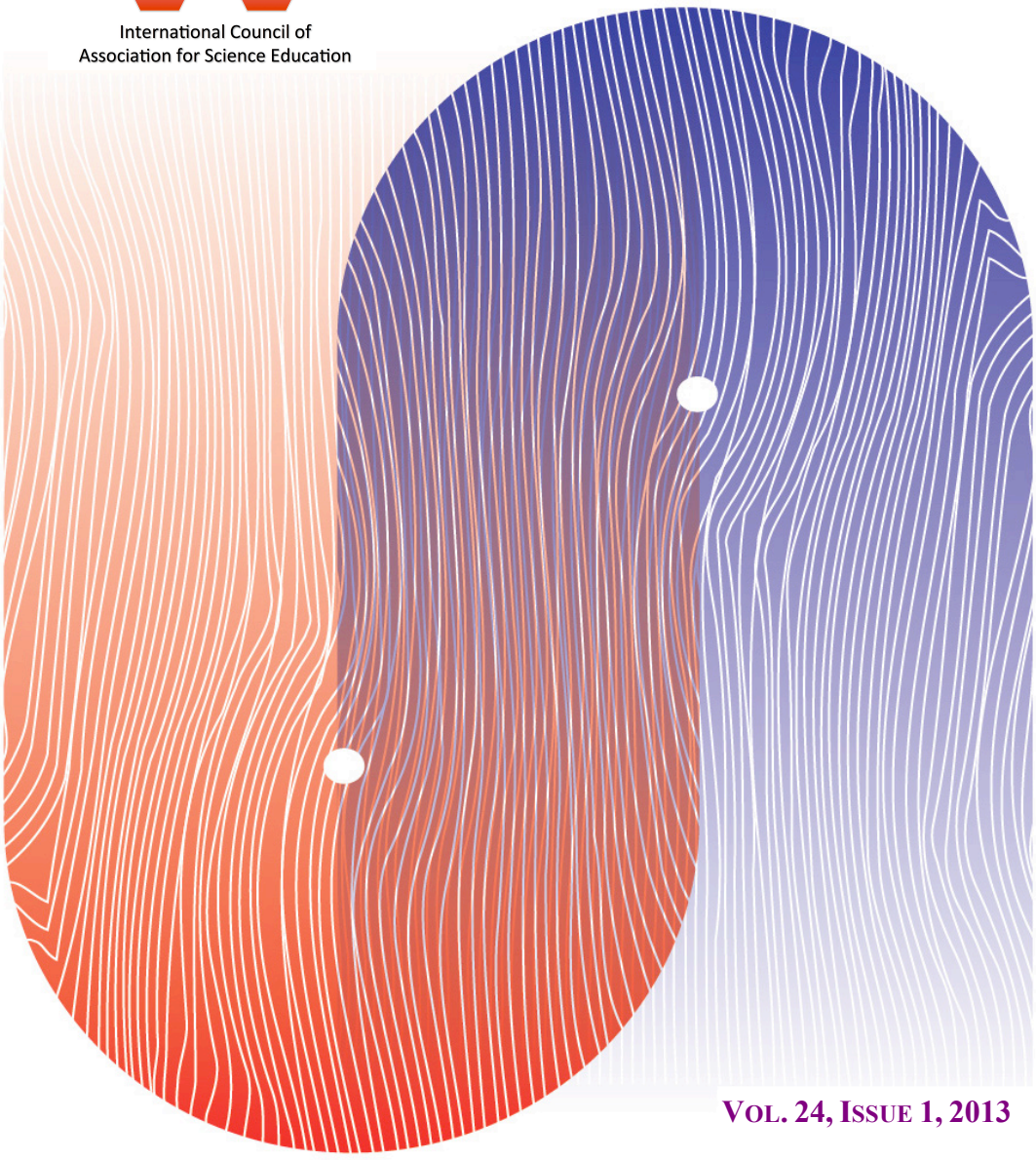
SCIENCE EDUCATION INTERNATIONAL

International Council of
Association for Science Education



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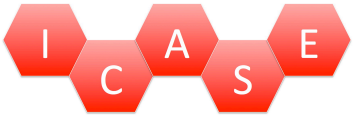

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Supporting and promoting science education internationally

Editorial

Having published online for the last five years, the SEI now appears in a new template designed for better readability starting from this first issue in 2013. Concerning this, the editors are very grateful to Dr. Ekin Boztaş in Ege University, Turkey for his professional contribution of the new cover design. Among the other technical changes that are carefully applied for promoting online distribution, the layout size is reduced both for hardcopies and the Portable Document Format (PDF) displayed on mobile devices.

This issue includes five papers from six different countries. The first three papers provide persuading ideas for enhancing science teacher education through scientific inquiry, natural of science (NOS), and authentic science coursework. Gilbert from Australia reports the supportive use of a "wonder list" among preservice primary teachers. In his postgraduate course, Science for Elementary Education, the course-takers followed the wonderment framework that includes open-end wonder lists (see their ingenuity in the appendices), concept maps, associated research projects, and final reports plus presentations. Three focused pre-service teachers gave favorable responses toward learning science content after exposure to the series of wonderment activities.

The second paper concerning science teacher education is presented by Wan and Wong from China, examining teacher educators' views about nature of science. While 12 out of 24 educators preferred the nature of science instruction infused within a teacher diploma program, the others chose to organize a separate module about NOS. The authors argue that the infusion of NOS is based on the influence of the former Soviet Union and Vygotskian theory that prevailed in the country. They recommend raising the importance of NOS by promoting this through a separate module.

The third paper about science teacher education is written by Macugay and Bernardo based on a survey of 305 Filipino science teachers. Their focus is on authentic science coursework as an important factor in deciding teachers' pedagogical beliefs. Leaving aside the amount of scientific knowledge, they suggest more science coursework is related to a stronger belief that teachers should

support student learning and a weaker belief that learning is limited by student ability.

Our interest on science teacher education is echoed by Sothayapetch and Lavonen's comparative study of Thai and Finnish science curricula in the perspective of the PISA scientific literacy framework. This content analysis reveals that the Thai curriculum focuses on closer approaches to the PISA framework. The authors attempt to answer this conflicting result—Finnish students scores higher than the Thai in PISA while the Thai curriculum is more relevant—by emphasizing insufficient professionalism among science teachers in Thailand.

Working with middle school students, the final paper by Knezek and Christensen from USA adds additional evidence that students improve their creative tendencies and perceptions about STEM through inquiry-based activities: standby power (or *Vampire Power*) observation. After conducting the activities, the authors measured effect sizes (see Figure 3) to illustrate that female students developed the four elements of STEM perceptions more than male students. This pre-post research design is efficiently incorporated with a gender factor, which could be beneficial to other project-led studies.

As shown in the five papers discussing scientific inquiry, wonderment, natural of science, science course work, and science curricula, the SEI is encouraging researchers in the world to share their empirical and innovative evidence of educational development in various science education research areas.

Minkee Kim, PhD
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