INSTABRIGHT e-GAZETTE
ISSN: 2704-3010
Volume VIII, Issue II
November 2026
Available online at https://www.instabrightgazette.com

LOCALIZED CHEMISTRY ACTIVITIES USING LOCAL HOUSEHOLD MATERIALS: BASIS FOR GUIDED LEARNING LABORATORY ACTIVITIES

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ABSTRACT

Schools play a crucial role in fostering scientific literacy and practical skills essential for national development. Poor performance in science subjects, particularly Chemistry, discourages students from STEM careers and limits innovation. The K to 12 curriculum in the Philippines emphasizes competency-based learning and real-world applications to prepare students for global challenges. Yet, many public schools lack adequate laboratory equipment and chemicals, hindering effective Chemistry instruction. Studies underscore the value of contextualized, low-cost activities using everyday materials to enhance conceptual grasp, motivation, and retention in Chemistry. This study employed a descriptive-correlational quantitative design to assess the impact of localized Chemistry activities using local household materials as the basis for guided learning laboratory activities. The respondents were sixty (50) Grade 12 STEM students from a public high school. Key findings include: Most respondents were 16 years old (54%), with females comprising 28 or 56%. Respondents strongly agreed on the benefits of these activities in areas of material availability, safety, relevance to daily life, and skill development. Significant positive correlation existed between activity implementation and students' Chemistry performance. No significant differences were

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found in perceptions based on gender or prior exposure to labs. The alternative laboratory activities, featuring 12 activities, was developed by the researcher informed by the study's outcomes to support resource-constrained classrooms.

Keywords: *Localized Chemistry Activities, Learning Laboratory Activities, Local Household Materials, Practical Chemistry Experience, Learning Engagement, Cognitive Development, Students' Scientific Inquiry, Learning Outcomes, Instructional Materials, Student's Prior Knowledge, Teacher's Facilitation, Educational Settings and Resource Availability*

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