

# Implementing a Lesson Study Model in Chinese Universities

Yi Zeng

Center for Psychological Research and Counseling, Southwest Jiaotong University, Chengdu, China  
Email: 444056054@qq.com

**How to cite this paper:** Zeng, Y. (2023). Implementing a Lesson Study Model in Chinese Universities. *Psychology*, 14, 350-358. <https://doi.org/10.4236/psych.2023.143020>

**Received:** February 13, 2023

**Accepted:** March 10, 2023

**Published:** March 13, 2023

Copyright © 2023 by author(s) and Scientific Research Publishing Inc. This work is licensed under the Creative Commons Attribution International License (CC BY 4.0). <http://creativecommons.org/licenses/by/4.0/>



Open Access

---

## Abstract

**Background:** This paper introduces lesson study and its development, detailing the existing lesson study system in Chinese universities and some of its problems. **Design:** Based on the real situation in universities and lesson study theory, a theoretical framework for lesson study is proposed to strengthen the current system. **Methods:** The framework comprises four stages: pre-class, in-class, after-class, and feedback. Given the diversity of university courses and the relationships between research work, teaching work, and other university work, a simple lesson study group system that includes an administrative group, several academic groups, and a sub-group for each course is introduced here. **Results:** Students' grades and academic interests have improved significantly. **Conclusion:** Lesson study in universities improves students' learning, teachers' learning and teaching, and research work.

## Keywords

Lesson Study, Theoretical Framework, University

---

## 1. Introduction

Lesson study is a teaching improvement process that has its origins in Japanese elementary education, where it is a widespread professional development practice. Working in small groups, teachers collaborate to discuss learning goals, plan actual classroom lessons (called “research lessons”), observe how these lessons work in practice, and then revise and report on the results so that other teachers can benefit ([http://en.wikipedia.org/wiki/Lesson\\_study](http://en.wikipedia.org/wiki/Lesson_study)). Lesson study gained worldwide attention in 1999 when researchers working on the Third International Math and Science Study brought ethnographic accounts of lesson study to a broad public audience. Lesson study came to be viewed as a way of building a professional knowledge base for teaching and improving teaching and

learning (Stigler & Hiebert, 1999; Yoshida, 1999; Lewis, 2009). Developing innovations in teaching and learning by focusing on the process of developing and sharing good practices was more important than importing good practices from other places (Inprasitha, Isoda, Wang-Iverson, & Yeap, 2015; Boonsena et al., 2019). In this paper, a theoretical framework for university-level lesson study is proposed based on the real situation in universities and the theory of lesson study. First, lesson study is introduced, and the existing system of lesson study in Chinese universities and its problems are described. A detailed framework for lesson study in universities is introduced and explained, and a case of lesson study in a Chinese engineering university is presented.

## 2. Lesson Study

Lesson study is a practice that encourages teachers to collaborate in setting goals and designing lesson plans, and improving student learning outcomes through observing, reflecting, and sharing. Through cooperative lesson study, teachers can understand a lesson in more depth, and can thus improve and stimulate student learning. The common feature of lesson study is the observation of live classroom lessons by a group of teachers who collect and collaboratively analyze data on teaching and learning (Lewis, 2002a, 2002b; Lewis & Tsuchida, 1997, 1998; Wang-Iverson & Yoshida, 2005; Lewis, 2009). When lesson study is conducted on a school-wide basis, improvement is continuous and occurs in more than one classroom. All teachers in the school benefit from building on each other's knowledge and ideas. The process of learning through inquiry and discussion about classroom teaching also helps teachers to build their sense of professional authority (Linn, Lewis, Tsuchida, & Songer, 2000). According to Stepanek et al. (2006), the process of lesson study includes setting goals (both short and long-term); planning the lesson collaboratively; teaching, observing, and debriefing; revising and re-teaching (after discussion and modification of the lesson); and reflecting and sharing results.

## 3. Existing Lesson Study System and Problems in Universities in China

Basic lesson study systems are in place in some Chinese universities. For example, course-based group teams are formed to discuss the objectives of the course, the major knowledge points, the syllabus design, and the fulfillment of syllabus targets. Lesson plans are shared among teachers and a consensus on approach is achieved. There is also some peer observation of teaching, and a peer observation report table is generated. This report includes areas such as how the teacher speaks, the content that is taught, and any suggestions that the observer may have. Questionnaires are also distributed among students to ask them what knowledge they have obtained from the lesson and how they rate the teacher's teaching. The main focus of the teacher's teaching, peer observation, and student questionnaire is to improve the teacher's pedagogical methods. There is then a

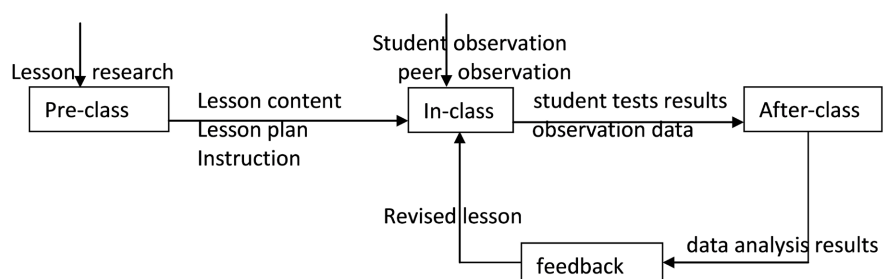
debriefing and reporting session. During this process, the teacher listens to the observer's report and tries to understand his or her faults and how the teaching methods used could be improved next time.

After modifying the lesson under the guidance of the observer (usually an older teacher or leader), the teacher re-teaches the lesson in the next class. There are then meetings among teachers to discuss successes and failures and to share experiences. Throughout this process, the focus is on how to improve teaching methods, the kind of knowledge that is being taught and that should be taught, methods for teaching actively, lesson organization, and how to ensure that the lesson runs smoothly. However, some important points are ignored, such as how students can be encouraged to achieve and to learn more effectively, and how collaboration among teachers can drive collective improvement beyond simply identifying current drawbacks. There is also a need for a more compact and systematic operation. This requires a change in emphasis from teachers as individuals to the lesson including its content, the instruction, and the students, with the most important element being cooperation in both teaching and learning. This will require spending more time and effort on lesson research. The next section covers how a lesson that is understood easily and deeply by students can be created, and how teachers can be encouraged to work and engage with each other.

#### 4. A Theoretical Framework for Lesson Study in Universities

Based on the real situation and guided by lesson study theory, a theoretical framework is proposed for collaborative teaching in universities. Universities are venues for research, teaching, and other work, which sets them apart from middle or high schools. This means that lesson study in a university has distinct characteristics. **Figure 1** presents the proposed framework for lesson study in universities.

The lesson study process comprises four stages: pre-class, in-class, after-class, and feedback. In the pre-class stage, a research group is formed with professional and administrative support. The group includes as many teachers as possible who are associated with the particular academic field. The group members should be involved in research projects that support the lesson research. This means that members of the group must have undertaken professional research



**Figure 1.** Theoretical framework of lesson study in the university.

work or related projects that support the lesson research and lesson development. Professional development or outcomes such as the publication of research papers or the production of reports are required. This will encourage group members to improve their professional development and deepen or broaden their knowledge. Once the group has been formed, a detailed, clear, and mandated procedure for its operation should be devised. During this stage, the lesson content, lesson plan, and instruction are designed according to the course syllabus and goals, including both short-term and long-term goals. Some suggestions are made about lesson plans and instruction. Additional probes may be designed, such as questions based on the lesson content, to provide feedback information for teachers and observers. Based on this feedback, teachers can modify their teaching methods, expression, and techniques to improve student understanding, and observers can obtain more information about the lesson content, lesson plan, and instruction to determine the rationality and validity of their work and to understand the students and teacher better. In designing the lesson plan and the lesson process, both the big picture and the detail must be borne in mind, and the flexibility of the lesson is paramount. Every objective, criterion, and standard must be set clearly and precisely to achieve reliable and valid data to understand the outcomes of the lesson.

In the in-class stage, the teacher teaches the class according to the lesson plan and lesson process, and observations are made from various perspectives. Peer observations focus on the lesson plan and instruction, and the students' responses. Student observations focus on what students learned from the lesson and whether they have mastered the main points of the lesson. Observation questionnaires may be used to solicit feedback. For peer observers, the questions may address how the whole class is progressing, whether the lesson content is being transmitted clearly through the lesson plan and instruction, whether the lesson process and probes are rational, whether the students' responses are active or passive, and whether students are interested or bored in what is being taught. For the student observers, the questions may address what they have learned from the lesson, how well they have understood what was being taught, whether the questions asked helped them to deepen their understanding, and how the instruction and lesson process helps them to understand the lesson content. In the class, small individual tests or written questions can be set to determine student understanding of the lesson. The teacher should be encouraged to respond actively and flexibly to students and to focus on the outcomes of the lesson study. Both the teacher and the observer can also be thought of as learners, and they may obtain novel or special practical teaching and learning outcomes. This is certainly a part of the lesson study.

In the after-class stage, the lesson research group or team collects the data from the class observations and analyzes it. In the analysis, it is best to focus on the majority of students. Special arrangements may be required to analyze the outcomes for minority students, but that is beyond the scope of this paper.

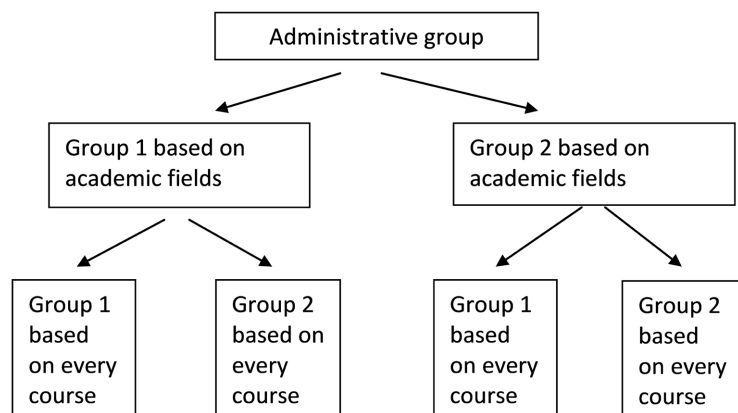
Analysis and assessment after class are very important, as they determine how the lesson will subsequently develop. From the students' test results or written answers it is possible to find out whether the students have mastered the lesson content. This reflects the understanding of the class as a whole. By comparing this outcome with the comments of the student observers, a detailed picture of the students' understanding, responses, and attitudes can be obtained.

These data will help teachers to understand the lesson from the students' perspective. The teacher's teaching experience and peer observations reflect how the lesson progressed, and how the students performed from the teacher's perspective. The analysis can be assigned to other teachers in the group. At this stage, the teacher's description or narration of his or her class experience is emphasized, because the teacher is the main actor. The class teacher must thus share his or her experiences and demonstrate any problems to the others and at the same time will learn from the experiences and suggestions of others in the group.

The feedback stage involves a debriefing and some revision of the lesson content, lesson plan, and instruction. Both the lesson data analysis results and the development of the research project, program, or outcomes are taken into consideration to ensure that the development of the lesson is kept on the right track. The most important factor in this stage is not merely to revise the lesson, but to inject more scientific knowledge and methodology into it. The best lesson study considers not only the teaching methods used for a particular lesson, but also teaching and learning across the entire academic course.

Lesson study should not be conducted in isolation: a school-wide group or groups based on academic fields should be encouraged. Here, a simple system for establishing lesson study teams in universities is presented to make lesson study more efficient and to give it a school-wide range. This system is shown in **Figure 2**.

In the system shown here, lesson study is conducted systematically throughout a university school or department. For it to be thoroughly adopted as part of a faculty's culture and to create an atmosphere of collegiality, the sincere and



**Figure 2.** Lesson study group system.

practical participation of the dean and vice-deans is essential, as has been shown in various cases in Japanese schools (Ose & Sato, 2000, 2003; Sato & Sato, 2003; Saito et al., 2008). The school leader or dean is ultimately responsible for ensuring that every student has the opportunity to learn (Sato & Sato, 2003; Saito et al., 2008) and for promoting teachers' development. To deepen and implement lesson study, an efficient administrative level is also needed to arrange the work schedule in such a way as to give teachers and professors sufficient time for their research and for lesson improvement. The administrative group controls the lesson study process. Work arrangements must be clear to ensure that lesson study is efficient and effective. Interaction between different academic fields and different courses should of course be encouraged and can be coordinated by the administrative group.

## 5. A Lesson Study Case

This section presents a case lesson study of a radar principle course at a Chinese university. Before beginning the lesson study, we invited some of the top scholars in the field to hold seminars and workshops to share the latest technology and newest applications of radar knowledge. All of the relevant teachers and students were invited to join these activities. We also collected much practical information during the activities. When we began the lesson study, the relevant teachers and academics involved in projects related to these technologies were invited to the pre-class meeting.

We first discussed the following questions.

- 1) What prerequisites do students need for this course?
- 2) What kind of theory is important for students in this course?
- 3) How can the latest technology and its applications be included in the lesson?
- 4) How can learning abstract theory be made more interesting for students?
- 5) What can students expect to gain from this knowledge in the future?

The teachers discussed these questions and their answers based on the knowledge that they had learned through their projects and information that they had collected previously. They then proposed some rational answers to the questions. For example, they decided that the prerequisite knowledge should be electrical, and a list was made for students' reference. The teachers also listed the major theories that the students needed to master, and discussed using more pictures and practical examples, and videos or films to deliver the course content. To arouse the students' interest, we advised the teachers to take them on trips to factories and research institutes and to set a range of assignments, such as designing a practical electrical system or giving presentations on some applications of radar systems or their interests related to this course. Based on the long-term goals and the syllabus, the teachers began to devise detailed lesson plans. Sporadically, the teachers met to discuss various issues. All relevant teachers were invited to attend the first class. It was hoped that the results of the lesson study

actions would be apprehended from the experience of teaching the lesson. The observers' comments would similarly indicate whether the knowledge was transmitted smoothly and how the students responded to the class. The students' observations allowed the teachers to collect feedback about what the students had learned and how their absorption of such abstract knowledge could be strengthened. For example, when the students were taught about phased array radar and phased array antenna, they became confused and bored. The teachers discussed how to encourage students to engage with this knowledge, and observed students in class many times, but, although it was understood that the knowledge is important, we could not come up with an answer. Finally, we invited an expert who runs army projects and one of his army colleagues to share their experiences in this area with the students. The students then became interested and understood the concepts more easily. This highlights that the broadening and deepening of the course are important both for teachers and students. After the lesson, and based on the analysis of the collected data and the debriefing and reporting of the teachers, we made modifications and revisions. Through this reflective activity, we identified the weaknesses and strengths of the teacher and students and acquired better methods from other teachers, from people involved in the field, and of course from the students.

In this lesson study case, teaching and learning were made easier and more interesting. The teachers felt that they had improved their professional knowledge, broadened their vision, and enhanced their self-belief and confidence. The lesson study also generated more resources for both teachers and students. The whole process progressed well and the desired outcomes were achieved. In the radar course, we aimed to ignite the students' motivation to acquire more knowledge in the field in the future, because it was understood that the knowledge learned in this course relates to a broad spectrum of other academic fields. The feedback from the students was that the class was less boring than before and that they had gained some insight into this world that made other related courses easier.

The following conclusions and implications can be drawn from the lesson study case.

1) Teachers can acquire knowledge beyond their subject through lesson study. After communicating with professionals, the teachers in this case developed their knowledge of the application of radar technology. The teachers were then happier with the content and felt more responsible for the course. For example, some of the new teachers had been afraid to teach the course because it was so abstract and hard to explain if it is taught in isolation from other fields. However, after the lesson study, these teachers felt more confident and had learned new methods to make the course more exciting.

2) The content of the course was broadened and deepened. Rather than simply emphasizing abstract theory, we collected interesting practical information on the subject. This gave students an understanding of the importance of the course

and showed them its practical applications in society, which deepened their understanding. For example, we related radar theory to global positioning systems (GPS) and current electrical ID card technology.

3) The teachers learned to collaborate better. For example, they shared their experiences and asked each other questions. The leaders and professors also become more accessible to the teachers. The students felt closer to the teachers, and their voice was accepted as making an important contribution to the course. The aims of the course shifted to helping students to understand, promoting their motivation to study, and helping them to apply this knowledge in the future. The students in turn felt that the teachers had changed, and had become more friendly and knowledgeable.

4) All of those involved in the lesson study felt more involved and engaged in the course, which will ensure that it develops and remains on the right track.

## 6. Conclusion

In summary, based on the real situation in universities and the theory of lesson study, a theoretical framework for lesson study in universities is proposed. The framework comprises four stages: pre-class, in-class, after-class, and feedback. Each stage has clear inputs and outputs. As these need to be easily detectable, clear and visible criteria or assessment standards are set at each stage. Lesson study is implemented systematically and collaboratively. Given the situation in most universities, meetings should only be held at the pre-class and feedback stages. As systematic lesson study requires efficient and effective coordination, modern communication and information tools such as email, online forums, and portfolios should be used. Lesson study in universities improves students' learning, teachers' learning and teaching, and research work.

## Project Source

Research on Innovative Mechanism of Psychological Construction in Colleges and Universities in the New Era, 20220328.

## Conflicts of Interest

The author declares no conflicts of interest regarding the publication of this paper.

## References

- Boonsena, N., Inprasitha, M., Changsri, N., & Matney, G. (2019). Teachers Learning about Teaching Practice in a Modify Lesson Study. *Psychology, 10*, 977-988. <https://doi.org/10.4236/psych.2019.107064>
- Inprasitha, M., Isoda, M., Wang-Iverson, P., & Yeap, B. (2015). *Lesson Study: Challenges in Mathematics Education*. World Scientific.
- Lewis, C. (2002a). Does Lesson Study Have a Future in the United States? *Nagoya Journal of Education and Human Development, 1*, 1-23.
- Lewis, C. (2002b). *Lesson Study: A Handbook of Teacher-Led Instructional Change*. Research for Better Schools.



- Lewis, C. (2009). What Is the Nature of Knowledge Development in Lesson Study? *Educational Action Research, 17*, 95-110. <https://doi.org/10.1080/09650790802667477>
- Lewis, C., & Tsuchida, I. (1997). Planned Educational Change in Japan: The Case of Elementary Science Instruction. *Journal of Educational Policy, 12*, 313-331. <https://doi.org/10.1080/0268093970120502>
- Lewis, C., & Tsuchida, I. (1998). A Lesson Is Like a Swiftly Flowing River: Research Lessons and the Improvement of Japanese Education. *American Educator, 22*, 14-17, 50-52.
- Linn, M. C., Lewis, C., Tsuchida, I., & Songer, N. B. (2000). Beyond Fourth-Grade Science: Why do US and Japanese Students Diverge? *Educational Researcher, 29*, 4-14. <https://doi.org/10.3102/0013189X029003004>
- Ose, T., & Sato, M. (2000). *Gakko wo tsukuru*. Shogakkan.
- Ose, T., & Sato, M. (2003). *Gakko wo kaeru*. Shogakkan.
- Saito, E., Hawe, P., Hadiprawiroc, S., & Sukirman, E. (2008). Initiating Education Reform through Lesson Study at a University in Indonesia. *Educational Action Research, 16*, 391-406. <https://doi.org/10.1080/09650790802260372>
- Sato, M., & Sato, M. (2003). *Kouritsu cyugakkou no chousen*. Gyousei.
- Stepanek, J., Appel, G., Leong, M., Mangan, M. T., & Mitchell, M. (2006). *Leading Lesson Study: A Practical Guide for Teachers and Facilitators*. Corwin Press.
- Stigler, J. W., & Hiebert, J. (1999). *The Teaching Gap: Best Ideas from the World's Teachers for Improving Education in the Classroom*. Summit Books.
- Wang-Iverson, P., & M. Yoshida. (2005). *Building of Understanding of Lesson Study*. Research for Better Schools.
- Yoshida, M. (1999). *Lesson Study: A Case Study of a Japanese Approach to Improving Instruction through School-Based Teacher Development*. Ph.D. Dissertation, University of Chicago.