

Exemplification in Science Instruction: teaching and learning via examples

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Abstract

Although the practice of giving examples is central to the effective teaching and learning of science, it has been the object of little educational research. The present study attends to this issue by systematically examining the exemplification practices of a university instructor and his students' learning experiences during a biology lecture on animal behavior. It is reported that the science instructor provided students with a series of procedural, conceptual, and analytical examples. Each of these three types of exemplification was characterized by a unique focus, form, and functions (inductive articulation of generalities, deductive application of concepts, social positioning, engagement of learners, and opening classroom dialogue). Further, it is also shown that exemplification can shape student science learning experiences in varied ways (positive and negative) depending on how it interacts with parallel instructional activities such as whole-class discussion, text reading, and student writing. Based on these findings, we argue that conceiving of exemplification simply in terms of conceptual illustration does not do justice to this important dimension of science instruction.