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Relations Between Anthropocentric Thinking and Biological Misconceptions in Students attending Urban and Rural Universities

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Abstract

Intuitive conceptual systems impact how university students learn formal biological science. One such conceptual system—anthropocentric thinking—involves anchoring our understanding of the biological world in human terms. Prior research indicates that anthropocentric thinking, like other intuitive conceptual systems, can engender misconceptions, but also varies with richness of informal biological experience. To examine the impact of informal experience on anthropocentric thinking and formal biology learning, we assessed students from a rural institution (n=212) and an urban institution (n=188) on their use of anthropocentric reasoning and their agreement with biological misconceptions using both qualitative coding of free responses and quantitative analysis of close-ended measures. Our findings indicate linkages between anthropocentric thinking and misconceptions in both populations, with no clear differences between urban and rural students. This work demonstrates the ubiquity of anthropocentric thinking in US undergraduates and underlines the implications of intuitive thinking for STEM learning.