Chemical Thinking and Social Justice

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Chemical thinking is the application of chemistry knowledge and practices with the intent to synthesize, analyze, and transform matter for practical purposes. Scientifically literate individuals, as well as chemists, must rely on chemical thinking to answer practical questions, such as how to dispose of batteries, what containers are safe for storing different foods, and what fuels impart least damage to the planet. A chemical thinking perspective on teaching chemistry can promote social justice when it connects the practical aims of chemistry to people’s lived experiences and their motivations to improve the human experience. The chemical thinking framework is a discipline-specific nature of science theory that organizes the discipline of chemistry in a way that learners’ use of chemical thinking can be mapped and their learning growth can be measured. The framework will be described through examples of teaching from this perspective that illustrate promotion of social justice. Representative findings will be shared which are drawn from empirical studies of the benefits-costs-risks question (What are the consequences of using and producing matter?), one of the six core disciplinary concepts of chemical thinking. Implications for the design and implementation of learning activities will be discussed.

Information
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