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Modeling zombie outbreaks: a problem-based approach to improving mathematics one brain at a time.

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Summary: A great deal of educational literature has focused on problem-based learning (PBL) in mathematics at the primary and secondary level, but arguably there is an even greater need for PBL in college math courses. We present a project centered around the Humans versus Zombies moderated tag game played on the Utah State University campus. We discuss the project in the context of an undergraduate differential equations course and discuss how the project was launched. We highlight examples of students mathematical models along with their verbal and written responses, as well as discussing assessment and student learning. Results are discussed in the context of higher and lower cognition levels as well as mathematical appreciation.

Classification: M95 M65 I75
Keywords: problem-based learning; modeling; logistic equation; differential equations; zombies
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