

Asawin Thanapud 2015: The Development of Grade-10 Students' Scientific Argumentation Skills through Socioscientific Issues Approach in Natural Resources Unit. Master of Education (Science Education), Major Field: Science Education, Department of Education. Thesis Advisor: Assistant Professor Sasithep Pitipornatapin, Ph.D. 163 pages.

This classroom action research was aimed to develop grade 10 students' scientific argumentation skills through socioscientific issue approach and to identify the best practice for this teaching approach. The participants were 12 grade 10 gifted students from an extra large high school in Bangkok. The research instruments included scientific argumentation skills questionnaires, informal interview logs, students' worksheets, students' journal entries and teacher reflective journals. The quantitative data were analyzed by the calculation of frequencies and percentages and qualitative data were analyzed by content analysis. The findings showed that most of the students developed their scientific argumentation skills from 16.67 to 83.33 percent in level of excellence. Moreover, they also developed in each component of argumentation: claim; warrant; evidence; counter argument; and supportive argument. The component that most students developed was enough evidence for support warrant. The component that few students developed was supportive argument.

In addition, the findings also showed that the best practice for SSI-based teaching were: 1) In issue stage, using VDO clips about SSIs for motivating students' interest, asking related questions for small group discussion, as well as presenting of SSI and following with the whole discussion could increase students' identification of claims and warrants, 2) In the exploration stage, using learning center in school, planning group work before searching information, and evaluating the reliability of their data helped students to select appropriate evidence to support their claims and warrants, 3) In the argumentation stage, the debate and role play were activities that could equally practice students to make arguments in the classroom, and 4) In the decision making stage, the whole group discussion helped students to conclude their alternative ways for solving SSI problems and teachers' asking questions could help students' linking SSIs to scientific concepts.

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Student's signature

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Thesis Advisor's signature