

SYM-12Abstract Number: **20153****Abolishing the Research –Practice Gap. Lesson/Learning Study as Research for, not about, Teachers.**Ingrid M Carlgren, *Stockholm University*Marie Björk, *Stockholm University*Jenny Fred, *Stockholm University*Malin Albinsson, *Stockholm University*Åsa Nikula, *Sjostadsskolan*Paul Stensland, *Sjostadsskolan*Anna Stridfält, *Sjostadsskolan*Hiba Mikhail och Boel Staffansson, *Ekenbergsskolan*Ko Po Yuk, *The Education University of Hong Kong*

Several researchers have pointed out that the translation and transformation of the Japanese Kyozaï Kenkyuu tradition –into English language and US-context in the form of 'Lesson study' - has implied a distortion and a missing of the true nature of Kyozaï Kenkyuu as a collaborative investigation and improvement of teaching where the aim is not to develop a perfect lesson but rather to develop knowledge concerning curriculum-inaction (Elliot, Stigler & Hiebert, 2016). Takahashi & McDoughal (2016) talk about collaborative lesson research (CLR) in order to point out the investigative and knowledge producing aspects of lesson study. In Sweden (as well as in many other Western countries) a tradition of centralized top-down reform system for school development make up a cultural script for lesson and learning study leading to a focus on teachers and teachers' knowledge rather than knowledge about teaching. A starting point for this symposium is that lesson and learning study should be research on teaching rather than on teachers and that lesson and learning study can be seen as a way for the profession to reclaim participation and cooperation in educational research into teaching, learning and knowing. The research results from learning studies are directly useful for professional teachers in contrast to what is commonly the case in other research traditions which need a bridge in order to become relevant to practice. In this symposium we will present and discuss in what ways results from learning study research are of direct interest to teachers. The usefulness may be related to the kind of questions that are explored as well as to the results in terms of critical aspects of the learning object and design principles for teaching.

Chair: Ingrid Carlgren Discussant: Ko Po Yuk

1. Marie Björk, Åsa Nikula, Paul Stensland and Anna Stridfält : To formulate a research question relevant to the teaching profession This presentation is an example of how a mathematics teacher research group collectively define an educational problem and formulate research questions regarding the ten base-system. With support from learning theories (Davydov, 2008; Marton, 2015) and earlier research, concerning measurement activities in different base-systems (e.g. Slovin & Dougherty, 2004; Venenciano, Slovin & Zenigami, 2015) a learning study in grade four was conducted.
2. Jenny Fred, Hiba Mikhail och Boel Staffansson: Descriptions of aspects of an object of learning as a planning tool in teaching To enable younger students to develop the ability to make algebraic generalizations, mathematical patterns is avocated from the outset. The meaning of this is

however not entirely evident nor is the creation of learning conditions in relation to this ability. A teacher research group collectively conducted a learning study with a focus on identifying critical aspects of the object of learning: express and justify algebraic generalization of patterns. This presentation focus on the identified critical aspects, how they may have implications for teaching and and can be used by teachers in their planning and their teaching.

3. Malin Albinsson: Variation theory as a tool for qualifying the use of teaching material A group of teachers for grade one students used Learning study and variation theory (Marton & Runesson, 2015; Lo 2012) to improve teaching with the manipulatives Base Ten Block (a teaching material). Despite the use of manipulatives organised in ones, tens, hundreds and thousands to mediate our number system students still encounter problems. In the presentation we will give examples of how variation theory can qualify teaching and learning with manipulatives Base Ten Blocks and thereby improve student learning.