

How do you measure engagement in an in-person classroom in which students are engaging in fully asynchronous instruction with a classroom teacher present?

Broader Project

We sought to better understand students' engagement and support while they are taking an online credit recovery course as part of the research questions:

1. How do high schools structure credit recovery enrollment, administration, engagement, and culturally sustaining pedagogy?
2. To what extent are online credit recovery versus face-to-face enrollment, online credit recovery engagement, and credit recovery policy structures associated with differential learning and behavioral outcomes?

Background

What is credit recovery?

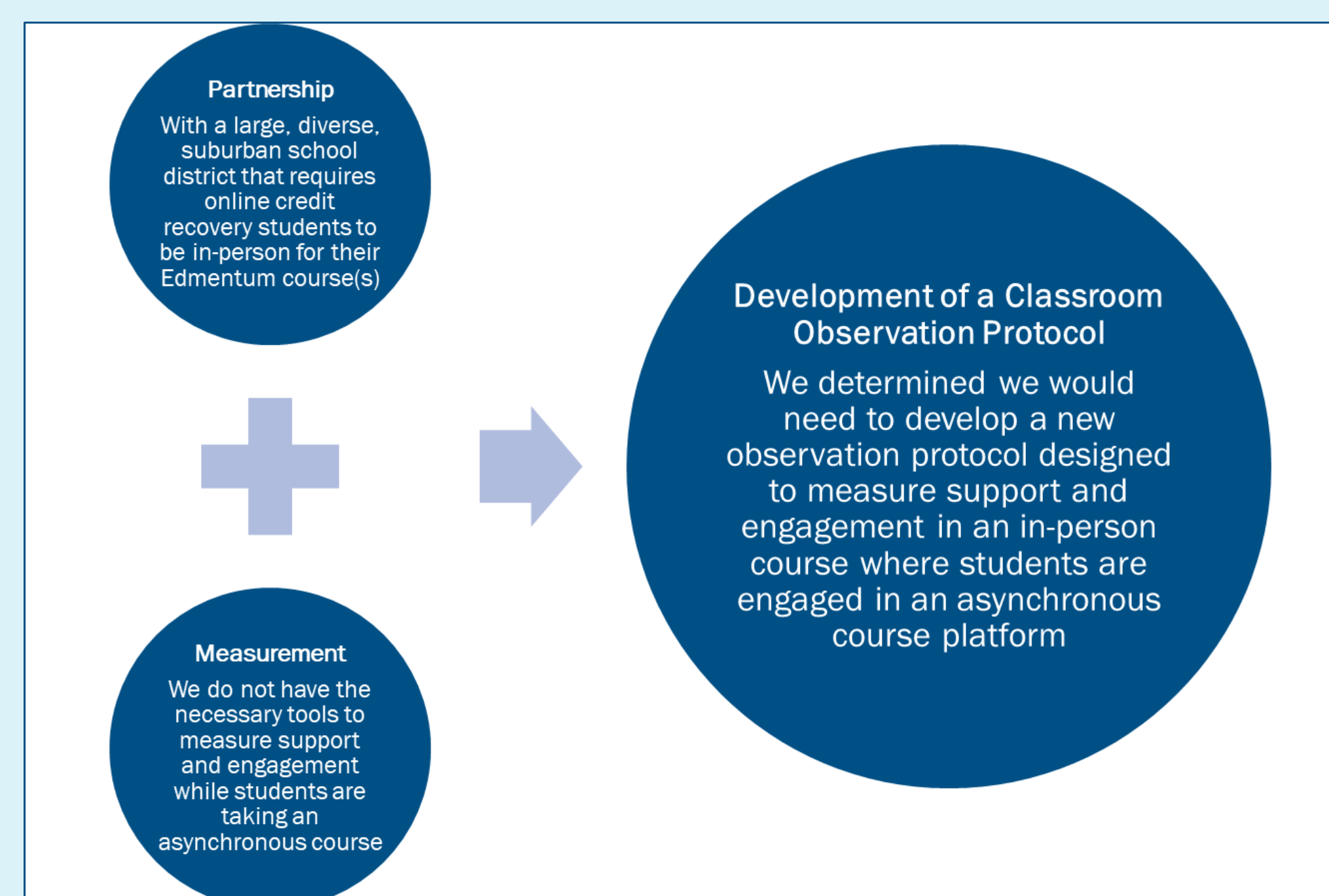
High school students often fail courses they need to graduate high school. In the past, students who failed courses would retake the course in summer school, night/twilight school, or in-full during the school day. Now it is very common to retake courses online, most often through a fully asynchronous platform (Viano, 2021). Popular asynchronous providers include Edmentum, Edgenuity, and Imagine Learning.

Who uses credit recovery?

Credit recovery is for students who failed courses they need to graduate. These students are more likely to be Black, Latine, and low-SES.

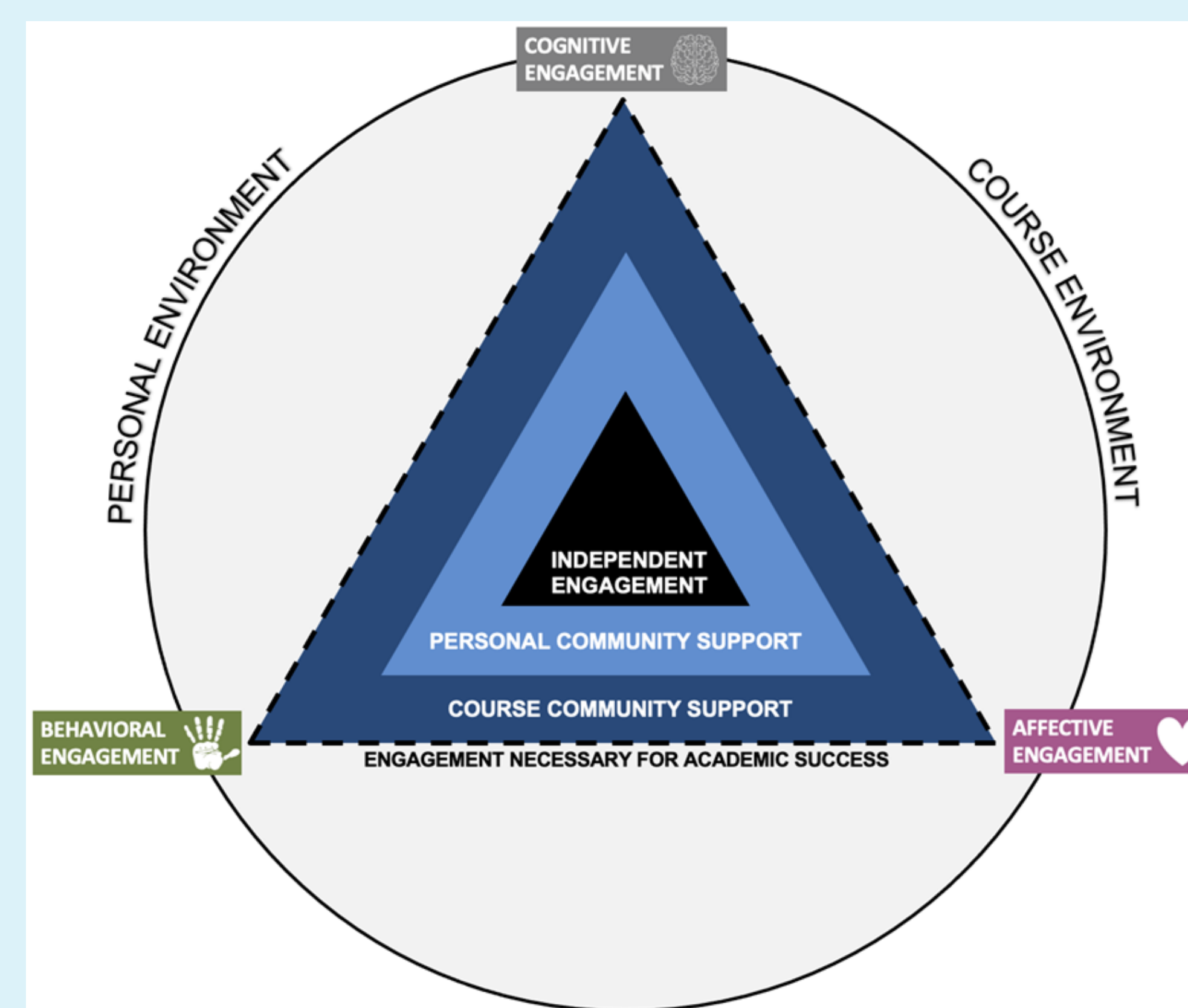
Why study it?

Using online learning for students struggling with course content is controversial, with concerns that the online courses are low quality and students are regaining credit without learning content (Heinrich et al., 2019; Heinrich & Cheng, 2022; Heinrich & Darling-Aduana, 2021; Viano, 2018; Viano & Henry, 2024)



Observation Protocol Development

Sociocultural theory conceptualizes learning through interactions, social norms, and cultural practices (Rogoff, 2003; Vygotsky, 1980; Wertsch, 1998). The Academic Communities of Engagement (ACE) framework integrates a sociocultural perspective on culture and learning (Borup et al., 2020; Lokey-Vega et al., 2018; Zhang et al., 2018). ACE is designed to interpret context and culture of online learning spaces through indicators of cognitive, behavioral, and affective engagement as functions of independent, course, and community support.



Integrated formats and concepts from two observation protocols, the Digital Tool Walk (Burch et al., 2016) and the Child Observation Protocol (Farran, 2014), to assess affective, behavior, and cognitive engagement and support.

Piloting of the Protocol

Summer school for a large, diverse, suburban school district. Summer school met every day, Monday-Friday, over five weeks of summer at centralized locations. All students taking an asynchronous course through Edmentum with a content-expert teacher in the room. Credit recovery and original credit students are in the room.

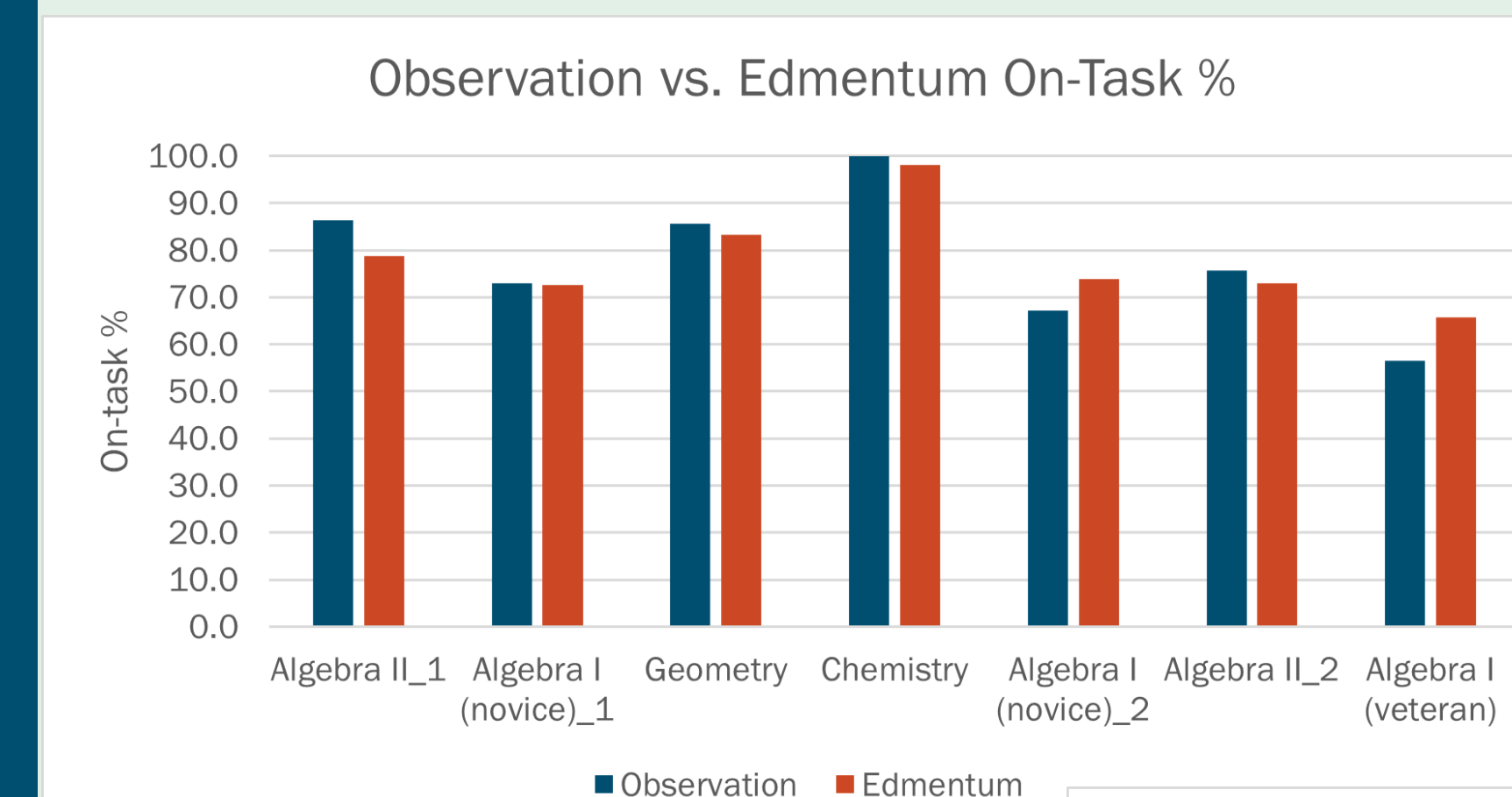
Completed two observations to refine protocol, established high reliability (>0.80).

Completed seven observations using refined protocol: a Chemistry class, Geometry class, Algebra II (2 observations), and Algebra I (3 observations of 2 classes)

Analysis of Pilot Data and Validation of Instrument

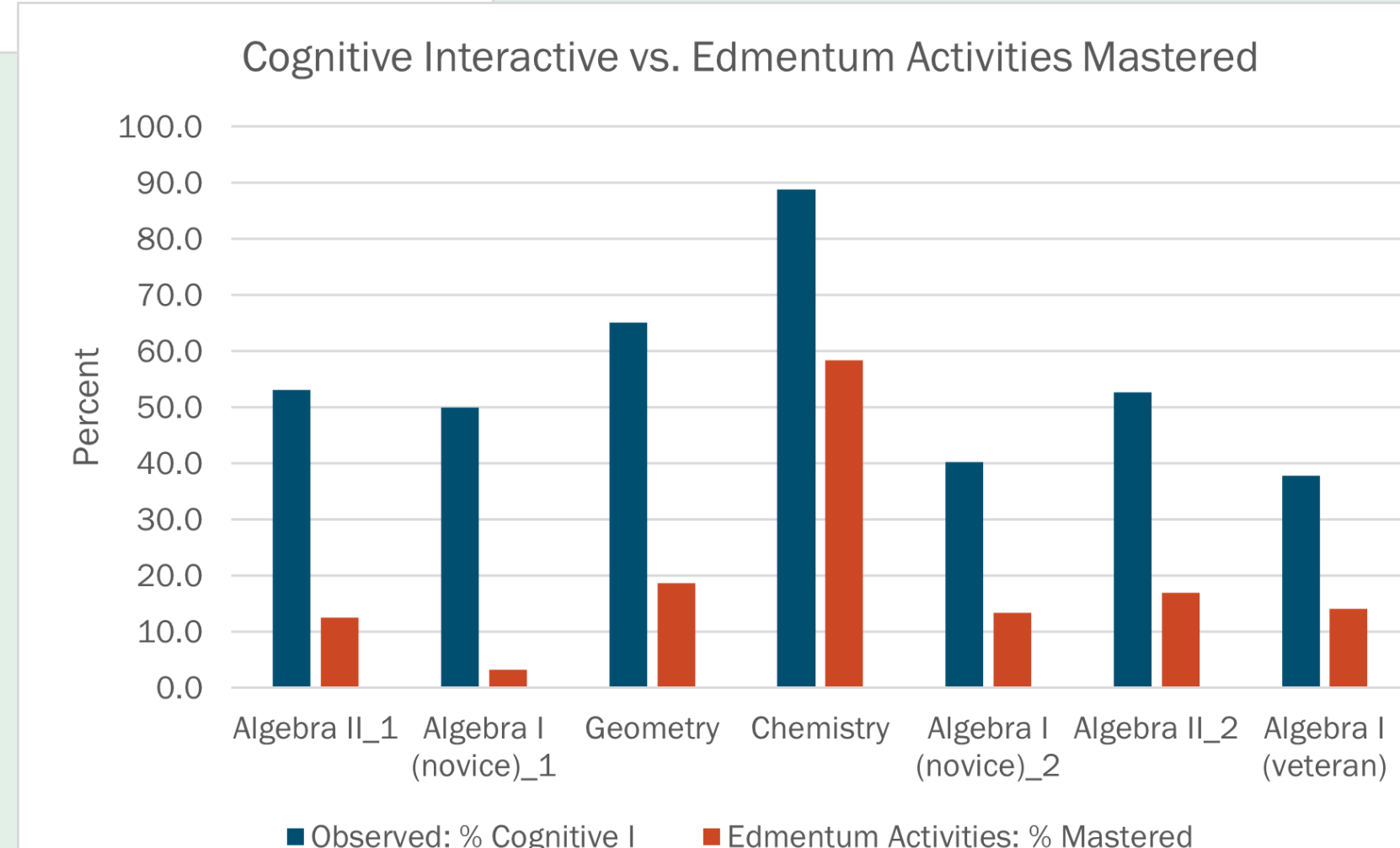
Subject	Students	On-task Only	On- and Off-task	Off-task	On-Task, Cognitive Passive	On-Task, Cognitive Interactive	Off-Task, Cell Phone
Algebra I (veteran)	20	49.7%	6.8%	43.5%	32%	67%	66%
Algebra I (novice)_2	14	63.0%	4.2%	32.9%	39%	60%	83%
Algebra I (novice)_1	17	58.3%	14.6%	27.1%	31%	69%	45%
Algebra II_2	9	72.4%	3.3%	24.3%	30%	70%	88%
Geometry	7	74.6%	11.1%	14.3%	24%	76%	81%
Algebra II_1	11	71.2%	15.2%	13.6%	39%	61%	68%
Chemistry	3	100%	0%	0%	11%	89%	n/a

The higher level of the course, the more on-task behavior we observed, but we identified variation within subjects across teachers (Algebra 1). Most off-task behavior was on cell phones. Most on-task behavior was interacting with Edmentum, but about a quarter to a third of on-task time was passive (i.e., looking at the screen, but not actively doing anything in the system).



We found our measures of on-task behavior are highly correlated with a measure in the Edmentum system that measures time on task.

We have more mixed findings when examining other kinds of measures in Edmentum, like activities mastered. We are considering what these variables mean, holistically, in Edmentum to determine the meaning of what we observe.



Scan QR Code for more information, including the observation protocol and my contact information.

sviano@gmu.edu
<https://www.samanthaviano.com/>

