Classroom Strategies to Improve Gender and Minority Performance in Computer-Assisted Nutrition and Health Education

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Abstract
This research pertained to classroom strategies to enhance gender and minority performance in computer-assisted classrooms. The purpose was to use a nutrition-related interactive CD-ROM to determine the effect of gender and task assignment as “driver” or as “navigator” on students’ knowledge and attitudes. Students from eleven middle school classes (N=269) were recruited to participate in the five-day study. Students were randomized into one of four dyad groups: (1) same gender males, (2) same gender females, (3) mixed gender with a male as driver, female as navigator, and (4) mixed gender with a female as driver, male as navigator. Students were directed to stay in their assigned role as either navigator or driver for the remainder of the intervention and to work cooperatively with their assigned partner in the dyad throughout the week. Pre-tests assessed students’ demographics, computer access, computer attitudes, computer confidence, and nutrition-related knowledge. Students spent the remainder of the week working on the “A Drop of Water” problem-solving interactive CD-ROM. Upon completion of the CD-ROM, students completed a post-test similar to the pre-test. Fifty-two percent of the participants were female, 78% were African American, and the median age was 12.7 years. Fewer than half (45%) of the students had access to a computer at home. A significant improvement in knowledge was found (p=0.01, paired t-test); however, no change in attitude was found. No differences were noted in improvements in knowledge between males and females and between drivers and navigators, using Repeated Measures Analysis of Variance. Also, no dyad group differences in improvement for knowledge were found. Chi-square analyses indicated that drivers enjoyed their role at the computer more than navigators (p=.001), but that, if given the choice to be a navigator or driver in future studies, more girls would choose to be navigators than drivers (23% vs. 12%, respectively). The results add to the growing body of literature on computer-assisted cooperative learning. These results can aid implementation of similar problem-solving programs to enhance the experience of females, minorities, and at-risk youth in the classroom.