



DEVELOPMENT AND VALIDATION OF LABORATORY ACTIVITIES IN HIGH SCHOOL CHEMISTRY BASED ON SOCIETAL ISSUES

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ABSTRACT – Laboratory works are valuable means to bring into focus, to have students reflect on the meaning and application of chemistry concepts. Chemistry exists in the society and should contribute to the maintenance and aspirations of culture. The inclusion of science-based societal issues in chemistry laboratory activity is an important factor in the reform of science education. Chemistry laboratory experiences should allow students to analyze social problems and understand how science, particularly chemistry is relevant to their personal lives. This paper presents a study on laboratory activities that utilized the Input-Process-Output model of instrument development. The laboratory activities developed included science-based societal issues related to water quality and safety, waste management and conventional energy resources. The study utilized focus group discussion (FGD) to obtain relevant information on science-based societal issues in the community. From the identified science-based issues, three (3) laboratory activities were developed integrating the three (3) levels of science-technology-society (STS) activity introduced by Weisenmayer and Rubba (1999). The results of the study show that the laboratory activities incorporating science-based societal issues provides real life applications of lessons learned in chemistry classes. Students are made more aware and re-active of the different issues in their community that needs immediate attention. Qualitative evaluation of high school and college science teachers showed that the laboratory activities were valid in terms of content and structure.

Keywords: laboratory works, societal issues, science-technology-society approach



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