

TOPICAL STRANDS AND ABSTRACTS: PAPERS AND POSTERS

FOUNDATIONS FOR LANGUAGE AND SCIENCE LITERACY RESEARCH: PHILOSOPHICAL, PSYCHOLOGICAL, LINGUISTIC, AND CULTURAL

This conference theme focuses on the nature and purpose of science discourse, cognitive and metacognitive processes involved in the derived and fundamental senses of science literacy, and the theoretical models of cognition, reading, writing, and argumentation, the socio-cultural dimensions of science instruction, and gender perspectives of language and science literacy.

III-K

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Student Learning of Physics Concepts Employing Verbal and Written Forms of Expression in Comparison to Other Representational Modes

Physics instruction includes a variety of representational modes including diagrammatic, mathematical/symbolic, and "verbal" (written passages employing ordinary language). Instructors attempt to assess students' understanding by observing their problem-solving performance employing this same variety of representational modes. An important issue investigated is possible discrepancies in student learning abilities when using verbal and written forms of expression in comparison to diagrammatic and mathematical forms. Another issue being explored is the accuracy of assessment of student learning via students' written descriptions of their reasoning, in comparison to their mathematical/ symbolic problem-solving performance.

