

米国における日本型授業研究, by Catherine Lewis

授業研究は、教材がわかっていない先生どうでもできる。わかっていない問題に挑戦して、その授業計画を立てる中で学びわかっていく。

ある先生の感想: '授業研究に取り組むまでは、多知能や構成主義について話したけど、個別教材について話したことはなかったわ。授業研究に取り組むようになって初めて教材について話したし、なぜ教えるのか、どう教えるのか、子どもが何を学んだかを話すようになったわ。'

ある先生の感想: '私の子どもを見る目が育ったわ。今は、授業について責任を感じるわ。他の先生と授業研究に取り組むようになって、オープンエンドの問題など、挑戦的な授業を好むようになったわ。子どもがそのような難しい問題に取り組む様子を見ることで、私は自分の授業に自信を持てるようになったわ。'

Lesson Study in North America
Progress and Challenges

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成果物: 図でみる日本の授業研究

Samples of Japanese Lesson Study

Japanese Lesson Study in Mathematics at a Glance
Its impact, diversity and potential for educational improvement

Edited by
Naoki Tanaka and Shiro Watanabe

New ways of calculation
Yasuhiro HOSOMIZU
Grade 3, 9 years old
Attached Elementary School
of University of Tsukuba

授業研究その歴史

Children devise with their own study questions and write them on small chalkboards in the school hallway.

The boards are hung in the classroom to present the proposed ideas.

野学舎の頃の西村

野学舎の頃の西村

野学舎の頃の西村

よい授業とその指導案

Keiko Tachibana

Specific goal: Inquire the structure of cubes and the line of learning through an open-ended question.

Study topic: Lesson on solid figures learned by representing different projected diagrams.

1. Unit Goal

2. Lesson Goal

3. Teaching Materials

4. Student Outcome (expected)

5. Current two Class Lesson: "Projected Diagram of a Cylinder"

6. Student Outcome (expected)

7. Lesson Plan (two consecutive lessons)

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VTRを利用して何が学べるか？

"New ways of calculation":
A 3rd grade mathematics lesson, by the teacher Yasuhiro Hosomizu
Attached Elementary School - University of Tsukuba
Commented by Abraham Arcavi

The topic of this third grade lesson is around the calculation of a series of multiplications of two numbers between 30 and 40, in which these two digits add up to 10 (e.g. 25x25, 24x26, 23x27 etc). On the basis of such calculations, the goal of the lesson is to engage students in noticing patterns, finding an easier algorithm and explaining why it works. The new rule the students are supposed to find is the result of such multiplications will be 600 plus the result of the multiplication of the two unit digits (e.g. 24x26=600+24=624). The rule can be easily demonstrated and justified as follows:
 $(20 + a)(20 + (10 - a)) = 600 + a(10 - a)$. Obviously, third grade students lack these tools. Therefore, in order to produce and understand an explanation, they will have to resort to numerical methods. The teacher, in his subsequent debriefing with colleagues (as part of the open forum of the lesson study), says that he is aware that third graders also lack the tools fourth graders have, such as the area model (see figure 1, below, in which the square represents 25x25, the two large rectangles together represent 25x10 and the smaller rectangle represents the product of the units).

Figure 1

1. On the basis of an 11 minute video (part of the lesson) edited by the CRICED at the University of Tsukuba

What are the characteristics of the classroom management of this teacher?

Much has been said about the potential benefits of classroom discussions of mathematical ideas, however such discussions may present several dilemmas for the teacher. For example, the goal of the discussion is that students present their own ideas, and the class follows them up in order to understand others' ideas, to check their correctness, to present alternatives and to collectively produce knowledge. However, if the brightest students present advanced ideas very early, most of the other students may not be able to engage in a conversation with them. The teacher's concern is to be as inclusive as possible, and that may require special ways of handling the discussion by giving the right to speak to different students, by slowing the pace, by raising ideas, by separating clarifications from students about others' ideas, and by avoiding early value judgments about correctness. Managing such discussions requires skill and experience.

Is there more mathematics at stake in this problem, of which the teacher should be aware of?

There is no evidence that the teacher expected student mathematical outcomes. For example, that the result of a multiplication of two numbers which add up to 50, is 625 means the square of the distance of the factors from 25. It is not difficult to expect that third graders will notice that. Nevertheless, what about considering mathematical implications and conditions of the mathematics underlying the task, even if these are very unlikely to emerge in the class?

What may be the learning outcomes and the follow-up for such a lesson?

From the video, it is difficult to know what students learned. It would be interesting to analyze the different kinds of follow up teachers may plan for such a lesson, including the possibility of not following it up directly and immediately.

みなさんとの共同！

派遣現職教員ならではのこと！

■ 授業研究の普及

■ 研修会の実施

授業研究でよいモデルを作る

日本の教育経験

授業研究グループ: 魅力は？

現地の指導主事

経験のある先生 JOCV

現地の先生

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Teachers