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*Designing Assessments
of Microworld Training for
Combat Service Support Staff*

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Summary

We propose new methods for evaluating learning outcomes from Combat Service Support (CSS) microworld training. RAND developed and piloted microworld training for distribution management skills as a part of a larger project that entailed making changes to the current structure, content, and methods of CSS training. Microworld models are small-scale simulations of organizations and operations. They are useful for training distribution management processes because they give the learner an opportunity to postulate changes and rapidly simulate the modified or new processes. Immediate feedback helps trainees understand how their actions affect the operation and how system components are interrelated. Consequently, trainees can learn proactive management of assets with realistic planning horizons and develop an understanding of the dynamic complexity affecting the organization.

We conducted pilot studies using a microworld model for U.S. Army Reserve (USAR) soldiers in Distribution Management Centers. The degree to which trainees learned training content was measured with a knowledge test in a pretest-posttest design, including a control group that received only the training and posttest. Results showed a statistically significant increase in trainees' knowledge of distribution management processes, although the gains appeared to be modest. The observed small increment in performance could have been due to the content and structure of the test, which may not have fully captured learners' knowledge or the factors that account for learning. Consequently, we propose a comprehensive set of evaluation measures to better assess learning and pinpoint areas for improvement in training content and processes. In this report, we present the following recommendations for the USAR and Combined Arms Support Command (CASCOM): (1) use a multidimensional, objective approach to measuring learning outcomes that includes cognitive, skill-based, and affective measures at multiple points in time; (2) provide training and collect learning measures via personal computer to facilitate training on demand, efficient data collection, and rapid feedback; and (3) provide incentives for the CSS centers and schools with responsibility for a function to help the field units develop training and assess training effectiveness. These recommendations should have wide application to a variety of process-oriented training programs in the field and in the schoolhouse.