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The Use of Charcoal and Isopropyl Alcohol as Alternative Ink for Whiteboard Markers: A Comparative Analysis between the Innovation and Commercialized Ink

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Abstract

Whiteboard marker has been used extensively due to its perceived safety compared to chalk. Recent reports, however, showed that commercialized ink also imposes health risks in addition to its expensiveness. This study aims to innovate an ink using charcoal and isopropyl alcohol in comparison to the commercialized ink. Quantitative-developmental approach using quasi-experimental method was conducted to determine and compare the acceptability rates of innovated ink vis-a-vis commercialized ink considering color intensity, consistency, and smell as parameters for assessment. A total of 50 randomly selected student-respondents composed the experimental and comparison groups. Development of innovated ink was basically done through pulverizing the charcoal and pouring the isopropyl alcohol until the black liquid material is formed. Results revealed the higher levels of acceptability rates from experimental group indicating the usability and feasibility of the innovated ink compared to the commercialized ink in the comparison group following the statistical analysis of color intensity, consistency, and smell. This was further supported by the statistical difference in the mean of responses ($p < 0.05$) connoting the effectiveness of the innovation over commercialized ink grounded on the parameters tested. This study recommends to further pulverize and mix the charcoal to obtain the intended utmost result, and to test the innovation in printer cartridges. The study concludes the effectiveness of the innovated ink as an alternative ink to whiteboard markers.

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