

Utilization of Chemistry Laboratory Facilities and Academic Performance of Criminology Students in Forensic Chemistry and Toxicology: Basis for a Laboratory Utilization Improvement Plan

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Abstract

Chemistry laboratory facilities provide students with opportunities to apply theoretical knowledge through practical laboratory experiences, particularly in science-related disciplines such as Forensic Chemistry and Toxicology. This study assessed the utilization of chemistry laboratory facilities and the academic performance of criminology students in Forensic Chemistry and Toxicology at a selected private college. Specifically, it determined the level of laboratory utilization in terms of the use of laboratory equipment, the conduct of laboratory experiments, and the integration of laboratory activities in instruction; described the students' academic performance; and examined whether a significant relationship existed between laboratory utilization and academic performance. The study employed a quantitative descriptive-correlational research design involving 289 criminology students enrolled in the course. Data on laboratory utilization were gathered through a researcher-developed questionnaire that underwent expert validation and pilot testing for reliability, while academic performance was obtained from official class records. The data were analyzed using the statistical tools; Weighted Mean, Standard Deviation, and Spearman Rank-Order Correlation at the 0.05 level of significance. The results showed that chemistry laboratory facilities were highly utilized across the three areas of assessment, while the students obtained satisfactory academic performance in Forensic Chemistry and Toxicology. However, no significant relationship was found between the utilization of chemistry laboratory facilities and students' academic performance. Based on the findings, a Proposed Chemistry Laboratory Utilization Improvement Plan was developed to address identified areas for improvement in laboratory resources, instructional practices, laboratory scheduling, and continuous evaluation. The study concludes that while laboratory facilities support effective laboratory instruction, academic performance may be influenced by factors beyond laboratory utilization alone.

Keywords: *Science Education; Chemistry Laboratory Utilization, Academic Performance, Forensic Chemistry and Toxicology; Quantitative Descriptive-Correlational Research, Weighted Mean, Spearman Rank-Order Correlation; Philippines*

