

# The mentoring process and Lesson Study: are they compatible?

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## Abstract

This paper explores the implications of Dewey's laboratory model of learning to teach for the role of the mentor, which has been traditionally associated with an apprenticeship model. Is mentoring at all compatible with a laboratory model in which student and experienced teachers improve their practice collaboratively through experimentation and research at the level of the classroom? Drawing on the work of Lawrence Stenhouse and his idea of the 'teacher as a researcher' the author claims that there is room for a 'knowledgeable other' in the laboratory model, in the form of a curriculum expert who enables teachers to both translate theory into practice, in a manner that is not a matter of straightforward implementation, but tests and reconstructs the theory in the process. In this respect the author looks at Japanese Lesson Study as a form of teacher collaborative research and the role of the 'knowledgeable other' in conducting *Kyouzai kenkyuu* (curriculum analysis) with groups of teachers in relation to their lesson planning. The paper concludes by citing a case study of a theoretically informed Lesson Study in which practice and theory are developed in parallel to each other and locating a role for the mentor as a 'knowledgeable other' in this context.

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### Keywords:

Mentoring  
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## 1 The traditional mentoring process

The traditional mentoring process is shaped by the apprenticeship model of learning to teach, as depicted by John Dewey (Dewey 1904/1974a, Elliott 2012). The novice teacher is inducted into practical classroom experience under the guidance of an experienced mentor. S (he) observes the mentor and then strives to imitate their performance assisted by critical feedback. The process focuses on the teacher and teaching rather than the learners and their learning.

The apprenticeship model has increasingly superseded the rationalist model of learning to teach within the UK. The latter gave priority to the study of the theoretical disciplines of education at a higher education institution with opportunities to 'put theory into practice' by attaching students to local schools for limited periods of time. The rationalist model was increasingly regarded by policy makers in the UK to be an unworkable model of learning to teach, inasmuch as novice teachers are unable to match the abstract theories learned in the academy to the realities of life in classrooms. The late 20th century policy of interweaving increased periods of practice work in schools under a mentor with reduced periods of theory work in HEI's is now widely assumed in the 21st century policy community to be less effective in helping novice teachers to acquire the practical tools of their profession than the apprentice model. Hence the growing influence of entirely school-based teacher training in the form of the "TeachFirst" and "SchoolsDirect" programmes in England and Wales.

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## 2 Dewey's laboratory model of learning to teach

John Dewey developed a third model that links the development of the teacher's theoretical understanding with the development of their practice through their professional experiences as learners in classrooms and beyond.

For Dewey knowledge consists of warranted beliefs about the relations between things. The warrant of beliefs about teaching and learning is tested through experimentation in classrooms conceived as laboratories. Experimentation as the process of learning *how to teach* – knowing how – for Dewey is totally intertwined with relational outcomes; the objects of knowledge. According to Dewey an educational ideal or idea:

*"becomes an aim or end only when it is worked out in terms of concrete conditions available for its realization, that is in terms of 'means' – there must be a most realistic study of actual conditions and of the mode or law of natural events, in order to give the imagined or ideal object definite form or solid substance – to give it, in short, practicality and constitute it a working end."* (John Dewey 1904/1974a)

For Dewey the ends of education cannot be understood independently of learning how to realise them in practice through a process of experimentation. His laboratory model resonates with Lawrence Stenhouse's idea of 'the teacher as researcher.' Stenhouse argued that:

*"–the expression of ideas as curricular specifications exposes them to testing by teachers and hence establishes an equality of discourse between the proposer and those who assess his proposal. The idea is that of an educational science in which each classroom is a laboratory, each teacher a member of the scientific community. –The originator of the proposal maybe a classroom teacher, a policy maker, or an educational research worker. –The proposal is not to be regarded as an unqualified recommendation, but rather as a provisional specification claiming to be no more than worth putting to the test of practice."* (Stenhouse 1975, p. 142)

Stenhouse's view of a curriculum is very consistent with Dewey's laboratory model inasmuch as he casts it as an object of experimentation at the level of the classroom. He writes:

*"A curriculum is an attempt to convey the essential principles and features of an educational proposal in such a form that it is open to critical scrutiny and capable of effective translation into practice."* (Stenhouse 1975, pp. 4–5)

It is also for Stenhouse a kind of research report open to public scrutiny:

*"–the means by which the experience of attempting to put an educational proposal into practice is made publicly available. It involves both content and method, and in its widest application takes account of the problem of implementation in the institutions of the educational system."* (Stenhouse 1975, pp. 4–5)

The aim of the 'laboratory model' for Dewey is to supply the *intellectual method* (inquiry) and *materials* in the form of the provisional findings (professional scholarship). It yields as a resource for learning how to teach by further experimentation in classrooms. Theory and practice grow together out of and into the teachers' professional experience. The object of professional knowledge is always provisional and open to further speculation. The intellectual method for Dewey is an expression of the speculative virtues, attitudes, dispositions and mental operations such as *curiosity, objectivity, honesty, open-mindedness and a commitment to freedom of thought and discussion* (the 'democratic virtues').

## 3 The need for special teacher training institutions to organize practice work around the 'laboratory model'

Why? Dewey argued that the schools alone will find it difficult to create conditions under which novice teachers can acquire and use the *intellectual method* as opposed to acquiring their technical skills while undertaking the actual work of the profession. The scientific foundations of pedagogy should be laid in advance of full immersion into the work culture, in order to give teachers the "power to keep on going" while in service and to continue to view their classroom as a laboratory for conducting educational experiments.

On the laboratory model of learning to teach pedagogical knowledge is socially constructed (Dewey 1938/1974, Prawat 2000). It is the task of scholarly learning communities to agree on what constitutes a fair test of ideas, to receive reports on the results of such tests and decide whether the ideas should be regarded as valid for the time being. Who has the right to participate in such a learning community? I would include 'knowledgeable others', from teacher training institutions with relevant curriculum expertise, professional peers in a diversity of roles and relations in their schools, the students themselves, and even parents/carers.

Models of learning to teach are not mutually exclusive:

- Technical instructional and class management skills can be an outcome of practice work largely shaped through a 'laboratory model.'
- Conversely, the use of the 'apprenticeship model' can serve to enlighten and enrich instruction in subject matter and the theory of education.
- The issue is about which model should be dominant in learning to teach.

#### 4 Lesson Study procedures as an example of the laboratory model of learning to teach

Key features of Lesson Study are:

- Carried out by a group of teachers (2 or more members).
- Focuses on the collaborative development of a lesson defined in terms of a topic rather than a unit of time.
- Proceeds through cycles of planning, teaching, and evidence-based discussion.
- In each cycle a collaboratively planned lesson is taught by a different teacher, while the other teachers collect observational data, which is then discussed in a post lesson conference as a basis for moving into the next cycle of planning a revised lesson, teaching and discussion.
- The teacher group may be facilitated by an expert specialising in the curriculum area concerned.

(See Lewis, Perry & Friedkin 2009, pp. 142–143).

Cajkler & Wood (2016, pp. 84–98) raise issues about giving school-based mentors a leading role in inducting student teachers into Lesson Study within an initial teacher training context, given the fact that the role of the mentor has been traditionally shaped by the apprenticeship model.

*"However, the difficulty of using lesson study in ITE is considerable. This project is one of just a small number that involve mentors in a leading role in lesson study. Few projects have used full cycles of lesson study that rely on collaboration between student-teachers and their mentors (e.g. Cajkler et al. 2013, Tsui & Law 2007). Mentor and student-teacher collaboration involves an asymmetry, in terms of status, power and experience – that could be seen as at odds with the collaborating groups envisaged by advocates of lesson study."* (p. 86)

Cajkler and Wood argue there is a tension between the traditional focus of mentoring on teaching and the tendency for Lesson Study to focus on the learning experiences of students.

*"–three mentors stressed the tensions involved in observing the learning of students in class, rather than the performance of the student-teacher. For one of the three, however, the process seemed to have no effect on his approach to providing feedback. He continued to use a formal, teacher-focused format–"* (p. 89)

*"The mentor's interrogative approach remained at odds with expectations associated with lesson study as a joint pedagogic enterprise, – Analysis of other meeting transcripts revealed that collaboration varied at all stages in the project, with some mentors more directive than others during the planning phase, but less so as the cycle developed."* (p. 89)

For Cajkler and Wood the focus on student learning implies a more symmetrical relationship between mentor and student-teacher:

*"It also raises questions about the value of mentor observation and feedback in the traditional system if it does not include focus on learners' reactions in the classrooms. Despite such uncertainty, mentors reported that observing learners had been revealing, opening up what we subsequently called the pedagogic black box. A*

*modern languages mentor claimed that her perspectives on students were altered as a result of feedback from her student-teacher—*” (Cajkler & Wood 2015, p. 91)

## 5 The role of the mentor in the context of the laboratory model

The laboratory model of learning to teach requires a significant shift of role on the part of the mentor, which might be depicted in the following terms, as:

1. A facilitator of the experimental process of testing curriculum and pedagogical theories in classrooms and schools.
2. A ‘knowledgeable other’ in the relevant field of professional scholarship; an intellectual resource for the teachers to draw on in designing lessons to test ideas.
3. A model of a self-reflexive stance by openly allowing the experimental process to challenge the warrant of their own beliefs in the context of dialogue with the teachers.
4. A mediator between the teachers and the local research community of professional peers.

According to Chichibu (2016, pp. 155–168) the role of the mentor in training beginning teachers in Japan appears to share these characteristics. He writes:

*“–the role of a mentor is not only to help and give advice to initial teachers but also to facilitate communication in the community of teachers or give advice to them. The training of initial teachers in Japan is conducted with the cooperation of mentors and the community.”* (p. 158)

*“–colleagues observe research lessons conducted by initial teachers. –a post-lesson discussion is held by the participating teachers. A mentor also observes the research lesson and participates in the discussion but avoids giving a proactive stance. Remarks from a mentor with higher competency may frustrate the discussion. A mentor states his or her opinions in the form of a commentary at the end of the discussion.”* (p. 157)

In particular the role of the ‘knowledgeable other’ is particularly significant:

*“When initial teachers plan to conduct a research lesson, they receive guidance on their lesson plans from the school’s teacher community. These communities support initial teachers on a regular basis and help them prepare their lesson plans for research lessons. But sometimes the community teachers have trouble understanding the curriculum standard or *kyouzai-kenkyuu*. In those cases, advice from a mentor becomes necessary.”* (Chichibu 2016, p. 161)

According to Chichibu the Japanese curriculum standard follows the law, and is expressed in rather abstract terms. Various commentaries on the curriculum standard therefore are made commercially available to schools, in the form of text books and curriculum materials. Teachers try to understand the standard in the light of such curriculum resources, but often do not gain a thorough understanding. In the context of a Lesson Study it is the role of a mentor to conduct *Kyouzai kenkyuu* with teachers during the first stage of developing a lesson plan aimed at deepening their understanding of the curriculum standard and the textbook/materials used. In these terms the mentor is a ‘knowledgeable other’ with curriculum expertise:

*“Mentors need to guide initial teachers and consider the extent to which initial teachers understand the curriculum standard and the unit goals. They evaluate whether initial teachers understand the unit goals by asking them questions based on their unit plans. After examining the unit plan, mentors examine the lesson plan for the research lesson. Then they examine a research-lesson plan and the method for presenting teaching materials, asking questions, and anticipating student responses are crucial perspectives.”* (Chichibu 2016, p. 161)

There are very strong links between this concept of mentoring in the context of Lesson Study and Stenhouse’s view of the relationship between curriculum expertise and teacher research. For Stenhouse the role of the curriculum expert is to communicate the “essential principles and features” (standards) that underpin an educational proposal for change in a way that opens it up to critical scrutiny by teachers and enables them to realise it in action within their classrooms. The curriculum for Stenhouse is the means by which the experience of trying to translate a proposal for change into practice is made open to public scrutiny. Its principles and values

embrace both content and method and take account of the problems of realising them in the educational system and its institutions.

In the context of Lesson Study as a form of teachers' action research the role of the mentor as a 'knowledgeable other' is to facilitate the disciplined study of the curriculum at the level of the classroom and school by teachers (see Elliott 1985, pp. 259–260). In this process s(he):

- Offers Interpretations of curriculum principles in a form that enables teachers to design *research lessons* in a form that enables them to realize the principles in action and test their effects on the quality of learners experience in classrooms.
- Enables teachers to define the specific problems of implementing curriculum principles in practice.
- Enables teachers to clarify their pedagogical aim(s) by focusing attention on their specific teaching strategies and thereby encouraging them to reflect about ends and means together rather than independently.
- Offers a theoretical framework in which teachers can capture and express their emerging insights to each other.

Stenhouse argued that teachers needed to develop a common vocabulary of concepts and a syntax of theory (1975, p. 157). An important task of the curriculum expert is to help teachers to use such a framework to inform their design of lessons, but to use it experimentally in a way that feeds back into the further development of the framework itself.

The use of 'Variation Theory' (Marton & Booth 1997, Lo & Marton 2012) as a framework for Lesson Study (Lo 2012) in Hong Kong and Sweden covers both curriculum principles for selecting content and pedagogical principles for mediating content to the learner.

## 6 Variation Theory as a conceptual framework for Lesson Study

The major conceptual elements in Variation Theory are as follows:

- Learning as *discernment* or new 'way of seeing' a phenomenon. "–capable of being simultaneously and focally aware of other aspects or more aspects of a phenomenon than was previously the case" (Marton & Booth 1997).
- The *object of learning*: the "what is to be learned". The specific and generic aspects. Acknowledging the external horizon of the object of learning; its location in the educational system, in a system of ideas (a discipline of knowledge), in students belief systems (preconceptions).
- *Critical aspects and features* of the object of learning.
- *Intended, enacted and lived* objects of learning.
- Using patterns of variation to improve and deepen learning. Guiding constructs: *variation, contrast, generalization, separation* and *fusion*.

Lo (2012) depicts how Variation Theory can support curriculum and pedagogical innovation at the level of the classroom by challenging beliefs that underpin established practice:

- "Currently there is too much emphasis on using examples to show similarities. It is held that once students can discern the similarities between examples, they will be able to infer the relevant rules and concepts." (p. 88)
- "Without experiencing difference it is impossible to discern similarities. –teachers must also show non-examples. –when teaching students what a triangle is, the teacher should also show students what a triangle is not by comparing it with, say, a rectangle, a pentagon, other polygons, two parallel lines and a pyramid. By so doing students will discern the critical features of triangles by contrasting triangles with other non-examples." (p. 89)

Ko Po Yuk (2014, pp. 272–289) presented a case study to demonstrate how the development of Variation Theory can be informed and improved through Lesson Study rather than straightforwardly applied to it.

*"The intended object of learning in this case study is 'developing awareness that a text should refer to the title' in the context of a writing lesson for Primary 4 (Grade 4) students. Although there is a strong emphasis on writing in the Chinese language curriculum, researchers pointed out that the writing ability of Hong Kong students ranks the lowest amongst the four language skills (i.e. reading, writing, speaking and listening). One of the common*

problems is that students are not writing to the given title – with many compositions either deviating from the main focus of the topic, or containing large chunks that are irrelevant to the title.” (p. 277)

Patterns of variation built into the activities in the research lesson design for two classes, C & D, were observed by the teachers to differ and discussed in the post-lesson conference:

- “Looking at the pre-test results, the scores of the two classes before the research lesson were similar. However, after the research lesson, class 4C greatly outperformed class 4D.”
- “The post-lesson conference revealed that different patterns of variation were being enacted.”
- “Class 4D was asked to generalize without contrasting, while the 4C was asked to first contrast, then generalize.”
- “The teacher of class 4C (Ms Lee) identified the problem of focusing only on the similarity of the titles (as happened in class 4D) as that could not help students discern the relationship between the title and the text. The whole team agreed with her view and changes were made in subsequent lessons.” (p. 285)

The case study concluded that further investigations were required in order to determine whether class 4D could have learned more had they been presented with contrast after generalization. Ko Po Yuk’s case study may not have been sufficient to support the claim that a contrasting pattern should precede a generalization pattern, but it does not falsify it she argues, since the sole use of the latter sequence in one lesson yields less desirable outcomes. The case study can serve as a first attempt to provide empirical support for such a claim. In doing so it demonstrates how in the context of Lesson Study informed by Variation Theory the mentor may have an important role in leading post-lesson discussions that enable teacher researchers to contribute to the joint development of theory and practice.

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