

# The Learning Study in Hong Kong

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- A learning study is a hybrid of “design-experiment” (Brown, 1992; Collins, 1992) or “**design-based research**” (e.g. Kelly, 2003; 2004) and Japanese “**lesson study**” model (e.g. Stigler & Hiebert, 1999) and Chinese “**teaching research group**” (e.g. Ma, 1999).
- The key feature of the ‘learning study’ in Hong Kong which distinguishes it from the Japanese ‘lesson study’ is that it is based on a theoretical framework of learning – namely, **variation theory from phenomenography**.
- “Learning” is at the core of our focal awareness, i.e. learning in/with/through the research lessons by students, teachers and researchers.

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- We believe that the variation theory offers useful inputs to improving student learning, in terms of the possibility it gives teachers to identify **critical aspects** of understanding the objects of learning and thus introduce the **necessary patterns of variation and invariance** (see Pang & Marton, 2005).

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- Since all the teachers involved follow a **common theoretical framework**, they can have **shared “lens”** to observe, analyze and evaluate the research lessons.
- They also have a **common language** to discuss and share their understandings of the research lessons to achieve the object of learning agreed upon.
- We found that the engagement in learning study will **enhance both student learning and teacher professional development** (e.g. Marton & Pang, 2006; Pang, 2006).

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- Two major kinds of learning studies with different foci have been conducted in Hong Kong which we believe are complementary to each other.
- One put strong emphasis on **enhancing teachers’ professional development**, which is close to the Japanese ‘lesson study’ model.
- The other aims primarily to **put theoretical conjectures of the variation theory to test**, which is closer to the idea of ‘design experiment’.
- In most of the time, learning studies serve both purposes.

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- In terms of research methodology, for the learning study closer to design experiment, (termed as “**design-based-type**” learning study), a **comparison group** is always introduced alongside the **experimental group**. This serves to examine the impact of the learning study and variation theory on student learning for the object of learning chosen in a **systematic and rigorous** way.
- For those closer to the lesson study model (termed as “**lesson-study-type**” learning study), a **pre-experimental** pre-posttest design study is usually conducted to trace the impact of the learning study on student learning of a particular group of students before and after the research lesson(s).

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- Above all, these two kinds of learning studies inform each other in a constructive way.
- Nowadays, educational innovations are always **research-based** and **evidence-based**. Before implementing some new practices to schools **in a large scale**, we may examine the effectiveness of the innovative practices rigorously and systematically in a “design-based-type” learning study first.
- We then **disseminate** the findings to all schools and teachers in the relevant areas, possibly with thoroughly-examined pedagogical implications. Teachers may follow it up and engage in the “lesson-study-type” learning study on the same objects of learning by themselves.

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- On the other hand, when the teachers work closely together in developing good lessons or improve their teaching to enhance student learning in the “**lesson-study-type**” learning study, some new theoretical conjectures may be generated, which could be followed up by a “design-experiment-type” learning study.

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- For my research group in the University of Hong Kong, we undertake both kinds of learning study:
- Pang and Marton have carried out a series of studies over the last few years, which aims at developing in students a good understanding of some economic concepts (e.g. incidence of sales tax, price, change in price, etc.) (see Pang & Marton, 2003; Pang & Marton, 2005; Marton & Pang, 2006).
- Our current project extends from enhancing students' understanding of a certain concept to helping students develop **domain-specific capabilities, i.e. financial literacy**.

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- We have also examined how the use of learning study can enhance student learning in other domains and at different levels, e.g. elementary/primary school level, secondary/high school level and higher education level.

### At Primary Level:

- “Developing students’ understanding of price” (Primary 4),
- “Enhancing students’ independent learning” (Primary 5)

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### At Secondary Level:

- “Developing students’ understanding of visual arts” (Secondary 1);
- “Developing students’ critical thinking” (Secondary 2 and 6);
- “Enhancing students’ understanding of the mathematical concept ‘Slope’” (Secondary 3);
- “Improving student understanding of acids and bases” (Secondary 4);
- “Improving student learning in Chinese Composition” (Secondary 5);
- “Enhancing student learning of the concept of gains from trade” (Secondary 5).

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### At Teacher level:

- We also conducted study to investigate the impacts of learning study on **teacher professional development and learning**, e.g. to study the professional learning of Economics teachers (see Pang, 2006) as well as History and Science teachers through learning study.
- To evaluate the impacts of learning study on the **professional competency and development of student teachers**, we have incorporated the practice of “learning study” into our **pre-service teacher education program**. Student teachers in the area of Economics, Geography, Mathematics and Chinese Language engage in learning study with their own groups of classmates and mentors.