

SP - (16014) - DATA SENSEMAKING DEMANDS OF STIMULUS-BASED QUESTIONS IN STANDARDISED PHYSICS ASSESSMENTS

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Short Abstract

Stimulus-based questions in science assessments typically require students to make sense of data presented as informational text, picture, table, or graph in order to answer the questions. However, there is a lack of a tool for analysing data sensemaking demands of stimulus-based questions based on the type and number of data representations, as well as the data reasoning process involved. To meet this need, this study proposed a data sensemaking demands coding scheme for analysing stimulus-based questions. Preliminary findings from analysing stimulus-based questions in Singapore's national physics examinations for tenth-graders as well as think-aloud interviews with two preservice physics teachers suggest researchers' expected data sensemaking demands (based on coding scheme) agreed fairly well with preservice teachers' enacted data sensemaking when answering a stimulus-based question. Also, moderate agreement was achieved on the coding scheme between two raters. Thus, proposed coding scheme has demonstrated reasonable response process validity and reliability. With further evaluation and revision, proposed data interpretation coding scheme has the capacity for analysing biology and chemistry stimulus-based questions, in addition to physics questions.