21ST CENTURY TEACHING AND LEARNING IN SCIENCE

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Science is part of our daily lives, and everywhere we go. Our personal lives are environments in the real world that allow us to learn science and understand science's impact on our lives. Anyone can become interested in science by relating their own everyday experiences to science. Science is an essential top-level topic, and understanding basic science concepts improves the awareness of the content of the teacher and students. Teachers need to understand the subject matter thoroughly and flexibly to help students construct useful cognitive maps, connect one idea to another, and discuss alternative conceptions to teach today's science concepts. Teachers need to see how things are connected to everyday life. This kind of understanding will provide a basis for understanding the pedagogical material that helps teachers make ideas available to others and be aware of their conceptual problems (Chavan, 2013). The 21st-century teaching and learning science education concerns teaching and developing thinking skills, encouraging collaboration, enabling technologies, encouraging reflection, developing information, media, and technologies fluency, teaching using project-based learning, developing problem-solving, and assessing learning.

The 21st-century teaching and learning science education were characterized by impressive information technology advances (Mahajan et al., 2012). In particular, the advancement of computer and internet technology has revolutionized all facets of human activities over the years. Slowly, incorporating these innovations into social and political systems makes human relationships more dependent on these technological advances. To help them in their lesson plan, teachers can access online information, improve the content of their lesson notice, learn new teaching strategies and methods, and update
their pedagogical and subject material awareness (Bhatti, Ahmad, and Khan, 2014). On the other hand, learners can access valuable knowledge that can help expand their comprehension of the quality of subjects they are studying in schools (Rosnaini and Mohd Arif, 2010). Online social media networks provide local and international forums for teachers and learners with common teaching and learning science forums and extend communication and discussion between learners and teachers and learners outside the classroom (Holcomb and Beal, 2010).

These rapid changes in the world are redefining the diverse skill sets that students need to be adequately prepared to engage and contribute to today's society, including technological progress, scientific innovation, increased globalization, shifting labor demands, and economic competitiveness pressures (Levy and Murnane 2005; Stewart 2010; Wilmarth 2010). Within the context of science education, the need for and value of 21st-century skills and advocates for the science education community to support 21st-century skills compatible with best practices in a science education framework.

References:


