QUICKSMART: IMPROVING STUDENTS' RESPONSE TIME AND STRATEGY USE IN THE RETRIEVAL OF NUMBER FACTS

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This poster describes a program focused on improving basic numeracy skills which was carried out with 24 students from rural New South Wales, Australia. Students identified as consistently low-achieving in the middle years of schooling were targeted for support. The program ran for three school terms with pairs of students involved in three thirty-minute sessions per week. Results indicate that students decreased the average response times needed to recall basic addition, subtraction, multiplication and division number facts and also showed general gains on standardized test scores of higher-order thinking as well as improvements on state wide testing measures.

The research program described in this poster is referred to by the generic title *QuickSmart* because it aims to teach students how to become *quick* (and accurate) in response speed and *smart* in strategy use. In terms of research, the study explored the effect of improved automaticity on the higher-order process of mathematical problem solving. The *QuickSmart* program brings together research conducted at the Laboratory for the Assessment and Training of Academic Skills (LATAS) at the University of Massachusetts and related work from the Centre for Cognition Research in Learning and Teaching (CRiLT) at the University of New England in Armidale, Australia. The *QuickSmart* intervention is based on a substantial body of research related to the importance of particular numeracy skills in the development of understanding of the four operations on simple and extended tasks (e.g.; Pegg, 1992; Zbrodoff & Logan, 1996).

This poster will use photographs, graphs, and text to address the theoretical underpinnings of the *QuickSmart* program, describe the research design, and outline the instructional approach applied during the study. The presentation will also provide information regarding implementation issues and describe the dependent measures, before presenting the results, students' comments, and implications for future research.

References

Pegg, J. (1992). Assessing students' understanding at the primary and secondary level in the mathematical sciences. In J. Izard & M. Stephens (Eds.*), Reshaping assessment practice: Assessment in the mathematical sciences under challenge* (pp. 368-385). Melbourne: Australian Council of Educational Research.

Zbrodoff, N. J., & Logan, G. D. (1986). On the autonomy of mental processes: A case study of arithmetic. *Journal of Experimental Psychology: General*, *115*, 118–130.