

“BIG BOOM + FIRE = IRON” – EXPERIENCES FROM SYSTEMS THINKING ORIENTED CHEMISTRY OUTREACH IN PRIMARY AND SECONDARY SCHOOLS

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Systems thinking tools and approaches have been proposed as a means to holistically integrate authentic contexts of practice within education settings. Systems thinking can also play a community engagement role in re-positioning the public image of chemistry, from one that currently suffers from the consequences of large-scale uptake of its previous successes such as plastic waste and polluting industrial plants, to one that has embraced the principles of sustainability.

Despite notable recent publications and a journal special issue on re-orientating chemical education to utilise systems thinking for this purpose (Mahaffy et al., 2018), thus far few systems thinking focussed resources, at any education level, have been reported. In this presentation, the design and evaluation of a recent systems thinking oriented chemistry outreach event (Periodic Table of Sustainable Elements) is described. The whole-day outreach event was conducted in seven low socioeconomic status schools involving over 1000 students in regional and rural Victoria. The event involved a series of hands-on practical activities, focussing on chemistry and its relevance to sustainability, and mentoring of upper secondary chemistry students by university student volunteers. Student and teacher perspectives collected through pre- and post-event surveys and teacher interviews have been analysed and will be presented.



Figure 1. School activity example at chemistry outreach event

REFERENCE

Mahaffy, P. G., Brush, E. J., Haack, J. A., & Ho, F. M. (2018). Journal of Chemical Education Call for Papers- Special Issue on Reimagining Chemistry Education: Systems Thinking, and Green and Sustainable Chemistry. *Journal of Chemical Education*, 95, 1689-1691.

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