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USE OF STUDENTS' DRAWING TO ASSESS UNDERSTANDING OF THE LIGHT CONCEPT

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Assessment is an integral part of teaching learning process. Especially in teaching physics which includes more abstract concepts it is essential to assess students' understanding. In considering different abilities of students, teachers need to use different techniques of assessment in their classrooms. The aim of the research is to use students' drawing to assess grade eight students' understanding of light concept. Grade eight science syllabus, teacher instructional manual and grade eight science textbook were studied to understand the subject matter related to light concept. A written test with eight questions was administered among 212 grade eight students in Kandy educational zone. Each question of the test consisted of two parts; drawing and written explanation. Data obtained from students' drawings in each question and their explanations were qualitatively and quantitatively analyzed to assess their understanding of concepts related to light; path of light, vision, mirror reflection, refraction and images of plain mirror. A questionnaire was administered among 52 randomly selected teachers to understand the assessment techniques used by teachers in assessing understanding of science concepts. Data obtained from teacher questionnaire were analyzed with the use of the SPSS statistical package. It was evident from the analysis of students' drawings that less than 37% students provided correct drawing for each question. Furthermore less than10% students were able to provide both correct diagram and explanation for the given questions. Drawings of students also showed that students possessed large number of misconceptions related to path of light, vision, mirror reflection and refraction. Responses to teacher questionnaire revealed that most of the teachers (42%) use practical in assessing science knowledge of students. Structured essay (23.08%) and presentations (5.77%) were another two most common methods used by teachers. Teachers' responses to the questionnaire showed that 96% of teachers use drawing for evaluating science knowledge of grade eight students. However, students provided a number of incorrect drawings for each question. Teachers' responses further revealed that spending more time to draw diagrams correctly and drawing according to a scale were two most common problems encountered by teachers in using drawing to assess students. Use of students' drawing is an effective technique not only for assessing science knowledge but also for identifying students' misconceptions. Therefore students should be provided opportunities to draw diagrams and write explanation for their drawing when administering written tests.

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