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Teacher Attitudes on Inheritance Diagram Features

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Abstract

Genetic inheritance is a fundamental biological concept that is critical to understanding more advanced biological concepts. Diagrams are frequently used to aid learning in biology, though their presentation varies greatly. We examined teachers' expectations about how different types of diagrams would influence learning outcomes. We chose representative diagrams based on our previous analysis of inheritance diagrams, focusing on features like detailedness, label usage, and diagram type (pedigree vs Punnett square). Science teachers (K-12) were asked to rate how well their students would learn from the presented diagrams in an online survey. Overall, teachers rated the diagrams highly. Most teachers believed Punnett squares would be more beneficial to students than pedigrees. Diagrams with labels and greater detail were also rated higher. We will discuss how these findings relate to previous research on diagram-based learning in science and the prevalence of preferred diagrams in educational materials.