

Future Perspectives of Chemistry Education Five Hundred Years after Western Colonization in Sri Lanka

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During five hundred years of western colonization, education systems in Sri Lanka evolved to mirror the traditional education systems of Britain. The teaching strategies employed by teachers and the structure of schools in Sri Lanka, reflected such a traditional, Anglo Saxon approach to pedagogy. In post-colonial Sri Lanka we believe that it's time to move towards a different approach to pedagogy that more closely aligns with modern society in Sri Lanka and with the interconnected world in which we now live. This paper reports on the outcomes of a study that focuses on teaching in chemistry - in particular, the topic of chemical equilibrium. It discusses the influence of modern information and communication technology (ICT), how ICT allows teachers and students to work in different ways and the implications for teaching chemistry in Sri Lankan schools.

Two studies were designed and conducted within New South Wales (NSW), Australia as models that might transfer to Sri Lanka. Study One involved five experienced chemistry teachers and forty five chemistry students in HSC classes. Study Two involved eight pre - service science teachers and sixty year-eleven chemistry students. The initial trial of the commercial product SMV: CHEM® by experienced teachers in Study One revealed that they spent little preparation time on lessons as they were busy with timetables, syllabus content, and did not feel comfortable with computer-based technology. As a result, they relied on teacher demonstration to present the software. In Study Two, pre-service science teachers had the opportunity to unpack the resource elements within SMV:CHEM® and VisChem® software and consider the design of lessons that would engage a wider range of teaching strategies, including the use of familiar analogies, simulations, hands-on observation coupled with computer- based multiple representations. Pre-service teachers attempted to extend students' understanding about chemical equilibrium (obtained from different representations) by applying the concept to a wide variety of everyday situations involving environmental systems that are in equilibrium.

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