A Logic Model that Describes and Explains Eight Exemplary STEM-focused High Schools with Diverse Student Populations

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10 Initial Critical Components

Can cross-case analyses of eight case studies create a theory of action for successful inclusive STEM-focused high schools?

School Critical Components

1. Structure
   - Flexible & autonomous administration
   - Innovative & responsive leadership
   - Integrated, innovative technology
   - Dynamic assessment systems for continuous improvement

2. What Students Learn
   - College-prep, STEM-focused curriculum for all
   - Early college-level coursework

3. How Students Learn
   - Well-prepared STEM teachers and professionalized teaching staff
   - Reform instructional strategies and integrated project-based learning
   - STEM-rich, informal experiences
   - Connections with business, industry and the world of work

4. Social dimension and purpose
   - Positive school community and culture of high expectations for all
   - Supports for underrepresented students
   - Inclusive STEM mission
   - Agency and choice

Impacts During HS for All Students

What Students Know
- Develop knowledge of an interest in STEM and STEM careers
- Cultivate deep STEM content and process knowledge

What Students Can Do
- Build creativity, collaboration, critical thinking and communication skills
- Demonstrate academic achievement
- Are prepared for post-secondary success

Who Students Become
Persons who:
- Self-identify as STEM capable
- Acquire college "savvy" and college aspirations
- Develop ownership of/agency for learning
- Are accountable to school community and mission
- Value individual differences
- Are empowered and accepted

End of HS Outcomes

Students are:
- Prepared for STEM in college
- Admitted to and complete college, especially 4 year college
- Engaged as responsible community members and as global citizens
- Able to apply STEM literacy to social and political issues
- Positioned for upward social mobility
- Lifelong learners

4 Emergent Critical Components

1. Dynamic assessment systems for continuous improvement
2. Innovative and responsive leadership
3. Positive school community and culture of high expectations for all
4. Student agency and choice

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Opportunity Structures for Preparation and Inspiration is funded by the National Science Foundation (DRL-1118851). Any opinions, findings, conclusions, or recommendations are those of the authors and do not necessarily reflect the position or policy of the funding agency.