

Research: The Concept Comparison Routine

Overview

The Concept Comparison Routine is used by a teacher to help students understand the relationships between two concepts, particularly how the concepts are similar and different. This study investigated the effects of use of the Concept Comparison Routine on student performance. The instruction was provided by a researcher. A total of 107 students enrolled in 7th-, 8th-, 10th-, 11th-, and 12th-grade science classes participated. They were randomly assigned within their classes to participate in either an experimental or control group within designated subgroups: high achievers (HA), normal achievers (NA), low achievers (LA), and students with learning disabilities (LD). Fifty-five students were in the experimental group; 52 were in the control group. A lesson on two diseases, "malaria" and "snail fever," was taught to the students. Experimental students were taught the lesson comparing and contrasting the two diseases with the Concept Comparison Routine. Control students were taught the same lesson with the same content using a traditional lecture-discussion method. A test, comprised of open-ended and objective questions, was given to all students on the content of the lesson on the next day.

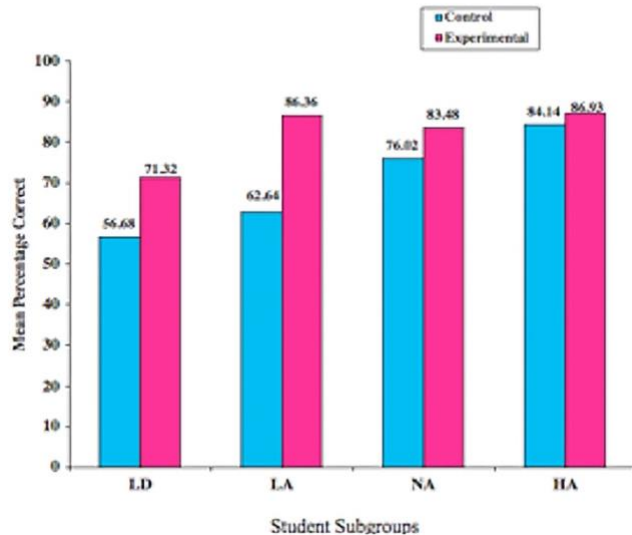
Results

Results are shown in Figure 1 on the total test score for the student subgroups. A significant difference was found between all experimental and all control students' scores in favor of the experimental group [$F(1,99) = 20.53, p < .001, \eta^2 = .172$]. This difference represents a large effect size. Moreover, a significant difference was found between the scores of the students with LD in the experimental group and in the control group [$F(1,35) = 10.24, p < .003, \eta^2 = .226$]. Again, this is a large effect size. A significant difference was also found between the scores of the low-achieving students in the experimental and control groups [$F(1,14) = 8.39, p < .012, \eta^2 = .375$]. Again, this difference represents a large effect size. Similar differences were found for the normal achievers, but no differences were found for the high achievers. All of the significant differences that were found were in favor of the Concept Comparison Routine instruction.

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Figure 1: Mean percentage scores earned on tests by students with LD, low-achieving (LA) students, normally achieving (NA) students, and high-achieving (HA) students.

Mean Percentage Total Scores



Conclusions

This study demonstrates that the Concept Comparison Routine, when used under controlled conditions, can enhance student learning and retention of information. In addition, it shows that students in different subgroups, including students with LD, low achievers, and normal achievers can benefit from the use of the routine. High achievers perform equally well when the routine is used and when lecture-discussion methods are used.

Reference

Bulgren, J. A., Schumaker, J. B., Deshler, D. D., Lenz, B. K. & Marquis, J. (2002). The use and effectiveness of a comparison routine in diverse secondary content classes. *Journal of Educational Psychology*, 94(2), 357-371.