The Influence of Web-based chemistry learning on students' perceptions, attitudes, and achievement

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The goal of this study was to investigate whether integrating a website into chemistry teaching influences 10th grade students' perceptions of the classroom learning environment, their attitudes regarding the relevance of chemistry, and their understanding of the concept of *chemical bonding*. Two groups participated in this study: an experimental group and the control. The study was conducted during two consequent academic years, 2004 and 2005. The teachers in the experimental group were asked to implement four relevant activities from the website that was developed, all dealing with the concept of *chemical bonding*. Quantitative tools of the study included: *A Chemistry Classroom Web-Based Learning Environment Inventory* to assess the relevance and attitudes, a *Feedback questionnaire* that examined the students' response after performing each of the website activities, and *an achievement test* that assessed their knowledge and understanding of the concept of *chemical bonding*. We found that the experimental group outperformed the control group significantly in most of the research categories. This led us to conclude that the web-based learning environment has potential to enhance the comprehension of chemistry concepts, students' attitudes and interests and to increase students' awareness regarding the relevant aspects of chemistry to daily life.