Does Lesson Study work?

A systematic review on the effects of Lesson Study and Learning Study on teachers and students

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Abstract

Purpose – There has been rapid proliferation of Lesson Studies and Learning Studies over the world. Do they really help teachers’ professional development and student learning? The purpose of this paper is to review studies from 2000 to 2010 on Lesson Study and Learning Study to unravel their benefits on teachers and students.

Design/methodology/approach – Relevant studies were screen and extracted on available electronic databases to evaluate outcome of Lesson Study and Learning Study. The results were based on nine studies which examined the achievement of Learning Study and Lesson Study.

Findings – All reviews identified positive evidence supporting the benefits of Lesson Study and Learning Study as powerful tool to help teachers examine their practices and enhance student learning. Although all nine studies showed positive effects of Lesson Study and Learning Study on teaching, learning or both, different outcome measures were employed and the study designs varied in qualities.

Originality/value – More well-controlled studies with consistent and validated outcome measures were recommended in the future to address the short- and long-term effects of Lesson Study on students, teachers, and school level. Efforts should be focussed on unveiling the relationship between what is taught and what is learned. Studies using these approaches with more vigorous procedures in randomization and blinding should be implemented.

Keywords Review, Teacher professional development, Lesson Study, Learning Study, Student learning

Paper type Research paper

Numerous researchers (Fernandez, 2002; Fernandez and Chokshi, 2002; Lewis and Tsuchida, 1998; Stigler and Hiebert, 1999; Yoshida, 1999) have commented that the use of “Lesson Study” has become prominent among teachers and educators. Improving teaching and student learning has become the focus of teachers’ professional development. Lesson Study emerged in Japan early in the 1900s and drew the attention of the USA in the late 1990s. As defined by Lewis (2000), in Lesson Study, teachers plan, observe and discuss together to produce a research lesson. In Lesson Study, teachers take an active role as researchers to explore and refine lessons for teaching and learning improvement. Learning Study, on the other hand, is an approach for teachers’ professional development which requires teachers to conduct systematic inquiry to improve their practice in the classroom. Learning Study was developed from ideas pertaining to Lesson Study by Ference Marton in the 2000s (Marton and Morris, 2002; Pang and Marton, 2003; Marton and Tsui, 2004). Learning Study is regarded as

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a hybrid between Lesson Study and design experiments so as to facilitate students’ learning as well as teachers’ professional development.

Lesson Study has been extensively used in Japan. Recently there has been a rapid proliferation of Lesson Studies in the USA (Chokshi and Fernandez, 2004). According to the web site of Lesson Study Research Group (2008), there were more than 3,610 teachers in 647 schools, and 105 universities that were involved in Lesson Study in the USA in May 2008. In addition, the Learning Study model has been widely adopted in Hong Kong, Sweden, and other places for the past decade. Marton developed the Learning Study model together with researchers in Hong Kong in early 2000. About 300 Learning Studies have been conducted in Hong Kong (The VITAL project, 2005-2008; Cheung, 2011; Chik, 2006; Lo et al., 2005). Learning Study was introduced in Sweden by a research project in 2003 (Gustavsson, 2008; Holmqvist, 2006; Holmqvist, 2011; Kullberg, 2006; Kullberg and Runesson, 2006; Runesson, 2008). Studies in Mathematics, Swedish, and English were conducted in the Swedish project. Both approaches combined collaboration, reflection, and professional development into a structured experience that allows them to construe new meanings about instructional practices (Fernandez and Chokshi, 2002; Lewis et al., 2006; Stigler and Hiebert, 1999). They were job-embedded learning grounded in data (Zepeda, 2008).

Kullberg (2010) mentioned that Lesson Study inspired the development of Learning Study. These two approaches in fact share many common features. First, both have a collective and iterative process of learning, analyzing and revising lessons. Second, they share a common aim to improve students’ and teachers’ learning. Third, both have a specific learning goal. There are also differences. First of all, Learning Study is theory driven. In addition to Lesson Study, a learning theory is used to analyze and plan a lesson in Learning Study. The latter can therefore be seen as a hybrid between Lesson Study and design experiments (Brown, 1992; Collins, 1992). The theory of variation provides a disciplined approach to realizing this intention. It is the pedagogy that improves the learning. Learning Study focusses on the distinction between an intended object of learning (i.e. what the teachers are striving for), an enacted object of learning (i.e. what happens during the lesson and what it is possible to learn), and the lived object of learning (i.e. what the students learn). Live classroom observation is often supplemented with video recording of the lesson for further analysis. Specific student learning is in the foreground, and pre- and post-tests are used to explore students’ learning and what may be critical for student learning. A second difference is that the main goal of Lesson Study is to improve teaching or enhance the professional development of teachers. By contrast, the foremost goal of Learning Study is to enhance student learning (Kullberg, 2010; Pang and Marton, 2003) and explore what it takes to learn something particular but in a generalizable sense. Participation in Learning Study also enhances teachers’ pedagogical capabilities and professional development (Gustavsson, 2008). Learning Study can further be used as a way for researchers to explore practice and to improve academic learning and the production of knowledge. Teachers explore their teaching to identify what can be critical features for their students’ learning.

Both Lesson Study and Learning Study are used worldwide nowadays in the USA, Sweden, Australia, the UK, Hong Kong, Japan, and Singapore to improve teachers’ teaching and quality of student learning. There has been, however, a lack of systematic review that focusses on its effectiveness in the literature. Our point of departure is to answer the questions: “Does Lesson Study work?,” “How does it work?,” and “Is the effect supported by evidence?” Learning Study, which is developed from Lesson Study, is reviewed together to explore the different implementation, effectiveness
and outcomes with similar fundamental practices. This paper responds to these questions based on a systematic review of relevant studies from 2000 to 2010.

**Method**
A comprehensive literature search was performed for the period from January 2000 to March 2010, on computerized electronic databases (i.e. ProQuest, JSTOR, Springer-Link, Sage journals), using keywords “Lesson Study” or “Learning Study” and “effect” or “result” or “outcome” to identify all peer-reviewed journal papers that tested the effects of Lesson Study or Learning Study. Studies were filtered by visual examination to avoid duplication of articles across different databases. A study was included if: the theme was mainly on identifying the effectiveness of “Lesson Study” or “Learning Study;” it was an empirical study; and the targeted subjects were teachers or students. The study was excluded if it was a review. As this is the first review of various studies of Lesson Study and Learning Study, looking at effectiveness in terms of the impact on teacher and students, it will be of interest to a wide audience.

A total of 74 articles, 21 from ProQuest, 27 from JSTOR, 24 from Springer-Link, and two from Sage Journals, were extracted from the electronic databases. According to the inclusion criteria, 20 articles in full texts were selected for a detailed review. After screening, nine articles were included in the systematic review. The main reason for excluding the 11 articles was that they were either literature reviews or theoretical in nature. Figure 1 summarizes the screening process leading to the nine articles for a detailed systematic review.

**Results**
Table I summarizes the methods and results of the nine studies.

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**Table I**

<table>
<thead>
<tr>
<th>74 publications identified</th>
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<tbody>
<tr>
<td>ProQuest (n=21)</td>
</tr>
<tr>
<td>JSTOR (n=27)</td>
</tr>
<tr>
<td>Springer-Link (n=24)</td>
</tr>
<tr>
<td>Sage Journals (n=2)</td>
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</table>

| 20 full text articles for further evaluation |

| 1st stage screening: 54 publications excluded because they were not studies on learning study or lesson study. |

| 2nd stage screening: 11 publications excluded for these reasons: (i) they were reviews (ii) they only explained or introduced the implementation of learning study and lesson study |

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**Figure 1.** Flowchart of review articles selection process
<table>
<thead>
<tr>
<th>Study</th>
<th>No. of teachers in intervention group/ control group</th>
<th>No. of students in intervention group/ control group</th>
<th>Type of students</th>
<th>Approach</th>
<th>Location</th>
<th>Educated subject</th>
<th>Instruments</th>
<th>Type of study</th>
<th>Duration</th>
<th>Effect on teacher or teaching</th>
<th>Effect on students</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cheung (2011)</td>
<td>4/4</td>
<td>137/140</td>
<td>Grade 3</td>
<td>Learning Study</td>
<td>Hong Kong, China</td>
<td>Creative writing in Chinese language</td>
<td>1. Pre-, mid- and post-test using Chinese creative writing scale and the Williams Scale 2, Lesson observation</td>
<td>Quantitative study and 1 school year lesson analysis using phenomenographic method</td>
<td></td>
<td>The difference in creativity scores shed light on the effects of hierarchical and sequential structuring of teaching content on creativity in Chinese writing. Though they had same learning objectives with same lesson plan.</td>
<td>Creativity scores of the class having a hierarchical structuring of teaching content were significantly higher than that of the class with a sequential structuring although they had same learning objectives with same lesson plan. Pre- and post-test showed significant gain in students’ learning outcomes.</td>
</tr>
<tr>
<td>Lo et al. (2006)</td>
<td>2/na</td>
<td>71/na</td>
<td>Grade 3</td>
<td>Learning Study</td>
<td>Hong Kong, China</td>
<td>General studies</td>
<td>1. Pre-test and post-test concerning students’ understanding on the colour of light, Lesson observation</td>
<td>Qualitative data materials from the tests are converted to quantitative measurement</td>
<td>2 rounds in the same day</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Marble (2007)</td>
<td>24 pre-service teachers/n/a</td>
<td>Students in 3 elementary schools/n/a</td>
<td>Elementary schools (K1-Grade 6)</td>
<td>Lesson Study</td>
<td>USA</td>
<td>Integrated science and mathematics</td>
<td>Narrative data: Lesson observation, delivering protocol, summative portfolio graded by assessment rubric for Lesson Study reflection</td>
<td>Qualitative study</td>
<td>24 lessons</td>
<td>Dramatic improvements in pre-service teachers’ confidence and skills in lesson design and delivery, the management of the learning environment, the quality of students’ engagements with meaningful content, and the strategies of assessments and the generation of student data</td>
<td></td>
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</table>

(continued)
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<thead>
<tr>
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<th>Effect on teacher or teaching</th>
<th>Effect on students</th>
</tr>
</thead>
<tbody>
<tr>
<td>Marton and Pang (2006)</td>
<td>2 in target group/3 in comparison group</td>
<td>77 in target group/92 in comparison group</td>
<td>Grade 10 students</td>
<td>Learning Study</td>
<td>Hong Kong</td>
<td>Economics</td>
<td>1. 2 written questions in pre- and post-test 2. Lesson observation</td>
<td>Qualitative study analyzed the students' answers phenomenographically, captured the qualitative ways of explanations of the scenario – lesson analysis using phenomenographic method</td>
<td>@group 3 lessons = 6 lessons</td>
<td></td>
<td>The dramatic differences in the learning outcomes to the specific differences in how the object of learning is handled in different classes in terms of variation and invariance</td>
</tr>
<tr>
<td>Matoba et al. (2007)</td>
<td>na teachers of the school participated in school-university partnerships (number not mentioned)/na</td>
<td>na (number not mentioned)/na</td>
<td>1st-3rd grade students in a school</td>
<td>Lesson Study</td>
<td>Japan</td>
<td>Integrated studies, Japanese, social studies, science, mathematics and English</td>
<td>1. Academic results 2. No. of students refused to attend school 3. Evaluation on school environment from students 4. Evaluation on schools environment from teachers 5. Reflections from teachers</td>
<td>Case study using qualitative and quantitative study</td>
<td>Analyze in yearly basis (2002-06)</td>
<td>Higher % evaluation on school environment from teachers reported how teachers could learn through engaging in collaborative research on class activities with their colleagues to create professional and practical knowledge</td>
<td>Improvement in T-scores of student academic achievement tests. Decline in no. of students refused to attend school. Higher % of evaluation on school environment from student questionnaires</td>
</tr>
<tr>
<td>Pang and Marton (2003)</td>
<td>5 (Learning Study group)/5 (Lesson Study group)</td>
<td>181 (5 Learning Study group)/175 (5 Lesson Study group)</td>
<td>Secondary schools students from 16-18 years</td>
<td>Lesson Study and Learning Study</td>
<td>Hong Kong</td>
<td>Economics</td>
<td>1. Student written task 2. Interviews on understanding of sales tax incidence 3. Class observation</td>
<td>Quasi-experimental design</td>
<td>3 preparatory meetings, 4 lessons for each class</td>
<td>Classroom observation showed that experiencing simultaneous variation in demand and supply study group elasticity on the same invariant goods helped student understand tax incidence better</td>
<td>70% students in learning study group understand the concept of sales tax compared with 30% in lesson group elasticity on the same invariant goods helped student understand tax incidence better</td>
</tr>
</tbody>
</table>

(continued)
<table>
<thead>
<tr>
<th>Study</th>
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<th>Effect on teacher or teaching</th>
<th>Effect on students</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pang (2009)</td>
<td>6 (Learning study group)/6 (Lesson Study group)</td>
<td>98 (Learning Study group)/95 (Lesson Study group)</td>
<td>Grade 12</td>
<td>Lesson Study and Learning Study</td>
<td>Hong Kong</td>
<td>Economics</td>
<td>1. a pre-test, a post-test, 2 delayed post-tests comprising multiple-choice and short-answer questions 2. 60 students were chosen randomly for interview</td>
<td>Quasi-experimental design</td>
<td>1 year, 16 lessons</td>
<td>na</td>
<td>Students in learning study group significantly outperformed the lesson study group in understanding the conception of financial literacy, and the difference, in terms of their mean scores and effect size, widened over time which supports the notion of generative learning</td>
</tr>
<tr>
<td>Perry and Lewis (2009)</td>
<td>70 teachers and administrators from 1 US school district/ na</td>
<td>na/na</td>
<td>K-8</td>
<td>Lesson study</td>
<td>USA</td>
<td>Mathematics</td>
<td>Narrative, semi-structured interviews, observation notes, audio and video recordings of meetings and research lessons, artifacts of lesson study practice, reported changes to instruction</td>
<td>Case study, Qualitative</td>
<td>2000-2004</td>
<td>Incorporation of feedback from reflection, development of tools. Increased teachers' emphasis on student thinking, significantly built teachers' mathematical and collaborative skills, use of outside knowledge sources</td>
<td>na</td>
</tr>
<tr>
<td>Stewart and Brendefur (2005)</td>
<td>50 teams of teachers/na/na</td>
<td>Schools in 13 districts</td>
<td>Lesson Study</td>
<td>USA</td>
<td>na</td>
<td>Narrative: portfolio, Qualitative artifacts like lesson plan, videotapes and observation of 5 teams. Newmann's authentic achievement rubrics</td>
<td>na</td>
<td>na</td>
<td>Teachers confirmed benefits of lesson study and that lessons improved dramatically</td>
<td>na</td>
<td></td>
</tr>
</tbody>
</table>
Participants

The number of teachers who participated in the studies ranged from two to 70. Two studies (Matoba et al., 2007; Stewart and Brendefur, 2005) did not give the number of teachers who participated. One of these mentioned that the teachers and students were recruited in a junior high school but the number of participants was not reported (Matoba et al., 2007); the other study only mentioned that 50 teams of teachers were involved in the study (Stewart and Brendefur, 2005). The number of students participated ranged from 71 to 356, but four studies did not mention the exact number of student participants (Marble, 2007; Matoba et al., 2007; Perry and Lewis, 2009; Stewart and Brendefur, 2005). Teachers and students came from elementary schools to high schools. All teacher participants were in-service teachers with the exception of the pre-service teachers mentioned in Marble's (2007) study. Five studies did not have a control or comparison group. Among them, two studies (Pang and Marton, 2003; Pang, 2010) divided their participants into the Learning Study group and the Lesson Study group. There was a comparison between these two groups using the Lesson Study group as the comparison group. Only two studies (Cheung, 2011; Marton and Pang, 2006) had a target group and a comparison group. Two studies were quasi-experimental in nature (Pang, 2010; Pang and Marton, 2003), one was a controlled experimental trial (Cheung, 2011), and the remaining studies were quantitative or qualitative. Five studies were conducted in Hong Kong, three in the USA, and one in Japan. Details of the studies are reported in Table I.

Outcome measures

The reviewed studies used various outcome measure methods which included validated scales, written questions, or tests to examine the understanding level of subjects from students, narrative data, academic results, and evaluations. The instrument most frequently used to assess student understanding on the taught subject after Lesson Study or Learning Study was written questions or tests. This outcome measure was used by four studies (Lo et al., 2006; Marton and Pang, 2006; Pang, 2010; Pang and Marton, 2003). Among them, three studies analyzed the written answers qualitatively using phenomenography and converted them to quantitative data (Marton and Pang, 2006; Pang, 2010; Pang and Marton, 2003). The other common measure which was used by three studies (Marble, 2007; Perry and Lewis, 2009; Stewart and Brendefur, 2005) was narrative approach such as teacher portfolios, artifacts of lesson plans, and self-reported instructional practices. Only one study used validated scales such as the Chinese Creative Writing Scale (Cheung et al., 2001) and the Williams Scale (Williams, 1993) to assess students' creative writing, divergent thinking, and feeling related to creativity after using Learning Study (Cheung, 2011). In addition, one other study used teachers' prepared evaluation sheets to assess the number of students that refused to attend school; students' comments on school environment; and teachers' comments on the school environment after the implementation of Lesson Study (Matoba et al., 2007). All studies used lesson observation. Studies using Learning Study clearly stated that they analyzed lessons by the phenomenographic method (Cheung, 2011; Lo et al., 2006; Marton and Pang, 2006; Pang and Marton, 2003). The authors not only analyzed the way with which the object of learning was dealt in different classes in terms of variation and invariance, but also linked up the dramatic differences in learning outcomes to the specific differences in how the object of learning was handled in different classes. However, studies using Lesson Study did not clearly state how the observation data of the lessons were analyzed. Three studies evaluated the effect of Lesson Study or Learning Study on Economics. Other subjects included General Studies, Mathematics, Integrated Science and Mathematics, Chinese,
Interventions

Four studies focused on Lesson Studies (Marble, 2007; Matoba et al., 2007; Perry and Lewis, 2009; Stewart and Brendefur, 2005) and three studies focused on Learning Study (Cheung, 2011; Lo et al., 2006; Pang, 2010). By contrast, two studies were quasi-experimental trials which compared the effects of Lesson Study and Learning Study (Marton and Pang, 2006; Pang and Marton, 2003). The duration of the nine studies varied remarkably. One study (Pang and Marton, 2003) used four lessons to analyze students’ performance. Another study used two lessons in two rounds in the same day (Lo et al., 2006). Some studies lasted a whole year (Cheung, 2011; Pang, 2010) with pre-, mid-, and post-test or delayed post-tests. Instead of assessing the students in a lecture basis, two studies evaluated their performance in a yearly school basis up to five to six years (Matoba et al., 2007; Perry and Lewis, 2009). One study (Stewart and Brendefur, 2005) did not specify the duration of implementation.

Findings

All of the included studies (n = 9) reported positive effects either on students or teachers or on both. Six studies reported that Lesson Study or Learning Study had positive effects on students (Cheung, 2011; Lo et al., 2006; Marton and Pang, 2006; Matoba et al., 2007; Pang, 2010; Pang and Marton, 2003). Three of these reported that the positive effects on students were statistically significant (Cheung, 2011; Marton and Pang, 2006; Pang, 2010). Students were found to have better understanding of the subject and had increased learning efficiency. Two studies found that Learning Study outperformed Lesson Study in enhancing students’ learning outcomes (Pang, 2010; Pang and Marton, 2003). Eight studies reported that Lesson Study or Learning Study had positive effects on teachers or teaching (Cheung, 2011; Lo et al., 2006; Marton and Pang, 2006; Pang and Marton, 2003; Marble, 2007; Matoba et al., 2007; Perry and Lewis, 2009; Stewart and Brendefur, 2005). Table II describes the positive effects of Lesson Study and Learning Study.

As shown by the table, one study reported that Lesson Study had significant positive effects on students (Matoba et al., 2007) and four studies reported that Lesson Study had significant positive effects on teachers (Marble, 2007; Matoba et al., 2007; Perry and Lewis, 2009; Stewart and Brendefur, 2005). Among these Lesson Studies, one study reported positive effects on both teachers and students (Matoba et al., 2007).

<table>
<thead>
<tr>
<th>No. of lesson studies with significant positive effect on students</th>
<th>No. of lesson studies with positive effect on teachers</th>
<th>No. of learning studies with significant positive effect on students</th>
<th>No. of learning studies with positive effect on teachers</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 (Matoba et al., 2007)</td>
<td>4 (Marble, 2007; Matoba et al., 2007; Perry and Lewis, 2009; Stewart and Brendefur, 2005)</td>
<td>5 (Cheung, 2011; Lo et al., 2006; Marton and Pang, 2006; Pang and Marton, 2003; Pang, 2010)</td>
<td>4 (Cheung, 2011; Lo et al., 2006; Marton and Pang, 2006; Pang and Marton, 2003)</td>
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</table>

Table II. Summary of positive effect of Learning Study and Lesson Study
All instances of Learning Study reported positive effects on both students and teachers. One study reported positive effects only on students (Pang, 2010). The positive effects on teaching from Learning Study were based on a comparative analysis that related differences in the students’ capabilities in handling the object of learning to differences in how the object of learning was handled by teachers. The two studies (Cheung, 2011; Marton and Pang, 2006) reported that Learning Study improved students’ generic skills such as creativity and financial literacy.

Discussion
This systematic review covered literature from 2000 owing to a lack of studies about Lesson Study and Learning Study before 2000 in indexed journals. Although Lesson Study has been widely used in Japan, most examples were not well documented; their fidelity and dissemination standards were problematic. What we reported here is based on the best evidence we could find from the extant literature. This study is the first of its kind to examine the achievement of Lesson Study and Learning Study, although it is a pilot study dealing with a small sample. The present findings have provided preliminary evidence supporting the benefits of Lesson Study and Learning Study as powerful tools to help teachers examine their practices and enhance student learning. They have been implemented as a viable approach to support teachers’ professional development (Fernandez, 2005; Holmqvist, 2011).

Although a vast number of Lesson Studies have been implemented in Japan for decades and a growing number of Learning Studies conducted in Hong Kong and Sweden, the effectiveness of Lesson and Learning Studies are not conclusive. There are a few reasons: first, most reports were published in Japanese, Chinese or Swedish, making it difficult for comments by English-speaking international experts; second, most were brief reports with inadequate information for replication; third, most were case reports rather than cohort studies, or randomized controlled trials. Contrary to the above, the studies that we have reviewed systematically here provided compelling evidence to support the view that Lesson Study and Learning Study worked in classrooms and improved student learning outcomes.

As Lesson Study has gained popularity in the United States recently, more research groups have investigated its effect on education. Although Learning Study is comparatively new, it shares many similarities with Lesson Study. This systematic review therefore examined the effects on Lesson Study and Learning Study at the same time.

Among the nine reviewed studies, eight studies reported that Lesson Study or Learning Study was beneficial to teachers while only six reported beneficial effects to students. As the main aim of Lesson Study is to enhance teachers’ professional development to improve students’ achievement (Matoba et al., 2007) while Learning Study is to enhance the learning outcomes of students (Kullberg, 2010), the combined effects are magnified if the linkage between teaching and learning is made clear to the audiences. Kennedy (1999) argued that the relationship between teaching and learning is the most central issue in teachers’ work, although it is also the most perplexing and least understood. According to Nuthall (2004), there have been many attempts to explain teaching-learning relationships; however, what has been missing is a theory that could explain the effects of teachers’ actions on student learning in a useful way. In the reviewed Learning Studies, teaching and student learning is explored by means of a framework called variation theory (Marton and Booth, 1997; Bowden and Marton, 1998; Marton and Tsuji, 2004; Marton and Pang, 2006). The framework makes it possible to analyze teaching and learning in commensurable terms. This implies that “what the teacher intends the students to learn,” “what is made
possible to learn in a lesson,” and “what the students learn” are inextricably connected and described in a similar way. The reviewed studies (Cheung, 2011; Lo et al., 2006; Marton and Pang, 2006; Pang and Marton, 2003) showed the use of variation theory to explain differences in students’ possibilities to learn with reference to the differences in how the object of learning was handled in the classroom. The five research reports on Learning Study compared teachers teaching the same content in different classrooms. Their findings showed a detailed account of what makes Learning Study effective. All five theory-driven Learning Studies pointed out that structuring of lessons (Cheung, 2011), employing patterns of variation in lessons (Lo et al., 2006), simultaneous variation (Pang and Marton, 2003), and learning objectives handled with variation and invariance (Marton and Pang, 2006; Pang, 2010) are effective ways for students’ specific improvement in their subject knowledge in language, general studies, and economics. This systematic review would benefit the research community in the field of learning and unveil the qualitative differences between teachers that teach well and teachers that teach ineffectively. In this way, Learning Studies will be transferable or may be replicable to other teachers and students if new teachers tried to help the students discern the critical features of the object of learning. It would be valuable to educational communities and teacher education if more research could also highlight the significant effects of Lesson Study and Learning Study on teaching and student learning. In the process of researching on lessons, the more teachers perceive classroom observation as being less evaluative, the more they can open to each other in order to improve their practices (Elliott, 1991). Teachers improved through mutual reflections and mutual learning of lessons (Saito and Atencio, 2013). This will open up more professional dialogues with regard to lessons among the teachers forming communities of learners (Wenger, 1998).

Most of the studies were case reports rather than cohort studies or randomized controlled trials. Only two reviewed studies were quasi-experimental trials (Pang, 2010; Pang and Marton, 2003) and one was a controlled experimental trial (Cheung, 2011). The other studies were either qualitative or quantitative studies. The qualitative or quantitative studies mostly investigated the students or teachers before they received intervention, mid-term of receiving intervention, and after they received intervention for a short term and a long-term, respectively. They did not compare the results with a control group. As a result, the significant positive effects of the Lesson Study and Learning Study of the qualitative or quantitative studies may be overestimated when comparing with the controlled trials. In addition, the qualitative studies (Marble, 2007; Perry and Lewis, 2009; Stewart and Brendefur, 2005) only used narrative methods as outcome measures which may not be as reliable and valid as validated instruments. The unknown number of participants in the studies also prevented the others from fully understanding the benefits of Lesson Study or Learning Study.

Some of the studies did not mention the number of teachers or students participants. As to methodology, the number of lessons, the duration of lesson, and the outcome measures used to examine different educated subjects with various education level varied remarkably across the studies. Given incomplete information, variations in the methodology, and more importantly the use of different outcome measures, meta-analysis could not be conducted in this systematic review. Concurrent tensions between teacher-classroom research and the wider body of educational research could be evident (Wolf and Akita, 2007).

Based on our review, Lesson Study and Learning Study can be viewed as a teacher-classroom intervention that includes elements of collaboration, reflection, and professional development. The ultimate aim is to engage teachers in constructing
new meanings about instructional practices and enhance the learning of students. Our review identified some positive evidence supporting the educational benefits of Lesson Study and Learning Study. There is, however, still a lack of high-quality and well-controlled studies in this field. The majority of the existing trials have small sample size. Further trials should be conducted with more representative samples to confirm the effectiveness of Lesson Study and Learning Study. Proper randomization techniques need to be used, clearly described, and fully reported. This review did not intend to make a conclusive remark on the effect of Lesson Study and Learning Study. On the other hand, we attempted to summarize findings of respective research in the past decade so as to shed light on the direction of future research on this modality.

It has to be noted that Lesson Study and Learning Study put the emphasis on the importance of observing students’ learning realities (Saito et al., 2008; Marton and Pang, 2006). These studies indicate the beginning of a radical conceptual change in teaching, that is, turning to the teaching and learning process. This kind of benefits that sharpen teachers’ views on student learning cannot be seen by looking at the narrow sense of effectiveness. Originally, the most important element in Learning Study is reflection on student learning. The current systematic study serves as a pioneering study to develop a dialogue with scientific researchers and journal reviewers who might not pay attention to research with a teacher-led approach (Lewis et al., 2011). Many classroom-based research papers which are perceived to be very powerful by educationalists and teachers are rejected by indexed journals that are more inclined to accept studies with experimental study. The small sample cases showed that a lot of meaningful Lesson Studies and Learning Studies that documented the learning process have not appeared in the academic world. This pioneering study will build a bridge between practice-based research and the academic world.

Lesson Study and Learning Study have benefits in teaching and student learning. However, due to insufficient evidence, further rigorous study that aims for a comparison of Lesson Studies and Learning Studies and the underlying concepts and/or research methods used in these studies is warranted.

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