

CHALLENGES ENCOUNTERED IN USING LABORATORY AMONG SHS STUDENTS: BASIS IN CRAFTING MANUAL AND VIDEO PRESENTATION

ABSTRACT

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Laboratory sessions are integral to scientific education, enhancing theoretical understanding and fostering critical thinking. However, these sessions present challenges such as intricate procedures, time constraints, limited resources, safety concerns, and group-work dynamics. These factors can impede students' grasp of scientific concepts, execution of experiments, and confidence in laboratory skills. This study investigates these challenges among senior high school students and identifies targeted interventions—such as improved instructional strategies, upgraded facilities, and enriched learning environments—to support effective laboratory learning. This study employs a descriptive research design involving 80 Grade 12 students in the Home Economics strand at Bestlink College of the Philippines. Participants were selected through purposive random sampling. Data were collected using a structured survey questionnaire that probed the nature and extent of challenges encountered during laboratory sessions. Responses were analyzed using mean scores to determine the relative impact of each challenge on student learning. Findings indicated that time constraints (mean = 3.10) significantly limited students' ability to complete tasks, while complex procedures (mean = 2.95) tended to overwhelm participants. Limited resources (mean = 3.27) restricted experimentation, and safety concerns (mean = 2.96) due to inadequate precautions increased risk and reduced participation. A lack of practical experience (mean = 3.16) hindered the connection between theory and practice, and insufficient equipment (mean = 3.13) compromised experimental accuracy. Additionally, low engagement and motivation (mean = 3.13) correlated with reduced participation and lower academic performance. The study demonstrated that female students aged 18 and above comprised the majority of participants. Students emphasized that effective laboratory operations depended on well-maintained equipment, cleanliness, and strict adherence to safety protocols. The results highlighted the need for enhanced resource allocation, reinforced safety measures, refined instructional methods, and engaging activities. The development of comprehensive laboratory manuals and video tutorials was found to be a promising approach to standardize best practices and foster continuous improvement, thereby creating a safer and more effective learning environment.

RECOMMENDED CITATION

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