

**TEACHERS' PERCEPTIONS ON UTILIZING SMALL-SCALE CHEMISTRY  
ACTIVITIES TO TEACH SECONDARY SCHOOL  
SCIENCE EDUCATION IN SRI LANKA**

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The importance of a robust science education framework in Sri Lanka is widely recognized, yet several challenges hinder its effectiveness. This study explored teachers' perceptions of using small-scale chemistry (SSC) activities in science education through a mixed-method approach by training secondary school science teachers and lecturers from the National Colleges of Education (NCoE). The study aimed to foster attitudinal change toward conducting practicals using improvised laboratory equipment and minimal chemicals. A sample of 395 teachers from all nine provinces of Sri Lanka and 23 NCoE lecturers participated in the training, which introduced five SSC activities through a specially designed educational toolkit. The properties of oxygen gas, acid-base indicators, gas diffusion, electrolysis, and carbonate-acid reactions were conducted using the educational toolkit. Data were collected through questionnaires, focus group discussions, and semi-structured interviews. Quantitative data were analysed using SPSS version 26.0, while qualitative data were thematically analysed to provide insights into the challenges and opportunities associated with SSC. The findings indicate that most participants were unaware of SSC before attending the training. However, they viewed it positively after the training. While recognizing the importance of SSC as a remedial measure for the shortage of resources and laboratory facilities, the participants expressed a keen interest in incorporating the SSC approach into their current teaching and learning activities. However, the study highlights significant challenges to SSC adoption, including insufficient training, lack of professional development, and limited access to materials. The study recommends implementing professional development programs to equip teachers with SSC skills, integrating SSC activities into the science curriculum, and ensuring adequate resources. Further research would focus on evaluating the long-term impact of SSC on students' performance and its applicability in various educational contexts across Sri Lanka.

**Keywords:** Education tool kit, Secondary science education, Small-scale chemistry activities