Lost in translation:
Introducing Collaborative Lesson Research

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Welcome to Bowland Maths

Imaginative resources for rich problem solving in secondary school Maths

Classroom projects – the Case Studies

At the core of Bowland Maths are 26 extended mathematical investigations called Case Studies. Each case study includes teaching materials to support 3-5 maths lessons. Many, but not all, include ICT activities.

Assessment tasks

Bowland Maths includes a collection of over thirty 20-60 minute tasks with progression guides to support formative assessment of progress in mathematical reasoning and problem-solving skills.

Professional development

The Bowland materials demand different approaches to teaching, such as collaborative learning through discussion and reflection, self- and peer-assessment and the use of less structured tasks. These 7 video-based professional development modules help teachers explore these techniques.
Acknowledgements:
Nuffield Project: Lessons for Mathematical Problem Solving
Malcolm Swan and colleagues
lemaps.org
Lost in translation

**Director** (in Japanese, to the interpreter): The translation is very important, O.K.? The translation

**Interpreter** (in Japanese, to the director): "Yes, of course. I understand."
Lost in translation

**Director (in Japanese, to Bob):** "Mr. Bob. You are sitting quietly in your study. And then there is a bottle of Suntory whisky on top of the table. You understand, right? With wholehearted feeling, slowly, look at the camera, tenderly, and as if you are meeting old friends, say the words. As if you are Bogie in Casablanca, saying, "Here's looking at you, kid,"—Suntory time!"

**Interpreter (in English, to Bob):** "He wants you to turn, look in camera. O.K.?"
Lost in translation

Bob: "...Is that all he said?"

In addition to the meaning and detail lost in the translation of the director's words, the two central characters in the film—Bob and Charlotte—are also lost in other ways. On a basic level, they are lost in the alien Japanese culture. But in addition, they are lost in their own lives and relationships, a feeling, amplified by their displaced location.......

Why lesson study?
Why lesson study?
PISA 2015 Mathematics – Key findings relating to England

- Young people in England score, on average, 493 on the PISA 2015 mathematics test. In Japan they score 532.
- The average mathematics score in England has remained stable over the last decade since 2006.
- A total of 10 countries score at least 20 points higher in mathematics than England, seven of which are East Asian and include Japan.
PISA 2015 Mathematics – Key findings relating to England

- England has a similar proportion of high-achieving pupils in mathematics (11 per cent) to the average across members of the OECD (11 per cent).
- The gap between the highest and lowest achieving pupils in mathematics in England is 245 test points, which is equivalent to around eight years of schooling. This is bigger than in most other countries (OECD average is 232).
- The gender gap in mathematics is also pronounced, with boys achieving an average 12 points higher than girls. This is in contrast to the results for reading, in which girls do better, and science where girls and boys are equal.
Why lesson study?

Lesson study

Jugyou kenkyu

Collaborative Lesson Research
Why lesson study?

High quality lesson study has at its focus learning about professional practice (PD) ....

....and it meets all the criteria for effective professional development/learning.
Effective PD is:

- **Experiential:** stimulating & drawing on teachers’ experiences.
- **Sustained:** cycles of planning, predicting, enactment & reflection.
- **Grounded:** practical, well-resourced; related to context & culture.
- **Safe:** teachers able to speak their minds, permission to take risks.
- **Collaborative:** involving networks of teachers & administrators.
- **Informed:** by outside expertise and research.
- **Provocative:** involving both pressure and support.
- **Focused:** attentive to the development of the mathematics itself.

*(Guskey, 2002; Joubert and Sutherland, 2009; Villegas-Reimers, 2003; and many others...)*
Lesson Study in the UK - what is high quality lesson study?
Contextual background

Long-established structures of governance. Schools, and other aspects of education, controlled by regional structures of education boards/local authorities with teachers employed at a district level rather than by a school.

Assessment results very important to students but it is their responsibility rather than the teacher's responsibility

Career progression focusses on and rewards expertise in teaching. The expert teacher is revered.
Contextual background

Professional development focuses mainly around "lesson study". Teacher groups both in and out of school organise this to improve teaching with each lesson having a focus of teacher inquiry.

Little in the way of formal structures to support teacher groups – informal teacher groups tend to focus around expert teachers / gurus or university research groups.

There are national and regional professional organisations that support teacher professional development via lesson study.
Universities are central to initial teacher education.

Research groups can be important as the focus for newly qualified teachers in supporting their early career development.

University lecturers act as external experts to schools in developing staff through lesson study.
Japanese Lesson Study
Collaborative Lesson Research

Have an overarching research theme

- Identify research focus
- Plan research lesson
- Teach research lesson
- Analyse research lesson
- Review and revise

Revise and review
Japanese Lesson Study
Collaborative Lesson Research

- Identify research focus
- Plan research lesson
- Teach research lesson
- Analyse research lesson
- Review and revise
Japanese Lesson Study
Collaborative Lesson Research Research

When the research question has been decided as a small team:
Find a suitable task for the lesson.

Kyozaikenkyu

Workshop 1
Observe and consider teaching and learning towards the research question.
Does the planned lesson work?

Prof. Keichii Nishimura: Deep teaching an introduction to Japanese mathematics pedagogy
Japanese Lesson Study
Collaborative Lesson Research

Identify research focus
Plan research lesson
Teach research lesson
Analyse research lesson
Review and revise

Post-lesson discussion
Someone chairs the discussion and makes sure that the focus is the research question and “does the planned lesson work?”

koshi
Outside “expert” contributes and summarises, adds their own thoughts about the research issue and ….
Japanese Lesson Study
Collaborative Lesson Research

- Identify research focus
- Plan research lesson
- Teach research lesson
- Analyse research lesson
- Review and revise

Group considers how they might progress.

...and with contribution of outside expert how the group might progress......

koshi
High quality lesson study occurs when the teacher sees themselves as a learner.
Key aspects of high quality lesson study

Teaching as learning

Collaborative across schools

Involves “outside” expertise/knowledge
Why Lesson Study?
Thank you

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www.lemaps.org
www.collaborative-lesson-research.uk