PRİMARY TEACHERS' TALK AND MODALİTY USE İN BRUNEİAN SCİENCE CLASSROOMS

Roslinawati Mohd Roslan
Sultan Hassanal Bolkiah Institute of Education, Universiti Brunei Darussalam
Brunei Darussalam

There is now a consensus that multiple modalities can improve science learning and that science teaching and learning is multimodal. These modalities include verbal language, images, gesture, materials, diagrams and even mathematical conventions. Research suggests that teachers play a significant role in communicating science concepts to students through the use of various modalities. However, teachers need to know which modes are most apt to construct an understanding of the science concepts they wish to teach. There is also a need for teachers to use talk effectively in communicating science concepts. Research on dialogic teaching can improve the way teachers use talk to encourage students to participate in classroom discussion. This study explored ways that primary teachers use talk and modalities in science classrooms. One of the goals of this study was to identify ways that these teachers use talk along the authoritative-dialogic continuum using a framework developed by Mortimer and Scott. The second goal of the study was to identify modalities used by teachers in teaching science in the primary classroom. The third goal was to identify how primary teachers select, sequence and explain the different modalities in the science classroom. This study describes a multiple case study inquiry of year 4 and 5 science classrooms in 3 primary schools in Brunei Darussalam. Five primary teachers participated voluntarily.

Observations, field notes and video recordings were taken of two lessons delivered by each teacher while teaching various science concepts. Transcripts of teacher-student interactions were developed from the 10 lessons. The communicative approaches utilized by the teachers, as categorized by Mortimer and Scott, and the modalities employed were coded. Episodes with unique characteristics of discourse around modalities were identified. The findings describe the nature and incidence of teachers' patterns of discourse in terms of IRE (Initiation-Response-Evaluation) patterns of interactions, types of prompts, and types of communicative approaches used in each episode of the teacher's lessons. The incidence and type of modalities used in each episode of the teachers' lessons was also coded. The findings revealed that the patterns of discourse and modalities used differed in each teacher's lessons and impacted on the overall quality of the representational practices. Moreover, utilising modalities facilitates the teacher's authoritative discourse in explaining science concepts. The findings show that teachers used a variety of prompts to explore, expand and clarify students' ideas as an alternative to providing simple evaluations of their responses. More specifically, the use of prompting students to give more answers promotes the quality of the dialogic discourse and exchanges with the students by encouraging students' contribution of ideas in the classrooms. This study has implications for the professional development of primary science teachers. There is a need to develop teachers' critical awareness of the appropriate choice, orchestration and connection between discourse and modalities in the science classroom. This study also provides case exemplars of various primary teachers' use of discourse and modalities in the science classrooms.