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Leonie Johann, Magdalena Kersting, Gurø Stødle: *Classroom Interaction, Student Responses and Insects: A Study of Teacher Questioning in Lower Elementary Science Learning Spaces*

Abstract:

Across the educational spectrum, a large body of research has explored the role and potential of teacher questioning practices in dialogic classroom interactions. While existing research provides valuable insights into general aspects of questioning, we still lack detailed understanding of the nuanced relationship between teacher questions, science content, and student responses, particularly in lower elementary biology instruction. To address this gap, our study examines how teachers' questioning practices link to students' reasoning processes during whole-class conversations about insects and bugs. Drawing on Carlsen's sociolinguistic framework and Chin's question-based discourse analysis, we analysed three hours of video data capturing dialogues between a science teacher and two classes of in total 32 lower elementary students. Our analysis revealed three types of teachable moments: 1) Missed Opportunity – Teacher utterances do not prompt articulation of relevant student ideas, 2) Missed Opportunity – Teacher utterances prompt articulation of student ideas which go unnoticed by the teacher, 3) Seized opportunity – Teacher utterances prompt articulation and development of student ideas towards an understanding of key concepts related to insect classification and procedure. Our findings contribute to research on classroom discourse in three ways: a) examining questioning practices in lower elementary biology instruction, b) analysing how science content shapes teacher questions and student responses, and c) providing strategies for teachers to better recognise and utilise teachable moments in science conversations.