Connecting Industry to Mathematics Instruction

NSF ATE Award # 1954291

In partnership with

WAKE TECH

WAKE COUNTY PUBLIC SCHOOL SYSTEM

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Our first summer began with planning a two-week virtual teacher workshop to meet our goals to create industry inspired math lessons that apply the Launch, Explore, Discuss pedagogy and recruit under-represented groups into STEM programs and careers. Our workshop consisted of 11 different industry immersions with 17 different 90-min STEM activities shared, 3 Equity related presentations, 2 WTCC AET Program Info presentations, 2 full work days on lesson and video development, fall semester calendar development with lessons integrated, and several feedback opportunities to improve the lessons for field testing in the fall semester. All sessions and presentations were interactive using zoom and breakout rooms and google docs to record discussions and other activities were created to build a cohort of first year CIMI participants. Daily agenda PPT's for the two-week workshop can be accessed in the CIMI Google folder Daily PPT .

Participant evaluations of the workshop were overall very positive. A few evaluation highlights are 1) the industry immersions were very valuable, 2) all participants now feel comfortable applying the Launch, Explore, Discuss pedagogy in their teaching, and 3) all participants grew in their knowledge of the five WTCC AET programs being represented. Complete participant evaluations for each day, as well as the industry evaluations, are reported in the CIMI Google folder Evaluations. Each Industry was assigned a CIMI "Coach" to help prepare the Industry for the workshop immersion to assure the activities shared will align with our math courses LO's. This coaching was very valuable to successful teacher immersions and the industry evaluations also confirmed the useful of the CIMI Coach.

Participants have created 12 industry inspired lessons have been created and four Launch Videos, with the remaining launch videos done by the end of October (an example of one launch video can be viewed at https://vimeo.com/geocore/cimi-highfill with password: cimi). The 12 lessons showcase the 5 AET programs of Electronics, Architectural, Civil, Mechanical, and Biopharmaceutical Technologies and can be accessed in the CIMI Google folder Lessons. These activities are in draft form and a review feedback loop will be completed after classroom use to finalize the lessons. Participants are also giving feedback in the Google document Feedback , allowing for more input to improve each lesson. Each lesson will contain a student sheet, teacher notes, possible solution, Desmos pre-requisite activity, and a launch video (for 10 of the lessons). Workshop participants are implementing the lessons using MS Teams and Google Hangouts so students can collaborate to reach solutions to the activities. Students have created solution videos, which are evaluated by other students, to apply the industry soft skills of communication, critical thinking, and collaboration.