

DESIGNING OF OPTICS EXPERIMENT FOR VISUALLY IMPAIRED STUDENTS IN PHYSICS LEARNING.

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- **Abstract:** Students have long viewed Physics as a difficult subject because some topics in physics are abstract. Therefore, physics teaching has depended mainly on visual instruction, experiments must be performed, and results correlated with theoretical values. Visually impaired students have no visual input at all, so access to optics knowledge is so difficult. This research focuses on designing an optical experiment kit illustrating several optical phenomena to help visually impaired students learn by using other senses such as touching and hearing. The laser rays from the light source are detected by photoresistor modules and signaled to visually impaired students through the sound emitted by the siren. Simultaneously, some embossed figures were created to illustrate clearly the light ray transmission lines. Additionally, a set of audiobooks were created to explain more on space and images demonstration to detail optical phenomena for the visually impaired students, which supports the visually impaired students in obtaining knowledge in current Braille textbooks. The results show that the experimental kit guaranteed the educational science for visually impaired students; the kit's structure was neat and easy to practice, accurate, and illustrated the phenomenon clearly; the illustration of the transmission of light rays through thin lenses was creative and effective. The research has a profound human value and contributes to enriching physics teaching devices for visually impaired students.
- **Keywords:** Physics, Visually impaired, Braille textbooks