Analyzing Data of Data Analysis of Analyzed Data About Exoplanets

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As a student, and a daughter of a science teacher, I want to know what makes students have difficulty: more specifically if the teaching style - audio, visual, or audio-visual styles - affect students' engagement and data retention. I designed three data sources, a recording, a paper, and a video, all with the same information about exoplanets. The only thing that changed was how the students were receiving the data. I used six study groups of real students at my school: two groups for each source. I gave the students consent forms, then ten minutes to observe their respective data source, during which time I measured distractions through an observational tally system. The students then continued with class as normal for an hour, and then were provided with fifteen minutes to complete a student questionnaire that asked them in five questions to rate different aspects of their personal engagement on a scale of one to five. The questionnaire then asked five questions regarding the data presented to them an hour ago, to better quantify data retention. I found that according to my tallied observation system, distractions were highest in the audio-source study groups, and lowest in the visual-source study groups. I can infer that engagement was the inverse. The self-rated engagement was significantly higher for the audio-visual source, and again engagement was the lowest for the audio-source. And finally, the visual source showed the highest quiz scores and most data retention, and the audio source showed the lowest quiz scores. My data proves conclusively that a purely audio source is not the best method of teaching for high school science students. I plan to expand my research and implement my findings in schools across my region for as long as it takes to make change.

Awards Won:

Fourth Award of $500