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Improving chemical literacy through the open inquiry teaching: A Thai case study

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Abstract

This article investigates the effect of the open inquiry teaching approach on the chemical literacy of undergraduate students at Northeastern University (Khon Kaen, Thailand). The target group was 100 first-year engineering students, who were divided equally into four groups, with two serving as control groups and the other two as experimental groups, in accordance with quasi-experimental research design. Research instruments include a chemical literacy test and open inquiry-based lesson plans. Data was analysed using One Way Analysis of Variance and orthogonal contrasts. Results show that there is a statistically-significant difference between the experimental groups' gain literacy scores and the control groups' gain literacy scores, suggesting that open inquiry teaching is more effective than traditional teaching at improving students' chemical literacy and should therefore be promoted.

Keywords: Chemical literacy, The open inquiry