ABSTRACT

We used random forest modeling to explore predictors of virtual middle school science students’ achievement. Using a robust dataset that includes behavioral trace data from the course learning management system and self-reported indicators of students’ academic motivation, we examined which indicators were most predictive of achievement. Framed in the Expectancy-Value Theory of academic motivation, we explored students’ perceived competence for science and their value for science as potential predictors of achievement. We found that trace measures of engagement with the discussion board more strongly predicted final course grade than did indicators of science motivation.

KEYWORDS (we can write whatever we want)

Science, motivation, random forest, machine learning, learning management system, educational success, achievement