

A computer-based spatial learning strategy approach that improves reading comprehension and writing

Héctor R. Ponce,
Richard E. Mayer,
Mario J. López

Abstract

This article explores the effectiveness of a computer-based spatial learning strategy approach for improving reading comprehension and writing. In reading comprehension, students received scaffolded practice in translating passages into graphic organizers. In writing, students received scaffolded practice in planning to write by filling in graphic organizers and in translating them into passages. Based on a cluster-randomized sampling process, 2,468 students distributed in 12 schools and 69 classrooms participated in the study. Schools were randomly assigned to the computer-based instruction (CBI) group or traditional instruction (TI) group. Teachers assigned to the CBI treatment integrated the applications into the language arts curriculum during one school semester. A standardized test was used to measure reading comprehension and writing. The data were analyzed through a statistical multilevel model. The findings showed that students in the CBI group improved their reading and writing skills significantly more than students under TI—yielding an effect size $d = 0.30$.

Keywords:

Computer-based instruction; Reading comprehension; Writing; Learning strategies; Multilevel analysis; Graphic organizers.