The title

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Abstract

One or two sentences providing a **basic introduction** to the field, comprehensible to a scientist in any discipline.

Two to three sentences of **more detailed background**, comprehensible to scientists in related disciplines.

One sentence clearly stating the **general problem** being addressed by this particular study.

One sentence summarizing the main result (with the words "**here we show**" or their equivalent).

Two or three sentences explaining what the **main result** reveals in direct comparison to what was thought to be the case previously, or how the main result adds to previous knowledge.

One or two sentences to put the results into a more **general context**.

Two or three sentences to provide a **broader perspective**, readily comprehensible to a scientist in any discipline.

Keywords: keywords

Word count: X

The title

CCS Concepts

Applied computing ~ Education ~ Learning management systems Applied computing ~ Education ~ E-learning Applied computing ~ Education ~ Computer-managed instruction

Keywords

1. INTRODUCTION

In recent years, educational institutions have begun to collect student data (REF). One area of interest is the delivery of fully online instruction, which is becoming more prevalent (REF). Specifically, online education is available for K-12 students who cannot or prefer not to attend a brick-and-mortar school (REF). We seek to examine in the current study the educational experiences of students in online science courses at a virtual middle school.

One meaningful perspective from which to consider students' engagement with online courses is related to their motivation to achieve. More specifically, it is important to consider how and why students are engaging with the course. To consider the psychological mechanisms behind achievement is valuable because doing so may help to identify meaningful points of intervention for educators.

Expectancy-value theory (EVT) is a key motivational framework that explains the reasons that students are motivated to achieve (Eccles et al., 1983). EVT posits that students are motivated to achieve when (1) they perceive themselves to be capable of success (e.g., "expectancy") and (2) they perceive present or future value in the task at hand (e.g., "value"). Two types of value are utility value, which refers to the degree to which students perceive that a given task will be useful to them for some future goal, and interest value,

which refers to the level of interest students have in a given task. In this study, we will consider utility value, interest value, and expectancy for success as predictors of student achievement.

We are fortunate to have a robust dataset which includes self-reported motivation as well as behavioral trace data which was collected from the learning management system. (MAYBE SAY MORE ABOUT THIS IN THE METHOD INSTEAD OF INTRO...? - EAB 9.21.2018)

We investigated three research questions: (1) Is motivation - operationalized as interest value, utility value and perceived competence for science - relatively more predictive of course grades as compared to other online indicators of engagement? (2) Which types of motivation (e.g., interest value, utility value, and perceived competence) is most predictive of achievement? (3) Which types of trace measures (e.g.,

- cogproc - social - posemo - negemo - perscon - n (this is the number of posts) are most predictive?

Notes on Intro from the call

We welcome theoretical, methodological, empirical and technical contributions to all fields related to learning analytics. Related to our special theme the following topics are of particular interest:

- Universal design for learning promotes an inclusive approach to the curriculum – how can learning analytics support curriculum design and revision from this perspective?
- How can analytics be applied in ways that support inclusion and success?
- How can the training of data scientists be made more inclusive?
- What does educational success look like, and how can it be supported?
- How can systematic biases (e.g. related to diversity) in our analytics algorithms be

identified, reflected, and possibly avoided?

A. BACKGROUND AND RELATED WORK

! We might not need this section, I got the idea from a full paper. I think it overlaps with intro

2. METHOD

2.1 Participants

Participants were ###### students enrolled in online middle school science courses in _____years_____.

2.2 Setting / Data Sources

2.3 Procedure

2.4 Data analysis

We used R (Version 3.4.3; R Core Team, 2017) for all our analyses.

For our analyses, we used

3. RESULTS

4. DISCUSSION

*Below are the specific questions from the LAK website that we should reflect on... maybe not just in the discussion, but also in other parts of the work as well.

- What is the most surprising part of your results? Was this surprise shared by the people involved?
- Can you justify why you used one specific methodology instead of an alternative?
- What is the the value and potential impact of your initiative at scale?
- What changes in teaching and learning activities you envision that could be realistically derived from your work?
- What is the target audience for your study?

References

R Core Team. (2017). *R: A language and environment for statistical computing*. Vienna, Austria: R Foundation for Statistical Computing. Retrieved from https://www.R-project.org/