

SYMPAB - (16062) - SECONDARY SCHOOL STUDENTS' TELEOLOGY AND ESSENTIALISM CONCEPTIONS ABOUT GENES

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Short Abstract

Biology education research has shown that deeply-rooted intuitions can impact students' understanding of biological phenomena. One example is design teleology, the intuition that organisms' characteristics were designed for a purpose. Another example is psychological essentialism, the intuition that organisms have fixed essences. Past research has shown that both these intuitions are conceptual obstacles for learning evolution. The current study extends this to the question whether these intuitions are also impediments for learning genetics concepts. To this end, we developed an explicit test and an implicit test with good reliability and validity properties, which are detailed in two other papers already published. In the present article, we describe the results provided by both tests, that were respectively completed by n=565 and n=337 students. Our findings indicate that students exhibit teleology and essentialism misconceptions in the context of genetics, and that they tend to implicitly associate genetics and teleology concepts, as well as genetics and essentialism concepts. Recommendations for genetics teaching are formulated.

Keywords: Conceptions, genetics, intuitions