

Research: The Question Exploration Routine

Overview

The Question Exploration Routine (QER) is used to present information related to a critical question to students. The critical questions that are the focus of this routine are broad questions that all students will be required to answer during the course on a unit test, final exam, or state competency test. A critical question in a U.S. history course might be "How did geography play a role in causing the Civil War?" In this study, the effects of the routine were compared to the effects of the traditional lecture format using a counterbalanced design. Two critical questions were chosen for the lessons: one related to biological warfare and the other related to chemical warfare. Participants were 116 students in seven, seventh-grade classes. A written test, which included matching, multiple-choice, and short-answer questions randomly intermixed on the two topics, assessed student knowledge. The scores of students in several subgroups were monitored: students with disabilities, low achievers, average achievers, and high achievers

Results

Students receiving QER instruction on the chemical weapons topic earned significantly higher percentage scores on the total group of chemical weapons items than students receiving the lecture method on chemical weapons [$F(1, 9.78) = 29.36, p < .0001$]. The effect size was .345, a very large effect. With regard to the percentage of students in the subgroups who earned "passing" scores (i.e., 60% or above) for the test items associated with chemical weapons, mean percentage scores for the students participating in the QER and the lecture method were: 77% and 27% for the SWDs, respectively; 86% and 50% for the LAs, respectively; 93% and 71% for the AAs, respectively; and 100% and 100% for the HAs, respectively

On items related to biological weapons, students who participated in the QER instruction during the biological weapons portion of the lesson earned significantly higher scores overall than students who participated in the lecture instruction, $F(1, 114) = 37.12, p < .0001$. The effect size (eta-square) was .246, a large effect size. The subgroups of students earning mean percentage scores at or above the "passing" level on the items associated with biological weapons for the QER and lecture treatments were: for the HAs, 100% and 83%, respectively; for the NAs, 93% and 54%, respectively; for the AAs, 75% and 29%, respectively; and for the SWDs, 36% and 12%, respectively.

Conclusions

Use of the Question Exploration Routine yielded significantly higher student performance on a written test than the traditional lecture method, regardless of the topic. With a few exceptions, similar results were achieved by the subgroups within each larger group. Additionally, substantially larger percentages of students in the subgroups passed each test when they participated in the QER versus traditional instruction.

Reference

Bulgren, J. A., Marquis, J. G., Lenz, B. K., Schumaker, J. B., & Deshler, D. D. (under submission). The effects of the Question Exploration Routine on the content learning of secondary students in inclusive general education classes.