

**DOES THE ANSWER DEAL WITH THE COMPLEXITIES? STEERING REFLECTIVE
MODIFICATION OF MATHEMATICAL TASKS**

LEE, KYEONG-HWA

Seoul National University, Korea

Understanding the role of tasks and adapting them in practice has been considered one of the contributors to development of teaching proficiencies in mathematics. However, most teachers tend to use tasks without modification rather than adapt them for their own mathematics teaching. Enhancing the mathematical and pedagogical knowledge that teachers need to be adaptable in task use has been sought in various ways. Inadaptability in teaching with tasks has been a persistent problem that I have grappled with for several years. To tackle this problem, I built a co-learning partnership with two Korean secondary mathematics teachers, intending to help them understand the necessity and ways to modify tasks rather than just following instructional materials. Over the course of eight months of exchanging ideas by e-mail and meetings 12 times, I came to understand why and how the two teachers developed a passive and reluctant attitude toward task use. My role in the co-learning partnership was not only informing the teachers of related theories and strategies of task use, but also listening to whatever the teachers wanted to talk about.

A part of research findings will be shared in the presentation. First of all, I will relate what I have identified as the teachers' reasons for being reluctant to modify tasks. The reasons the teachers described in our discussions online or in person fall into three categories: (a) tasks or mathematical knowledge, (b) students or student learning, and (c) the teachers' views of themselves as teachers or teaching. Second, I will introduce what the teachers used as kinds of panaceas whenever weak points of their teaching were diagnosed and they were encouraged to modify instructional materials: one is "to prevent unexpected difficulties in learning" and the other is "to sustain learning possibilities." The dominance of these two of the teachers' considerations could be poisonous if teachers cannot see the complexities and depend only on these two. Third, I will relate how the question, "Does the answer deal with the complexities?" stimulated the teachers' reflective modification of tasks. As a conclusion, I will show that enhancing teachers' self-awareness of why and how they depend on the limited and defensive diagnoses of their teaching and focusing their attention on the complexities of the teaching and learning processes can facilitate looking at familiar tasks from unfamiliar point of view, which may lead teachers who are passive to be more active in the task modification.