

SY - (15810) - EVOLUTIONARY THEORY: A REVIEW OF MISCONCEPTIONS AND INTERVENTIONS IN KINDERGARTEN AND PRIMARY SCHOOL

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Short Abstract

Children and adults hold a variety of misconceptions about evolution. Teaching the concept of evolution is therefore a challenge, but also an opportunity to minimize students' misconceptions from early on and, thus, to improve their overall understanding of biology. However, comprehensive overviews of misconceptions held by younger learners and their potential influence on evolution education are rare and limited to early childhood education (Bruckermann et al., 2020). No reviews exist that compile and integrate potential ways for how to effectively deliver instruction on evolutionary theory and its subconcepts of variation, inheritance, reproduction, and selection (e.g. adaptation by natural selection) in the first years of formal education, that is, in kindergarten and primary school. With a systematic review, we pursued two aims. First, we provide a comprehensive overview about naïve conceptions and misconceptions regarding evolution and its subconcepts held by kindergarten and primary school students. The literature about misconceptions frequently emphasizes that it might be beneficial to introduce a conceptual change by targeted intervention from early on. Therefore, second, we also provide an encompassing overview of aspects of instructional approaches which effectively help kindergarten and primary school students to develop their conceptual understanding about evolutionary theory. While the integration of the research literature provides a broad picture of children's conceptions, there are only a few interventions and even fewer seem promising in developing children's understanding of evolution and its subconcepts in the first years of formal education. These results indicate a strong need to develop effective early education interventions on evolutionary theory.