

PREFACE

The videotape *Japanese Lesson Study: Ideas for Improving Mathematics Teaching* is a product of a seminar, Analyzing the Teaching of Mathematics in Japan and the United States, held in Tokyo, Japan, following the Ninth International Congress of Mathematical Education in August, 2000, and funded by a grant to the National Council of Teachers of Mathematics by the National Science Foundation. A list of the seminar participants can be found in Appendix 1.

The purpose of the videotape is to introduce the concept of Japanese lesson study to the American mathematics education community. Lesson study can be used for preservice teacher preparation and in-service professional development. However, implementing the ideas of Japanese lesson study will entail more than a simple transplant. The culture of American schools and the design of appropriate professional development opportunities based on teachers' needs must be considered before implementing lesson study ideas. Although the hope is that essential teacher-driven characteristics of lesson study (e.g., collaboration, observation, analytic reflection) will remain, some adjustments and modifications will be inevitable (see, e.g., West and Curcio [in press]). As with all aspects of teaching, not just one way exists to accomplish professional development. This *User's Guide* contains some suggestions, and it is *not* meant to be prescriptive (see "Suggestions" below).

In the videotape, attempts have been made to capture the essential elements of lesson study (i.e., collaborative planning, lesson observation, analytic reflection, and ongoing revision; see Appendix 2 for a template). This *User's Guide* was developed to supplement the videotape by providing some background information about lesson study (see the section "What Is Japanese Lesson Study?") and implications for professional development in the United States (see the section "Can Lesson Study Work for Us?"). The guide also contains some resource material: a translation of the detailed plan of the grade-2 lesson (taught by Kozo Tsubota at the University of Tsukuba Elementary School for the National Group for the Mathematics Lesson Study Conference on Wednesday, August 9, 2000) featured in the videotape; a translated transcription of excerpts of dialogue between Mr. Tsubota and his pupils that occurred during the lesson; a selected bibliography and a list of lesson study Web sites; and tem-

plates (see Appendixes 2 and 3) summarizing ideas related to Japanese lesson study, ready for use at professional development sessions.

Some Suggestions for Using the Videotape and User's Guide

Designed to introduce Japanese lesson study, the videotape can be used with in-service and preservice mathematics teachers who are interested in learning about Japanese lesson study and are considering adapting it for their use. After asking the teachers to share what they know about Japanese lesson study and recording their thoughts for projection by means of a computer, overhead projector, or chalkboard, the videotape (duration 7 minutes, 25 seconds) can be shown. A discussion of the key ideas could follow, referring to or projecting a slide of Appendix 2. The content and form of the grade-2 lesson plan (see pages 9–14) can be analyzed to prompt a discussion of planning and lesson development. To exemplify the discourse or interactions between Mr. Tsubota and his pupils, sections of the transcripts (see pages 15–21) can be distributed and discussed.

Groups of three or four teachers may want to form study groups to discuss their curriculum and plan a lesson together. The planning phase should not be rushed. Goals and objectives need to be carefully discussed and formulated before designing instructional tasks and activities and anticipating students' reactions. The Lesson Study Protocol (see Appendix 3) may be useful in establishing guidelines for observation and postlesson discussion. To help observers focus on different aspects of the lesson, observation tools are also recommended (Artzt and Armour-Thomas 2002) and can be used to complement the lesson study activities.

Lesson study ideas can also be used with preservice teachers in a methods course or in a field component of a methods course. After viewing and discussing the videotape, groups of three or four preservice teachers can be assigned to study a topic from the mathematics curriculum of a given grade, formulate goals and objectives for instruction, and develop a lesson plan together. Again, this planning phase should not be rushed. Then during peer teaching or microteaching, each preservice teacher can be given the opportunity to teach the lesson following various iterations based on feedback and analytic reflection. These experiences, supported by tools for observation and self-assessment

(Artzt and Armour-Thomas 2002), contribute to developing reflective practitioners.

As mentioned previously, these suggestions are not meant to be prescriptive. Viewers are encouraged to adapt these materials to meet their own needs for designing professional development experiences.

Acknowledgments

The preparation of the videotape and this *User's Guide* would not have been possible without the assistance and support of many people. In particular, many thanks are due to Rich Billay, video producer at Queens College of the City University of New York, for his creativity, guidance, and patience. By providing translation services, Emiko Mizunuma and Akihiko Takahashi were instrumental in bringing meaning to the many hours of videotape footage. I am most grateful to Yoshihiko Hashimoto and Toshikazu Ikeda, at Yokohama National University, for their guidance, advice, and suggestions throughout the development of the videotape and *User's Guide*.

Thanks are due to the American seminar participants who generously shared their notes from the lesson study sessions held in Japan: Angela Giglio Andrews, Shelley Kim Ferguson, Jackie Hurd, and Carol Midgett.

Special thanks are extended to Victor Entertainment, Incorporated, for permission to use the "Counting Song Variations," from *Spring Ocean* CD, and to MicroFrontier for permission to use the image of the vinca flower. Hiromu Ohno is acknowledged for designing the seminar logo used throughout the videotape; the logo is found as the background design in Appendix 1.

The support of the Division of International Programs of the National Science Foundation is gratefully acknowledged. Appreciation is expressed to J. Spud Bradley, National Science Foundation, and John Thorpe, former executive director of the National Council of Teachers of Mathematics, for their advice throughout the ICME-9 Travel Grant Project.
