

Who Belongs in STEM?

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Introduction:

Students are typically unable to relate to STEM classes, even when they show talent. I intended to create a literacy project that shows the “normalcy” of scientists, technologists, engineers and mathematicians. The participants in this study were volunteers from 2 sections of first year chemistry students in Willcox, AZ. As the novel literacy activities arose, students were presented with pre-and post-surveys intended to assess how they perceive themselves, their school, and their future identity to determine if changes were effected.

Findings:

Literacy activities that presented people in STEM careers did not strongly influence students’ ability to personally identify with STEM opportunities. Most students that did indicate a change in their sense of identity indicated a more positive correlation with STEM identities and careers. When students identified factors that would most influence them towards an identity related to STEM, they stated that:

- School is not an important influence;
- Experiences related to STEM were a major influence, often in connection with friends and/or family;
- Parent encouragement to do well in STEM courses were sometimes important;
- The inherent challenge in some classes was occasionally a motivational factor;
- Learning about job opportunities and pay opportunities in STEM careers was a somewhat effective motivator.

When students identified the factors that influenced them to be interested in specific careers, there were some similarities, but also some differences. These responses included:

- Experiences they had as young kids;
- High School CTE courses (focused in FFA);
- Specific courses that they felt had effective teachers and strategies;
- Specific interests were mentioned (sometimes identified, sometimes left vague).

Plan of Action:

As a teacher, I intend to continue looking for trends in terms of how Identity is formed, as well as trying to find strategies to influence students towards STEM. The democratic and meritocratic idea of everyone having a place in STEM may be a stronger way to invite students to the larger Discourse related to a scientific worldview and participation in STEM fields.

As a leader, I am working with Elementary teachers to create age appropriate activities and curricula to create an outreach program to some of the feeder schools that come to our high school.