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Use of assessment data to improve science instruction in a professional development programme

Sunethra Karunaratne
Faculty of Science, University of Peradeniya, Peradeniya

What do teachers learn from assessment data to improve their instruction and hopefully students' understanding of science? To answer this question, a professional development program for teachers was examined and the teachers' analyses of student work and inferences drawn from them were used for the investigation The project utilized problem-based learning and teacher research as tools for deepening pedagogical content knowledge with the goal of improving a teachers' ability to study and improve the practice of teaching. Seventy-eight teachers participated in the professional development project. Participants chose a science content area to focus on during the professional development and gave two open-ended, application questions on that subject to their students. Teachers were shown a way to tabulate students' responses in three workshops of three days on content development, four days on unit development and three days on teacher as researcher. Based on the analyses of their assessment data, teachers were asked to make inferences about their assessment tasks and to suggest ways to improve their instructional units. These analyses were the main data source of this study. Analysis of the data revealed that teachers' have some important skills, such as identifying weaknesses in the wording of questions required for using assessment to guide curriculum development. Of the 52% teachers who used their own questions for student understanding belonged to comprehension (33%) and application (46%). However, few teachers (5%) proceeded beyond merely identifying and stated that they needed "more" instruction to suggest specific foci or instructional strategies to improve their units. Thus this study articulates a critical area for professional development programs to focus on.

Keywords: Assessment, professional development

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