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**Comparing training approaches for technological skill development in introductory statistics courses.**

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Summary: Technology has transformed the modern introductory statistics course, but little is known about how students develop the skills required to use this technology. This study compares two different training approaches for learning to operate statistical software packages. Guided training (GT) uses direct instruction and explicit guidance during training, whereas active-exploratory training types, such as error-management training (EMT), promote self-directed exploration. Previous studies in general software training suggest that EMT outperforms GT at promoting adaptive skill transfer. This study recruited a sample of 115 psychology students enrolled in introductory statistics courses that ran concurrently across two campuses. These students completed weekly, one-hour training sessions learning to use the statistical package SPSS. In the final week of the semester, students completed an SPSS certification task to measure adaptive skill transfer. The EMT and GT approach was implemented in Campus A and B respectively. Due to non-random allocation, the covariates of gender, personal access, statistical knowledge, and training progress were taken into account when modeling adaptive transfer between training approaches. After controlling for these covariates, no difference in adaptive transfer was found between training approaches. The results suggest that improving access to statistical packages may provide a more powerful way to improve the development of technological skills over using different training approaches.

*Classification:* K15 U75

*Keywords:* stochastics; university teaching; introductory statistics; statistical software packages; educational media; computer as educational medium; students' technology skills; guided training; active-exploratory training; error-management training; performance utility; self-regulatory skills; research; training approaches; metacognitive activity; adaptive training transfer; training outcomes  
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