Culturally Responsive, Affective-Focused Teaching of Science & Mathematics (*CRAFT*)

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Project Overview

Developing culturally responsive, affective-focused teachers requires continued and targeted support in one's knowledge, beliefs, and practices.

CRAFT is a hybrid two-year, graduate credit and certificate accruing program that equips Florida K-12 science and math teachers with culturally responsive, affective-focused practices and leadership skills to support STEM learning, affect, identities, and career interest for all students.

Goals

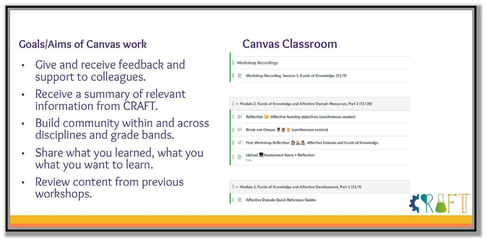
Transform practices: Equip K-12 science and mathematics teachers with culturally responsive, affective-focused practices and leadership skills to support STEM learning, affect, identities, and career interest for students who identify as Black, Indigenous, and/or People of Color (BIPOC).

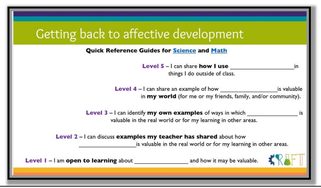
Construct tools and resources: Develop open-access PD materials that support and sustain culturally responsive, affective-focused science and mathematics teaching. These materials will be created in Canvas and shared through open-access platforms including Google Classroom and the Unizin online learning consortium.

Develop a theory of change: Create an evidence-based, adaptable framework that identifies how CRAFT program experiences function to improve science and mathematics teachers' culturally responsive, affective-focused instruction.

Development Activities

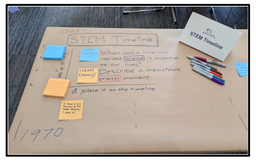
Coursework occurs in 4 hybrid graduate courses over a two-year period: *Culturally Responsive STEM Education, Instructional Coaching, Teacher Inquiry,* and *Teacher Leadership*.



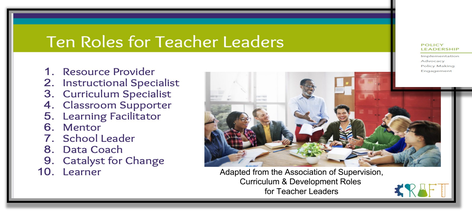


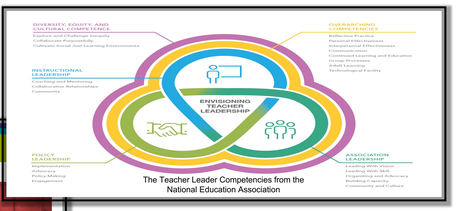
STEM Empowerment Program is an intensive 2-week program for elementary and middle school students where CRAFT teachers implement co-designed culturally responsive STEM units.

Teacher Inquiry occurs in the 2nd year. Teachers investigate and address an area of inequity in their classrooms. They share their findings with colleagues and administrators across our partner district.



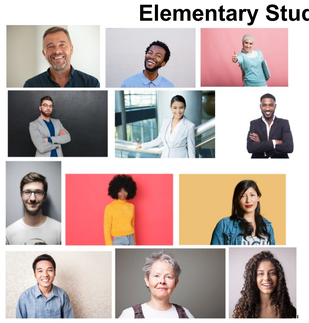
Teacher Leadership Teachers examine their roles as change agents at the school level and investigate how these roles translate into their continued professional growth as culturally responsive, affective-focused educators.





Findings

Elementary Student's Perceptions of Who is a Scientist or Mathematician

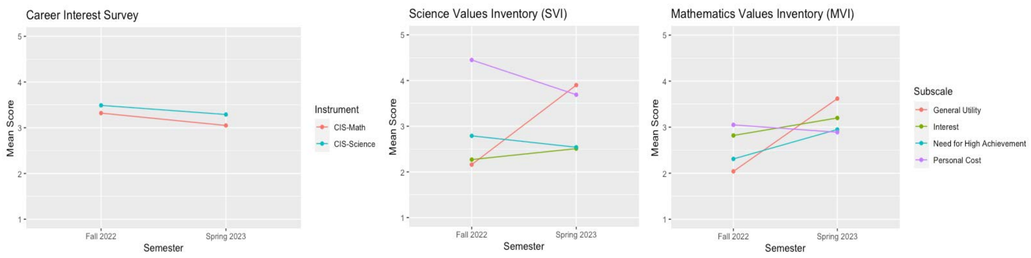


Numb	Yes	Maybe	No
1	26	29	8
2	25	23	8
3	36	21	6
4	51	8	3
5	47	10	6
6	44	14	5
7	9	23	31
8	18	25	24
9	33	25	5
10	23	27	13
11	16	15	32
12	16	24	22

Pictures numbered 1-12 from left to right.

Preliminary analysis of elementary student interview data revealed trends in student's perceptions of who is a scientist and/or mathematician. Factors such as clothing attire played a role in student's positively categorizing an individual as a scientist/mathematician.

Secondary Students' Responses to Career Interest Survey (CIS) and Science/Math Values Inventories (SVI, MVI)



Preliminary summary data for CIS, SVI, and MVI for secondary students in treatment classrooms are displayed. Data shown are means on a five-point rating scale.