The Lego® Analogy Model for Teaching Gene Sequencing and Biotechnology

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Web address: [http://www.entm.purdue.edu/extensiongenomics/GAME](http://www.entm.purdue.edu/extensiongenomics/GAME)

Abstract

Research in biotechnology is rapidly advancing; everyday new and exciting discoveries are made, but with this new technology also brings with it many safety and ethical questions as well as the need for education. Alternative teaching methods may help to increase students understanding of difficult concepts in all aspects of schooling including math, science, genetics, and biotechnology. The Genomic Analogy Model for Educators (GAME) is a teaching tool currently under development, made up of three different pieces: (i) a CDROM, (ii) a website and (iii) laboratory exercises. The GAME model uses simple analogies of easily understandable concepts to explain the technical and scientific aspects of modern genomics; the first module is the Lego© Analogy Model (LAM) which focuses on DNA sequencing using the Sanger method and electrophoresis. The purpose of this study was to evaluate the effectiveness of the GAME model on high school students. In addition, the short term effect of the GAME model on high school students’ attitudes about biotechnology was also measured. Results show a positive change in students’ posttest scores after participating in GAME which indicates the effectiveness of this new tool for biotechnology education.