

Lesson study, collaboration and teacher efficacy: Stories from two school-based math lesson study groups

Laurel D. Puchner^{a,*}, Ann R. Taylor^b

^a*Southern Illinois University Edwardsville, P.O. Box 1125, Edwardsville, IL 62026-1125, USA*

^b*Southern Illinois University Edwardsville, P.O. Box 1122, Edwardsville, IL 62026-1122, USA*

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Abstract

This article describes the experiences of two US teacher groups and their lesson study work. Their stories illustrate some of the dynamics and promise of teacher change spurred by lesson study. The first case is primarily about teacher efficacy, as a group of teachers discover through lesson study that their planning and work can have an impact on student engagement in the classroom in a way that they had not realized. The second case is about one teacher's struggle with the move from isolation to collaboration, illustrating the tension between autonomy and collaboration that often occurs during such a transition.

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1. Introduction

What happens when lesson study as a professional development model helps two groups of US elementary teachers work more collaboratively? A school culture in which teachers collaborate around teaching and learning is beneficial to both teachers and students. Indeed, research indicates that collegiality and teacher efficacy are correlated, and that they predict student achievement (Cowley & Meehan, 2001; Edwards, Green, & Lyons, 1998; Hopkins, 1990; Lee, Dedrick, & Smith, 1991; Smylie, 1990; Taylor & Tashaddori, 1995). So at a time in the USA when the pressure to increase

student achievement is intense, and teacher efficacy is being negatively impacted by increasing external demands and critiques, examining stories of increased teacher collaboration is a significant contribution to the profession.

The challenge of shifting the isolationist culture of schools to a more collaborative culture can be difficult (Gersten, Gillman, Morvant, & Billingsley, 1995; Joyce, Bennett, & Rolheiser-Bennett, 1990; Little, 1990; Short, 1992). In this article, we describe the experiences of two teacher groups and their lesson study work. We believe that these stories reveal the potential that lesson study offers to help teachers work more collaboratively. These stories also flesh out some challenges of the shift from isolation to collaboration. We tell the first story within the context of the theme of teacher efficacy, as a group of teachers discover through lesson study

*Corresponding author. Tel.: +1 618 650 3286.

E-mail addresses: lpuchne@siue.edu (L.D. Puchner), ataylor@siue.edu (A.R. Taylor).

that their planning and work can have an impact on student engagement in the classroom in a way that they had not realized. The second case is about one teacher's struggle with the move from isolation to collaboration, illustrating the tension between autonomy and collaboration that often exists for teachers during this type of transition.

2. Background

Lesson study is the centerpiece of Japanese elementary teachers' professional development, and since the late 1990s, US researchers have been sharing information about the model with US audiences (Fernandez & Yoshida, 2004; Lesson Study in Japan–US Science Education, 2002; Lesson Study Research Group, 2001; Lewis, 2000, 2002; Lewis & Tsuchida, 1998; Stigler & Hiebert, 1999; Taylor & Puchner, 2002). Lesson studies can be done by teachers within a school, across a district, or in large public demonstration lessons. In this paper, we focus on the first type, within-school. First, a topic is chosen by a group of 3–5 teachers. This topic is linked to a larger goal. (For example, as part of a goal to improve children's independent problem solving, teachers may work on a lesson study topic of subtraction with regrouping.) Teachers, usually of the same grade level, meet regularly to collaboratively plan a group of lessons and specifically one "research lesson." They produce a detailed written lesson plan, and then one of them teaches the group's "research lesson" while other teachers observe and take notes. The emphasis during the entire process is on student learning, hence observers focus on students and make inferences based on evidence rather than evaluate teacher behavior based on past experiences. Immediately following the lesson, all teachers meet to share feedback in a debriefing session. Often, but not always, teachers then revise the lesson, reteach it, evaluate and reflect on the lesson again, and share their results. The process may take many months. The proclaimed benefits of this model include the following: professional development is set within the context of the particular school's curriculum goals that teachers are already working with; teachers focus their attempts to improve their teaching on just one lesson, set within the context of a larger curriculum unit—a manageable and motivational goal; and improvement in teaching is assumed to happen gradually over longer periods

of time as teachers inquire and think together (Lewis, 2002; Stigler & Hiebert, 1999).

In February 2002, we (Ann and Laurie, two university professors) received an Illinois State Board of Education grant to implement and examine the Japanese lesson study process of professional development with 17 area teachers. In the project our university was part of a consortium of several Illinois universities who were examining the potential for lesson study to improve the teaching of math in Illinois schools. The short notice and short duration of the grant shaped our decision-making, and we quickly facilitated the creation and implementation of five lesson study groups in southern Illinois. Each teacher received a small stipend, and funds were also used to pay for substitute teachers for the day of the teaching of the lesson and debriefing, and to pay a small stipend to lesson study advisors. (The advisors were county math coordinators whom we asked to provide some "math expert" advice to the groups.) Over the next 6 months we saw the ways in which patterns of collegiality and resulting teacher efficacy could be affected by the lesson study process. In the interest of space this paper will focus only on two of the school-based lesson study groups; however, data from other groups support our insights from these stories.

The groups each contained four elementary school teachers, most of whom had little or no prior experience with lesson study. Ellstown School is a rural pre-kindergarten through eighth grade school with about 760 children, about 98% white and mainly middle class (about 10% of the students qualify for free or reduced-price lunches). The Ellstown group was formed by a county math coordinator who was very interested in lesson study and with whom Ann had discussed the project. We did not know any of the teachers prior to the project, and the two third and two fourth grade teachers comprising this group had never participated in a lesson study project.

Rose City Elementary School is a pre-kindergarten through eighth grade school with about 450 children, located in a small town of about 2000. The town is 98% white, and about 45% of the students in the school receive free or reduced-price lunches. The Rose City group was formed when Laurie asked a former student who had done a lesson study project as a class assignment if she would be willing to form a group in her school. All the teachers had at least 10 years of teaching experience. So this

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