Reflection IMPULS Lesson Study Immersion Program 2019

Henk Logtenberg – The Netherlands

Introduction

I participated in the IMPULS Lesson Study Immersion Program 2019 in Tokyo, Japan from 18-28 June. This study trip was a beautiful journey to the birthplace of Lesson Study. I thoroughly enjoyed the program’s content, the cultural immersion and the personal exchanges with the staff, participants and the Japanese teachers. In this reflection, I will however focus on the program’s content and the professional aspect. My professional development goals for this study trip were:

1. getting more ideas/tools to support teams and help them to get a deeper understanding of the problem solving aspects of mathematics;
2. getting more practical tools about the roles of the facilitator and knowledgeable other in a Lesson Study cycle.
3. getting more practical information/tools to create a design for the Teacher Training Education department of the Marnix Academy to use Lesson Study as a vehicle in the pre-service training program in cooperation with our 350 partner schools.

Preparation

Before the study trip, I shared my ideas about Lesson Study and the goals of this study trip with my colleagues at the University and the partner schools via the website of the Marnix Academy1. In the article, I described Collaborative Lesson Research in the context of Lesson Study; Marnix Academy and Lesson Study; my preparations for the study trip to Japan and the goals of the trip. I also organised an afternoon seminar on Lesson Study. The seminar, which was attended by colleagues and students of my University as well as ten teachers from five schools, focussed on one partner school’s concrete experiences Lesson Study as a professional learning community.

Immersion program

Together with 33 American colleagues, one British teacher and the organisers of the Immersion program we visited/participated in:

a. Elementary/secondary schools/classes in the prefecture of Tokyo and the prefecture of Yamanashi;

1 https://www.marnixonderwijscentrum.nl/nieuws/ArticleId/66/vrijdagmatinee-lesson-study
https://www.marnixonderwijscentrum.nl/nieuws/ArticleId/70/studiereis-lesson-study-japan-2019
https://www.marnixonderwijscentrum.nl/nieuws/ArticleId/77/op-expeditie
b. Post-lesson discussions at school-, district and prefecture level.

**Understanding problem solving**

A Japanese mathematics lessons has four elements (Fujii, 2017): *Hatsumon* (opening with a key-question); *Kikan-jiunchi* (walking between the desks and making notes); *Neriage* (classroom conversations led by the teacher), including *Bansho* (boardwork) and *Matome* (summary). All these aspects are used to stimulate the Teaching Through Problem Solving process. During the classroom visits, I observed in each lesson parts of the aspects that are used to stimulate the process of Teaching Through Problem Solving. I found it remarkable that not all the elements were used in every Japanese Math Lesson. However, in most lessons I identified one or two aspects, which were excellently implemented. It was impressive to see how much effort the teachers put to their board work (Bansho). With the help of the board work (colourful, with paperwork) they used students’ input to demonstrate the progression in the understanding of a concept.

Another point that I will use to support teams in the Netherlands is the use of the context to get into the heart of the concept. In Yamanashi, a teacher (Year 3) used the context of tennis balls in a tube of 4 balls to find a solution for the task 23 : 4. The question that the students needed to answer was: ‘how many tubes does the teacher need to bring the balls in tubes of four to another place in the classroom?’ Approximately half of the students thought the answer was five tubes; the other half thought the teacher would need six tubes. During the *Kikan-jiunchi* and *Neriage* the students demonstrated their solutions and explanations.

In the post-lesson session, the Knowledgeable Other (KO) asked if the preparation teams had used the right context. He gave an example of the same task, where they were using 23 persons and boats. Every boat could bring four persons – at the same time – to the other side of the river. How many boats do we need? The KO explained that this context provokes students to think about problem solving instead of drowning in calculations.
The Lesson Study cycle

The IMPULS Lesson Study Immersion Program gave me the opportunity to experience first-hand the tremendous amount of work Japanese teachers put into the execution of a Lesson Study cycle: from preparation, to logistics and the post-lesson session (e.g. storing away the chairs). Power to the teachers!

I found it very useful that we had a short meeting (pre-lesson session) about the goals, concepts and position of the item in the curriculum of the research lesson before we observed a lesson. It provided my colleagues and me with an update on the ‘state of play’ and it prepared/inspired us, the observers, to observe the lesson and to participate in the post-lesson session.

Another valuable learning point for me was the structure of the post-lesson sessions. I learned that:

a. it is important to make a short list – in cooperation with the participants - of subjects you want to discuss during the post-lesson session;

b. important items to discuss during a post-lesson sessions are: tasks; the data (results) of the students to the task; how the task worked out; the anticipations of the students’ results vs. the information they received, and the outcome: what does it mean for the next step; has the task has made a change in the thinking of the students?

For me, the Immersion program 2019 confirmed that the Collaborative Lesson Research Cycle (Takahashi & McDougal, 2016) is an effective cycle to make Lesson Study concrete in schools. For the Marnix Academy I developed the Marnix Academy Lesson Study (MALS) cycle, where the educational values (Fujii, 2017) of the Marnix Academy are integrated (Fig. 1).

Figure 1: Marnix Academy Lesson Study Cycle
The design for the Lesson Study Training Program for the Initial Teacher Training at the Marnix Academy

At the Gakugei University, the students are three weeks involved in a year/period in a Lesson Study Cycle during the pre-service training programmes. It is short, but a very intensive time that the students are collaborating with their peers, teacher-coaches and University professors in a Lesson Study trajectory. During a walk, Prof. Fuji shared with me that the question of the school must be the starting point for the Lesson Study Cycle at the school. A point that is one of our bases at the Marnix Academy to bridge the gap between theory and practice. Next academic year (2019 – 2020), we will start with a pilot Lesson Study (Together on Expedition, TOE) at the Initial Teacher Training in cooperation with some of our partner schools. The subject will be: science and mathematics. Every subject has a KO from the University, a coach from a partner school and five students. Science will start with a Lesson Study Pilot where the students get their University lessons and research lessons at the partner school.

For the framework of the TOE program, we are using the three level model of Sugiyama (2008):

- Level 1: Teachers tell students important basic ideas of mathematics, such as facts, concepts, procedures and practices;
- Level 2: Teachers explain the meanings and reasons of the important basis content and practices of mathematics in order for students to understand them;
- Level 3: Teachers provide students opportunities to understand these basic mathematical content and practices, and support their learning so that the students become independent learners.

The Lesson Study pilots at the partner schools will focus on level 2 and 3: designing lesson plans; examining the effectiveness of the plan using mock-up lessons; learning basics for Lesson Study during student teaching.

For the practical part of the program we will study the Theory and Practice of Lesson Study in Mathematics (Huang, Takahashi, Da Ponte; 2019 –especially Part IV).

**Conclusion**

I have reached many of my goals and got a lot of input to concretize my plans with Lesson Study. Teaching through problem solving showed me that it is very important to choose the right context for the understanding of a concept. The post-lesson sessions taught me the essence of an easy structure and clear questions during the post-lesson sessions to get into a deeper level of the concepts of a lesson. Through the masterclasses, conversations and the literature I got a lot of concrete tools and ideas to strengthen the outlines for the Lesson Study Training Program at the Marnix Academy.

**Next Steps**

Upon my return Japan, I wrote a short blog entitled ‘Power to the Teachers. In this blog, I shared my first impressions of the Immersion 2019 Program with colleagues of the University and the partner schools.² I also wrote a longer article for a Dutch Mathematics Magazine: ‘Lesson Study in Japan’, about the math lesson at the elementary school in Yamanashi.

² [https://www.marnixonderwijscentrum.nl/nieuws/ArticleId/79/power-to-the-teachers](https://www.marnixonderwijscentrum.nl/nieuws/ArticleId/79/power-to-the-teachers)
As a next step, the Marnix University will organise a Matinee-Cafe Lesson Study for all the teachers in Utrecht in cooperation with Educational Institutions of Utrecht (e.g. the University of Utrecht, several elementary schools boards, etc.). In a hands-on workshop we aim to show participants how important it is to use the data of the students (notebook, conversations, reactions, etc.) to get an impression of students’ understanding of the concept. The second part of the workshop will focus on the structure of a post-lesson session. We expect approximately 75 persons.

**Closuring remarks**

I am very glad that I had the opportunity to join the Immersion 2019 adventure in Japan. I thank all staff members and my new International Lesson Study colleagues for this wonderful experience! I recommend this program to all mathematics teachers interested in learning more about Lesson Study.

---

3 [https://www.marnixonderwijscentrum.nl/nieuws/ArticleId/81/matinee-caf-samen-leren-met-lesson-study](https://www.marnixonderwijscentrum.nl/nieuws/ArticleId/81/matinee-caf-samen-leren-met-lesson-study)