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Integrating Webquest into Chemistry Classroom Teaching to Promote Students' Critical Thinking

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ABSTRACT

The WebQuest is a student-centered, inquiry-oriented and project-based approach for teaching and learning that students use Web resources to learn school topics. This article reports on the design, implementation and evaluation of a WebQuest teaching approach for chemistry classroom teaching in improving the critical thinking of high school students. A pre- and post-test design was used where 4-month long-term WebQuest teaching approach with five chemical topics was offered to 50 high school students aged ranged from 16 to 17 years in Xidian Middle School attached to Xidian University in Shaanxi province of China. The California Critical Thinking Disposition Inventory (CCTDI) and the California Critical Thinking Skills Test (CCTST) were employed as data collection tools. Both CCTDI and CCTST scores of the participants showed significant differences ($p < 0.05$) between before and after WebQuest learning. The subscale scores of CCTDI showed significant differences in all aspects of dispositions toward critical thinking except open-mindedness and maturity. For CCTST subscales, the scores showed significant differences in analysis and evaluation but in inference. These findings add to the evidence that integrating Webquest into science classroom teaching might be an effective way to develop high school students' critical thinking.

KEYWORDS

Web-Based Learning; Critical Thinking; Computer-Based Learning; WebQuest; Chemistry Classroom Teaching

Cite this paper

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