## Resourcing teachers’ documentation work through the combination of research and practice: the case of the Teaching Research Group in China

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Working collectively, in China, is considered as essential since Confucius: “Whenever walking in a company of several persons, among them must be someone worth learning from (三人行，必有我师) ”, or “benefiting between teaching and learning (教学相长)”. From the view of culture, the school-level working culture in China has been described as *collective* in Yang’s study (2010). The frequent good performances of Chinese students in international tests, gains much attention on their teachers. Despite lower academic qualifications compared with teachers from other counterparts, Chinese teachers are considered benefiting from some efficient school-based means (Li & Huang, 2008): they gain a deep understanding of basic mathematics and adequate pedagogical expertise through activities in TRG (Wang, 2013).

Influenced by the practice of “didactic group” in Soviet Union, the word “TRG” was first officially promoted by China Education Ministry in 1952, aiming to “study and improve the way of teaching in secondary schools (MOE, 1952), to meet the demand of rebuilding schools after wars. In 1957, the property and tasks of TRG was emphasized again and clearer in official rulebooks: TRG is not an administrative department, the leader of TRG is not an administrative cadre, and the task of TRG is organizing teachers to do teaching research, and improving the quality of education (MOE, 1957). With the 1990`s curriculum reform, the TRG undertook the work of carrying out post-1990 curriculum: “Teaching research units of schools need to center on the basic education curriculum reform, fill its functions of researching, guiding, and serving ” (MOE, 1990). Since 2001, encouraged to participate into some education experiments, TRG slowly gained a research component. TRG is not a group by voluntary, which means once a teacher starts to work in a school, s/he will automatically belong to a TRG of her/his discipline. Branching from each discipline TRG, there exists Lesson Preparation Group (LPG) in each grade. Collective teaching research activity is usually conducted based on LPG.

Two typical and regular activities of TRG, Collective lesson preparation and open class, represent two operation modes, task-based activities and diagnosis-based activities respectively.

Lesson preparation usually refers to preparing lessons individually, while collective lesson preparation generally consists four steps (see figure 1): Topics assigning; individual preparation; collective discussion; perfecting the lesson plans. As a core part of TRG activity, collective lesson preparation provides opportunities for teachers’ community and learning, reduces their burden and save more time.



Figure 1. Operation mode of task-based activity (Hu, Wang, 2014, P246)

Open class used to be example class at the beginning, which is often given by experienced teachers to novice teachers. Now open class in schools gains more discussion elements. As one typical form of open class, “Mo Ke” (Chinese lesson study) could be a typical diagnose-based operation mode (see figure 2). The detailed process of “Mo Ke” is: (1) a teacher communicates in TRG about a problem rising from her teaching practice; (2) with the help of colleagues, the teacher gets the preliminary problem solving programs; (3) the teacher applies the program into reality; (4) with the carried out results, the teacher reports and discusses with his colleagues again; (5) they diagnose the result and make a new improved program; (6) the teacher carries out the new programs in practice… There is no ending until the problem solved. During the process of diagnose-based activities, what TRG focuses most are the problems raising from teaching, the object is finding the reasons and the methods for the problem, and getting reflective ideas in the end.



Figure 2. Operation mode of diagnose-based activity (Hu, Wang, 2014, P249)

Such collective activities benefit teacher professional development through (1) bringing individual teacher multi-perspectives via brainstorms on the same issue in collective activities; and (2) interactions among diverse individuals generate rich teaching resources, as well as collective knowledge, such as lesson plans, teaching ideas or methods; last but most importantly, collective activities provide lots of opportunities for teachers’ reflection on both their own and other’ experiences. The importance of reflection has already argued in Posner’s formula (1989): Growth=experience + reflection.

However, “teaching research” does equal “research in teaching”. Mao (2013) reflected the “research” component of TRG: “Overall, the main job of TRG is not research, but more like collective lesson preparation” (Mao, 2013). A visible proof is that in some schools, extra “Research Group” has been set up to conduct some projects or researches particularly. Generally, the issues of the projects can come from teachers’ teaching practice, or some sub-projects of the universities.

Anyway, no matter TRG or its variant groups/collectives, is absolutely a hub connecting teaching and research, as well as practice and theory, teachers and researchers, which provides a window to see through teachers’ expertise from their interactions in those collectives. This is the original idea for the author’s PhD research， which is a China-France comparative case study on two math teachers’ documentational expertise seen through their resource work in collectives, namely TRG in China, and LéA in France. A pilot study on 3 expert teachers from a same math TRG in a high school in China has shown their diverse expertise in the collective (Pepin et al. submitted). Moreover, a preliminary comparative analysis between TRG and LéA has been accepted by ICME 13 (Wang, communication accepted).

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