Complex Instructional Analogies and Theoretical Concept Acquisition in College Genetics

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Abstract: This study investigated the role of complex instructional analogies on concept acquisition in an introductory college genetics course. The question of whether concept acquisition can be facilitated by use of complex instructional analogies was addressed using an experimental treatment and control group design. The experimental and control group students were administered a pretest of scientific reasoning and genetics knowledge to be used as covariates. The role of complex analogies on student attitude was also evaluated. Experimental treatment included complex instructional analogies. The control group received expository instruction alone. Achievement was assessed by use of eight weekly quizzes. Significant differences in student achievement were found in favor of the experimental group. However, the analogies did not appear to overcome the need for higher-order reasoning skills as the more skilled experimental group students performed significantly better than their less skilled peers. The attitude survey indicated that the majority of experimental group students believed that analogy-based instruction was beneficial. © 2001 John Wiley & Sons, Inc. Sci Ed 85:665-683, 2001.