

Chicago Transformation Teacher Institutes (CTTI)

Theory of Action Related to Visions and Goals

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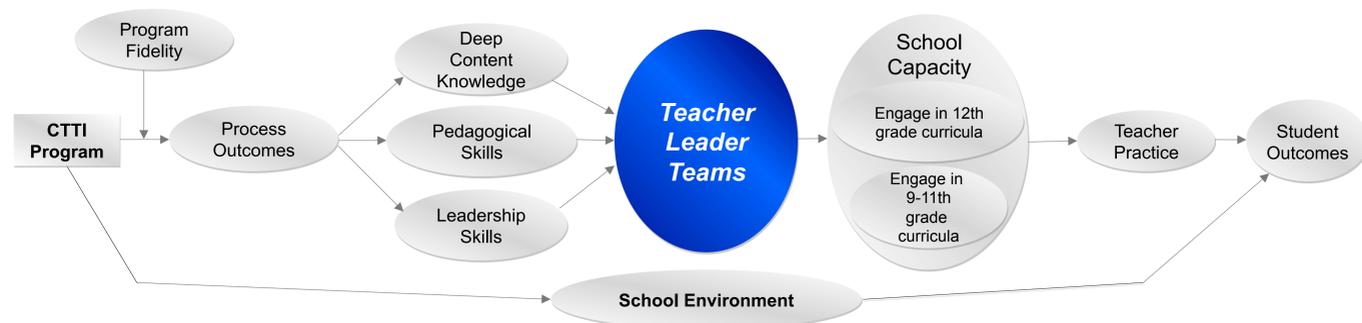
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General Introduction to CTTI's Work



The CTTI Program Model (not shown) was developed by our evaluator, program stakeholders and our research team. The Theory of Action, shown above, builds on our Program Model in an attempt to envision the chain of events put into motion through the implementation of the CTTI program leading to the formation of Teacher/Leader Teams. These teams are seen as agents of change guiding curriculum development, change in teacher practice, and student outcomes. Among the core program strategies articulated in the CTTI program model are:

Workshops: Participating teachers share a common leadership training experience, with one workshop for the entire cohort and one in either math or science.

Networking Meetings: Provide opportunities for two way communication between CTTI teachers and university faculty to increase content knowledge, discuss issues arising in the school projects, and build cross-area understanding.

CTTI Math/Science Courses:

- Reflect current understandings and research in mathematics and science
- Are based on an interdisciplinary approach to course design
- Are based on collegial course design and development through input from the two institutions cooperating on a given track (math, physical science, life and environmental science)

In-school Teacher Team Meetings and Interactions in which Teacher-Leader Teams:

- Are aware of and responsive to the needs and opportunities of the students in their particular school and use information from student assessments to help guide their thinking and planning
- Work with and, where appropriate, serve as part of the school leadership team
- Work with others in their school (e.g., non-CTTI teachers from the discipline in question, when applicable and/or CTTI teachers in math and science)

Measuring Progress • Findings and Discussion

Use of Rubric to Assess Quality of 12th Grade Courses

Based on our CTTI Program Model and other sources, we created a rubric comprised of six categories of program strategies: curriculum overall; content and design; pedagogy and student engagement; assessment; strategies specific to math courses; and strategies specific to science courses. We intend to use the rubric to examine the 12th grade capstone course work undertaken by CTTI-trained teachers as well as to help teacher teams think through the design or modification of these courses.

- The rubric was incorporated in a CTTI workshop to help teachers think about their own teaching practices as well as help guide their thinking on 12th grade course development and implementation.
- A portion of the rubric has been incorporated into the written protocol we will use to observe a subset of classrooms in which some of these 12th grade courses are being taught.
- The rubric was pilot tested by a subset of teachers who were asked to complete the full rubric while engaged in a workshop this summer that focused on the design and development of science courses using NASA-based data.

Findings and Discussion

Observations of CTTI activities, surveys, and in-depth interviews were used to explore the implementation and effects of CTTI. The following were some major findings from 2011-2012:

Successes

- Teachers have gained considerable content and leadership knowledge.
- There has been progress toward the creation and implementation of CTTI-influenced capstone courses.
- Participants are clearly viewing themselves as leaders within their schools and acting as such.
- Some school change outcomes were originally conceptualized to be outgrowths of school-based teams created specifically as a result of CTTI participation. In practice, teachers seem to be moving toward in-school leadership roles as individuals, and bringing their CTTI learning to other, already-established teams at their schools (i.e., teams in which they already participated prior to involvement with CTTI).

Some Challenges

- Teachers were relatively unaware of the in-school teaming expectation of CTTI.
- Teacher turnover is happening in CTTI schools. However, CTTI teachers tend to remain in the program even if they switch or leave schools.

Constituencies Served and Subject Matter

Constituencies Served

CTTI serves participants/constituencies using five Math Science Partnership Key Features in the formulation of the project's main goals and interaction:

- The **Partnership-Driven** CTTI extends the engagement of five universities and CPS in a collaborative effort **benefiting schools, teachers, and students** and the partner institutions.
- CTTI employs a theoretically-focused and research-based logic model to improve **Teacher Quantity, Quality, and Diversity** within a set of schools that serve CPS' predominately African American and Latino students.
- The CTTI program builds teams of teacher leaders to enact **Change** in curricula and courses and to **Sustain** that change in schools. CTTI strengthens the higher education partners' ability to offer strong teacher content and leadership science and math education.

Subject Matter

- The CTTI teacher program includes three components in addition to networking programs:
- **Coursework** in **mathematics, physical science, and life and environmental science**. The courses provide for increased content knowledge by teachers, including how the content is embedded in contemporary issues and current research. They also support growth of deep knowledge required for strong cross-curricula work.
- **Workshops on leadership and teaching** that provide increased skills in how to use content to understand classroom practice, including instructional design, selection of classroom materials, pedagogy, and assessment of student knowledge.
- **Improved curricula** – school teams target recruitment and tailor curricula for 12th grade capstone and AP classes. These curricula are part of a vertical alignment of all four years of high school science or mathematics.

Challenges and Questions

- **How can a program leverage and build on the introduction of the Common Core State Standards in Math and the Next Generation Science Standards to increase teacher effectiveness in the midst of continuing district leadership changes?**
- **How does our rubric for improved teaching impact teacher practice and inform the research and evaluation of the project?**
- **How have STEM faculty, leadership workshop leaders, and district and school administrators impacted teacher practices for improved student outcomes?**
- **How can a program document the value it has added to the teaching of its group of teacher participants when each teacher and each school has had a significantly different intervention?**