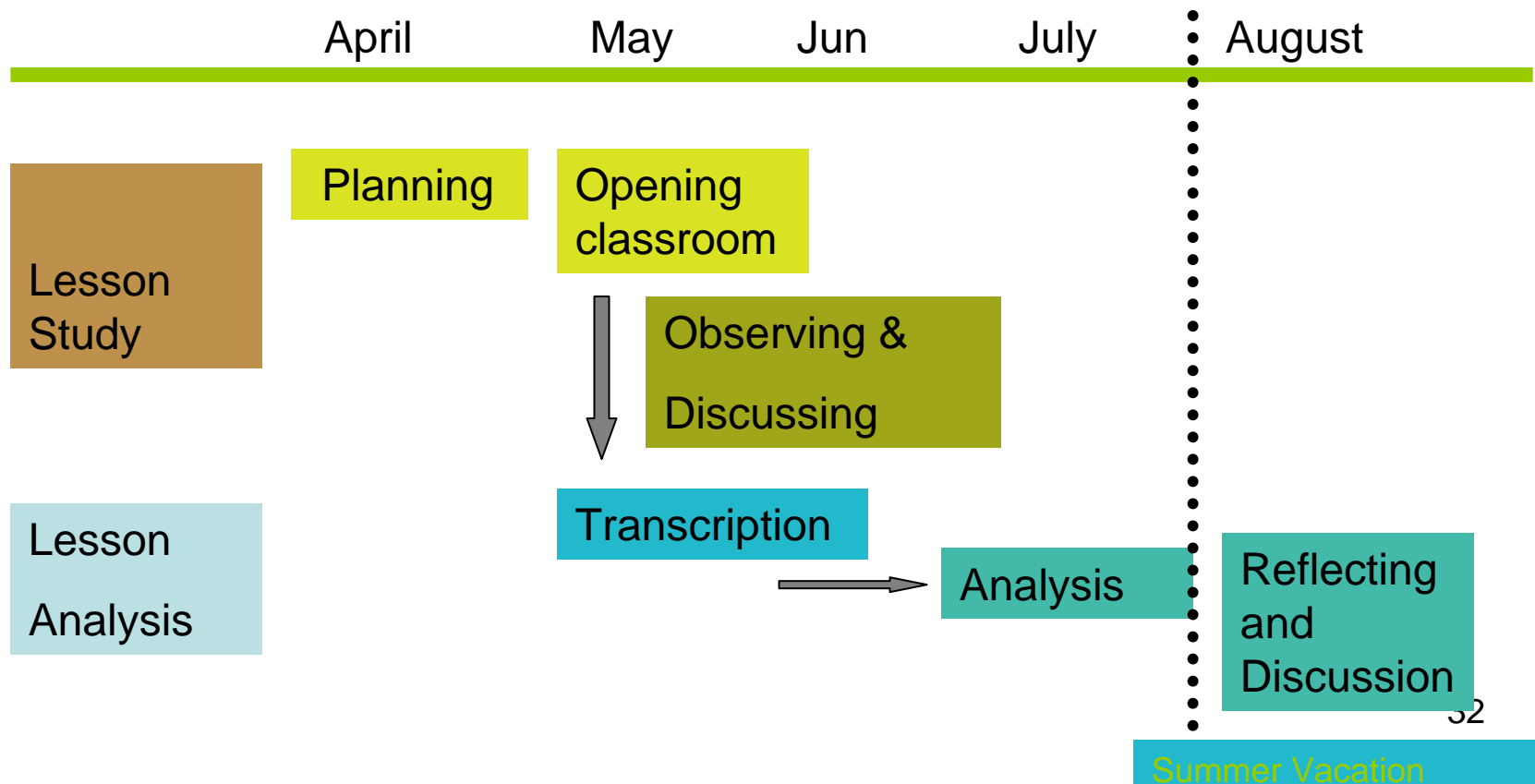
Seventh stage

- Implementation of lesson analysis: Lesson analysis is carried out once or twice a year during the long holidays in August and January using the transcript of classroom communication.

Lesson Study & Lesson Analysis

- Lesson study
short-term(1-2 month), discussion in 1-3 hours, reflection of the lesson based on the field notes
- Lesson analysis
intermediate-term(1-2) semester, discussion in half or one day, analysis and reflection of the lesson based on the transcription

Lesson Study and Lesson Analysis Relationship





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8:00 ~ 8:30	朝の集會
8:30 ~ 9:00	朝の自習
9:00 ~ 9:30	第1授業
9:30 ~ 10:00	第2授業
10:00 ~ 10:30	20分の自習
10:30 ~ 11:00	第3授業
11:00 ~ 11:30	第4授業
11:30 ~ 12:00	昼食
12:00 ~ 12:30	自習
12:30 ~ 13:00	校訓
13:00 ~ 13:30	第5授業
13:30 ~ 14:00	第6授業
14:00 ~ 14:30	第7授業
14:30 ~ 15:00	朝の自習
15:00 ~ 15:30	自習
15:30 ~ 16:00	第8授業
16:00 ~ 16:30	第9授業
16:30 ~ 17:00	朝の自習
17:00 ~ 17:30	自習
17:30 ~ 18:00	朝の自習
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99:30 ~ 100:00	朝の自習

授業分析会

9:00 ~ 全体会

9:30 ~ 教科部会①

13:00 ~ 教科部会②

全体会

Whiteboard content with name tags:

- Left side: 白井, 原田, 白井
- Middle: 原田, 白井, 奥井
- Right side: 岩松, 柘植, 奥井, 柘植, 宮本, 三浦, 白井, 原田, 奥井, 岩松, 柘植, 鈴木, 校長, 岩松, 柘植, 鈴木

Lesson Analysis in Summer Vacation

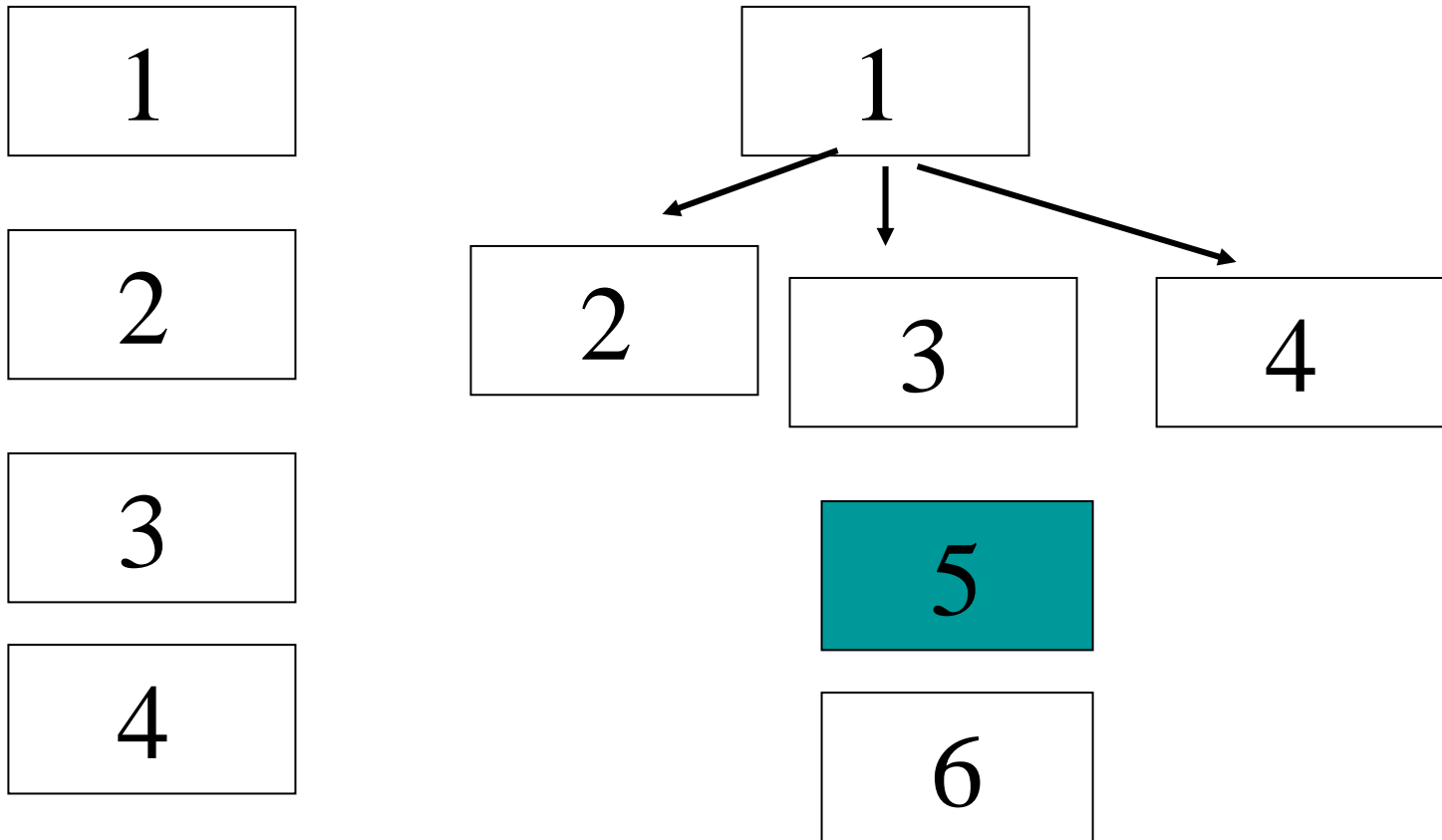
Steps of Lesson Analysis

- 1. Recording
- 2. Transcription
- 3. Word protocol
- 4. Articulation of the word protocol
- 5. Relation of the articulation

4. Articulation of the word protocol

- 1.(T1- Masako8): short explanation
- 2.(Toru9-Misako25): short explanation
- 3.(T26- Toru50): short explanation
- 5.(Misako51-Masaru112):
- 6.(Misako113-T126):
- 7.(T127-T134):

5. Relation of the articulation



Scene Analysis

- 5.(Misako51-Masaru112)

The other analysis approaches

- Individual case analysis
- Questioning(by teacher) analysis
- Analysis of the differences among the students thinking
- Analysis of the gap between teachers intention and students activities
- Climate analysis
- Goal analysis

Research Findings

- **1)The significance and function of Making Instant Transcripts**
- **2)Improvement of the Teacher's Questioning Through the Creation and Analysis of Transcript of Classroom Communication**

Research Findings(2)

- **3) Judgment of the Effect Based on Evidence**
- **4) Understanding of the Children's Remarks and the Teacher's Intention**

The significance and function of Making Instant Transcripts

- When comparing the amount of characters and the recorded remarks of instant transcripts with the transcript can be described as follows (Matoba, Shibata, et al. 2004):
 - 1) In instant transcripts, the contents are combined (remarks with the same contents are put together) or summarized (the key points of a long remark are summarized)

The significance and function of Making Instant Transcripts(2)

- 2) Remarks that are judged to be important by its content are recorded.
- 3) The description might be different from what the student meant to say.
- 4) Even when compared to the transcript of classroom communication, the instant transcript includes 30% -20% of all remarks.

The significance and function of Making Instant Transcripts(3)

- 1) Although it is a summarized or selective record of the remarks made during the whole lesson, it has a particular objectivity (time and content of remarks).
- 2) Since the time and content of the remarks are recorded, the order or remarks can be checked.
- 3) When observations of the nominated students are added to the instant transcript, a more holistic record can be created.

Judgment of the Effect Based on Evidence

- Lesson analysis workshop of “Use of positive/negative numbers” was held in June 2003, and three months later, a lesson analysis workshop was held, based on the transcript of classroom communication

Judgment of the Effect Based on Evidence(2)

- The teacher used the story of Harry Potter in making up the lesson plan and carrying it out, calling the positive term a “Gryffindor term” and the negative term a “Slytherin term,” thinking that this would make it easier to create a mental image of classifying each term.

Judgment of the Effect Based on Evidence(3)

- Initially, the participants in the discussion did not understand his intention. And then discussions concerning the creation of images for classifying positive and negative terms “headed to the direction that, the existence of communication between the teacher and the students, or among the students, may be what is important for the students to create their own images.”

Judgment of the Effect Based on Evidence(4)

- Also, in the discussion, the participants came to understand the significance of introducing the story of Harry Potter to them, as is stated "Chair: It means that the students will handle mathematical concepts by using the world of Harry Potter, or other images of their own."

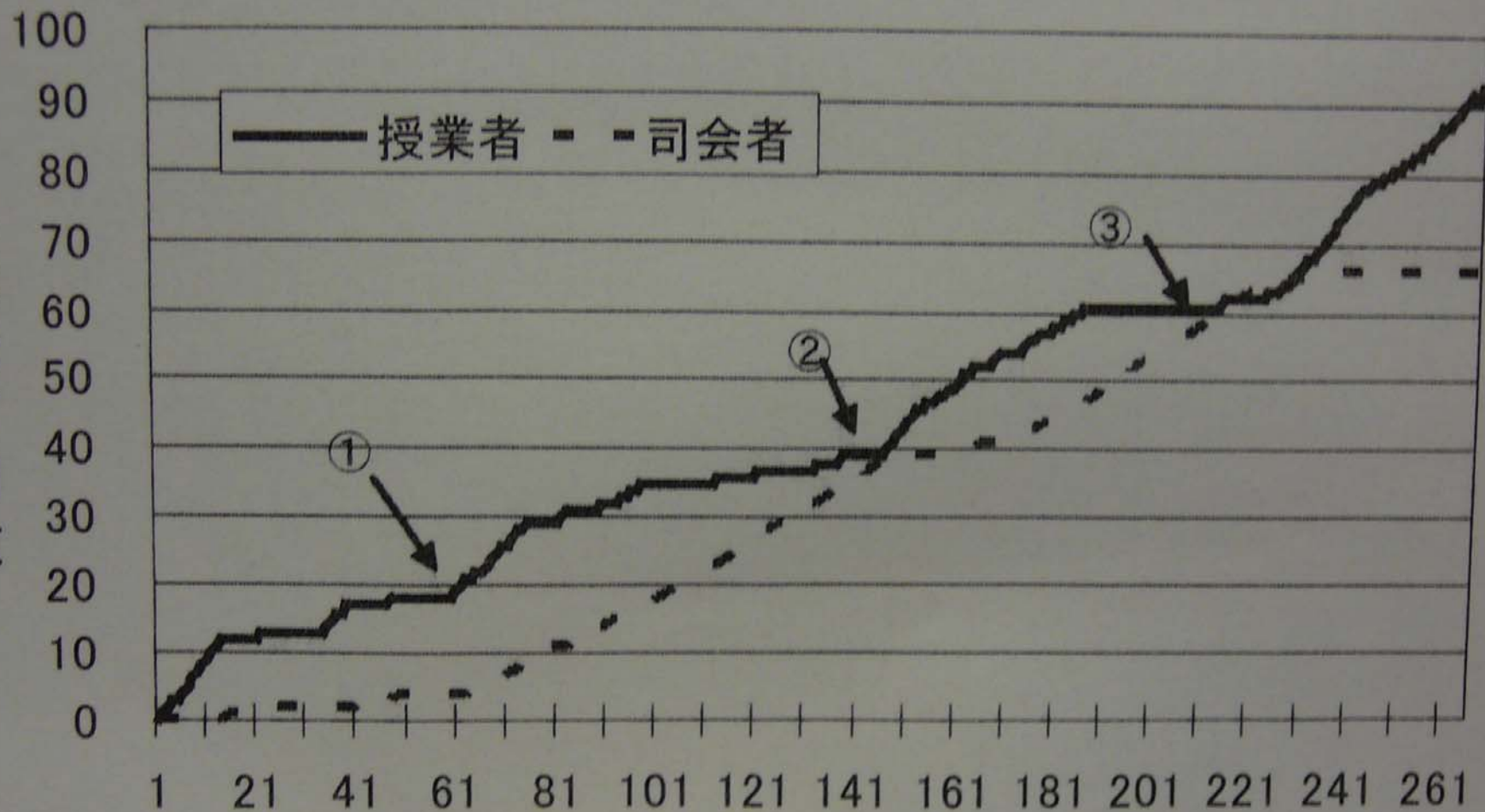
Judgment of the Effect Based on Evidence(5)

- Furthermore, the participants came to understand that it is important to create images in order to enhance the ability of mathematical communication, such as “Ogawa: It means that the story can be used to express that the plus sign and the minus sign counteract each other. Chair: I made an interesting discovery through today’s discussion, noticing that there are many factors included within mathematical communication, by reviewing the lesson once more like this.”

Judgment of the Effect Based on Evidence(6)

- However, the teacher feels that it was too much of a stretch, looking at the fact that the students didn't use the words "Gryffindor" nor "Slytherin" when classifying each term. Also, he says, "I thought it was a good idea to use characters that everyone knows in order to help create the image. For example, we use the word 'exchange' when talking about the commutative law of addition, and use the word 'sum up' when having them think about the associative law. It is important to make efforts to examine such words."

累積発言回数



Concluding Remarks

- **Fostering of Leaders to Lead the Learning Organization**
- **Development of Tools to Promote Lesson Study**
- **Collaboration Between the Teachers and the Researchers**

Concluding Remarks(2)

- **Positioning Lesson Analysis within Lesson Study**
- **Discovery of Evidence**
- **Speaking of One's Own Practice in One's Own Words**
- **Function of Lesson Analysis**
- **Formation of the Epistemology to Grasp the Lessons**
- **Seeking Ethics of Educational Practice Study that Deals with Educational Practice**

Positioning Lesson Analysis within Lesson Study

- The characteristic of lesson analysis is that a certain remark can be analyzed **repeatedly**, or **in relation** with other remarks made before or after it, looking at **the detailed record** of lesson research. It becomes possible to focus on remarks and facts that could not be made out clearly or were missed during the lesson.

Positioning Lesson Analysis within Lesson Study(2)

- Through lesson analysis, profound and rich interpretation of how the teacher's remarks are received and how it affects the recipients, or of the children's remarks can be made.

Discovery of Evidence

- Evidence is created out of lesson practices, which “is the most powerful evidence that is currently available, to be applied conscientiously, explicitly, and wisely” (Kato 2007, p.18) in the course of character formation of each child. Lesson analysis has the potential to discover the evidence.

Thank you 謝謝