EVALUATION REPORT #7 | FEBRUARY 2019

EXECUTIVE SUMMARY

Investing in Science Teacher Leadership

Strategies and Impacts

NGSS EARLY IMPLEMENTERS
WestEd

NGSS Early Implementers Initiative: Bringing science to life as a core subject in K–8 classrooms

A diverse group of eight California school districts and two charter management organizations is actively implementing Next Generation Science Standards in grades K–8. These NGSS Early Implementers are supported by the K–12 Alliance at WestEd, and work in partnership with the California Department of Education, the California State Board of Education, and Achieve. The S. D. Bechtel, Jr. Foundation commissions WestEd's STEM Evaluation Unit independently of the K–12 Alliance to evaluate the Initiative in the eight public school districts. This document summarizes the content and findings of the seventh evaluation report in the Initiative series, published in February 2019. Access the complete series and learn more at K12alliance.org.

Preparing Teachers as Leaders

While reports about teacher leadership are common, the story of leadership development in the NGSS Early Implementers Initiative carries some unique aspects. Many projects aiming to implement widespread changes in teaching use a train-the-trainers model. That is, some teachers participate in professional learning, and they, in turn, provide professional learning to other teachers. The Early Implementers Initiative significantly expanded upon this model. The Initiative deeply prepared teachers for the foundational role of being leaders in how to implement the science teaching called for by the Next Generation Science Standards (NGSS). In addition, the Initiative explicitly prepared teachers to become catalysts for change in their districts.

This seventh report in a series of Initiative evaluations is intended to share findings with state and district leaders, including school principals, and leaders of teacher professional learning. Based on extensive observations, interviews, and surveys, the report describes teacher leadership development and its benefits in the first four years (2014–2018) of the six-year Early Implementers Initiative. It explains how the Initiative prepared teachers for leadership in NGSS teaching, including how it created a culture of collaboration that produced change agents for science education and NGSS implementation. It also conveys how the leadership experience affected teacher leaders' actions and professional growth.

Professional learning for close to 500 teacher leaders was led by WestEd's K–12 Alliance in collaboration with the Initiative's district Project Directors. The participants in each district included dozens of Teacher Leaders who experienced nine days per year of professional learning. Additionally, about nine Core Teacher Leaders from each district received 12 days per year of further learning opportunities. The two main vehicles of professional learning, experienced by both levels of Teacher Leaders, were weeklong, Initiative-wide Summer Institutes held centrally for teacher leaders from all districts, and two two-day cycles of Teaching Learning Collaboratives (an amplified version of lesson studies) held during the school year.

About language in the report:

"Core Teacher Leaders" refers to the teachers who joined the Initiative the first year as part of the Core Leadership Teams in each district. Uppercase "Teacher Leaders" refers to the larger group who joined the Initiative in the second year. Lowercase "teacher leaders" is used to refer collectively to both Core Teacher Leaders and Teacher Leaders.

Preparation for Leadership in NGSS Teaching

The Initiative's teacher leaders first needed to understand the standards and gain some experience teaching them. The topics of professional learning evolved over time, from such basics as understanding the structure of the NGSS, to using phenomena to drive instruction, to substantially evaluating instructional materials for their ability to fulfill the standards. Annual surveys of participants indicated a progressively deeper understanding of the NGSS over the years as well as understanding how to help other teachers transition to the standards. Evaluators saw during classroom observations that Teacher Leaders were implementing the NGSS in their teaching, which will be described at length in a future report in the evaluation series. Further, 81 percent of Teacher Leaders reported understanding how to help other teachers "fairly well" or "thoroughly" by year four, in contrast to year two when 83 percent of them said that they understood "poorly" or "not at all."

Additional Leadership Preparation

The full report describes the ways that the Initiative:

- Prepared teacher leaders to create a culture of belonging, safety, and collaboration
- Enlisted teachers in leadership opportunities, and also partnered with them as they stepped up to these opportunities
- Explicitly empowered teacher leaders to become change agents able to clearly communicate about the NGSS to stakeholders and work at creating school and district contexts that support implementation.

Administrators have noticed growth in teachers as a result of these leadership opportunities, as described by one elementary school principal:

> *"I see the confidence [in teachers] has grown — not only in understanding science content, but being a Teacher Leader and presenting, facilitating, and taking initiative."*

Leadership in Action

The largest section of the report primarily describes two types of leadership actions taken by teacher leaders:

- Providing formal professional learning about the NGSS to teachers in their districts
- Providing tailored assistance to individuals or small groups in their districts.

Teachers took leadership roles that included presenting at Summer Institutes, facilitating Teacher Leader Collaboratives, presenting at district professional learning sessions, presenting at school-level events, and helping lead family science nights. Survey data indicated that Teacher Leaders provided increasing amounts of technical assistance to colleagues as the Initiative progressed: the percentage of Teacher Leaders who reported sharing ideas with colleagues "frequently" or "occasionally" jumped from 36 percent in 2014–15 to 74 percent in 2015–16, then continued to increase over the next two years to 86 percent in 2017–18.

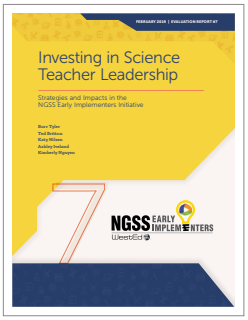
Impact of the Leadership Experience on Teachers' Broader Professional Growth

In addition to getting the NGSS implemented within the participating districts, a bonus benefit of the Initiative's deep leadership development model has been helping many Teacher Leaders grow in one or more of these ways: advancing within the Initiative, advancing within the district apart from the Initiative, or taking on regional or state leadership roles in science education.

Recommendations for Administrators

The authors briefly discuss several recommendations for encouraging and leveraging teacher leadership in support of NGSS implementation:

- Acknowledge that the NGSS are a big change.
- Focus on peer leadership abilities.
- Make a multi-year implementation plan.
- Make teacher group work a priority.
- Create a cohort of teacher leaders.
- Help the teacher leaders grow.



Read the full report, access other evaluation reports and resources, and learn from NGSS Early Implementers at K12alliance.org.