August 2020

The NGEI Approach to Improving Teacher Preparation in the CSU Through a System of Supports

Melissa Eiler White

Allison Milby

Kate Hirschboeck

Jaclyn Tejwani

Daniela Torre Gibney

WestEd

WestEd.org

SRI Education™

A DIVISION OF SRI INTERNATIONAL

WestEd is a research, development, and service agency whose mission is to promote excellence, achieve equity, and improve learning for children, youth, and adults. For more information about WestEd, visit http://www.wested.org/; call 415.565.3000 or, toll-free, (877) 4-WestEd; or write: WestEd / 730 Harrison Street / San Francisco, CA 94107–1242.

This publication was made possible by a grant from the S. D. Bechtel, Jr. Foundation via its Preparing a New Generation of Educators for California initiative. Any opinions, findings, and conclusions expressed in this material are those of the authors and do not necessarily reflect the views of the foundation.

The New Generation of Educators Initiative (NGEI) at California State University (CSU), funded by the S. D. Bechtel, Jr. Foundation, sought to strengthen the teacher preparation system in California so that new teachers would enter the workforce prepared to implement the Common Core State Standards and the Next Generation Science Standards. From January 2015 through June 2019, NGEI provided grants to CSU campuses and their district partners to improve their teacher preparation programs. The foundation developed a theory of action to guide reform that focused on five Key Transformational Elements: partnership with districts, prioritized skills, practice-based clinical preparation, formative feedback on prioritized skills, and data-driven continuous improvement.

WestEd and SRI International conducted a formative evaluation of NGEI implementation and outcomes at the grantee sites, and delivered technical assistance to strategically support data-driven program reform efforts.

Suggested citation: White, M. E., Milby, A., Tejwani, J., Hirschboeck, K., & Torre Gibney, D. (2020). *The NGEI approach to improving teacher preparation in the CSU through a system of supports.* WestEd.

We would like to acknowledge Sarah Cohen, Program Director at National Center for Teacher Residencies; Mimi Miller, Professor at CSU Chico; Karen DeMoss, Executive Director of the Prepared to Teach program at Bank Street College of Education; and Ashley Campbell, Senior Researcher at SRI International for the expertise they brought to their thoughtful review of this report. We would also like to acknowledge the review and input from Jana Luft, Program Officer, S. D. Bechtel, Jr. Foundation; Dr. Megan Sulsberger and Dr. Erin Ramirez, CSU Monterey Bay; Dr. Kristina LaGue and Holly Gonzales, CSU Bakersfield; and Dr. Noelle Won, CSU Stanislaus.

Table of Contents

Overview of New Generation of Educators Initiative

Educators and policymakers across the United States recognize a growing urgency to improve the nation's systems of teacher preparation.[1] Schools in every state need teachers who are prepared to teach diverse student populations and to meet new and rigorous academic standards, but existing research demonstrates that there is variation in how teachers are trained for the profession, both within and across programs.[2] In the face of nationwide teacher shortages, better-prepared teachers are more likely to stay and thrive in the profession.[3]

Research on university-based teacher preparation programs, which prepare the majority of the nation's teachers, identifies key aspects of these programs that need strengthening in order to prepare teachers to teach to rigorous standards and engage in more student-centered, culturally responsive, pedagogical practices.[4] For one, programs can clearly define a set of prioritized skills that teachers must master to teach effectively. Next, they need to improve the quality, coherence, and consistency of both coursework and clinical experiences. Finally, they should provide opportunities for teacher candidates to practice in a clinical setting and receive high-quality feedback on their teaching.

The S. D. Bechtel, Jr. Foundation ("the Foundation") and the California State University (CSU) system partnered to launch California's New Generation of Educators Initiative (NGEI) in an effort to support CSU teacher preparation program reform. CSU prepares the largest number of California's teachers, by far, and about 8 percent of teachers nationwide.[5] Launched in 2016, NGEI was a four-year, $27 million initiative. It engaged 11 universities[6] throughout the CSU system to bolster their teacher preparation programs (TPPs) by enacting practice-based reforms (for an overview of each teacher preparation each program's partnership and reform activities, see Appendix A). Its vision was to increase the number of teachers who entered the profession prepared to deliver instruction aligned to the Common Core State Standards (CCSS) and the Next Generation Science Standards (NGSS).

NGEI's particular focus was on transforming the nature and quality of clinical preparation. To this end, NGEI brought together a group of core CSU deans and faculty, Foundation staff, and technical assistance providers who collaborated to develop a theory of action that would ground that transformation.[7] What emerged were five transformative elements that guided implementation of reforms across campuses (for more detail about the transformative elements, referred to within the NGEI community as the Key Transformational Elements, see Appendix B):

- Forming deep partnerships between CSU campuses and their partner school districts
- Collaboratively defining a set of prioritized skills that teachers must master
- Ensuring practice-based clinical preparation supported by high-quality mentors
- Creating a culture of formative feedback centered on prioritized skills
- Using data to drive continuous improvement

Throughout NGEI's implementation, WestEd and SRI International conducted an evaluation to help support continuous improvement and to provide a summative assessment of progress toward the five transformative elements (for more detail about our data and methods, see Appendix C). We report our findings in a series of four papers focused on lessons learned as participating campuses enacted reforms anchored in the transformative elements. The papers' topics include the following: (1) the system of supports to bolster reform implementation; (2) campus–district partnerships; (3) strengthening of clinical orientation; and (4) data use and continuous improvement. This paper focuses on the first topic, the NGEI reform initiative and the supports partnerships received.

Introduction

Over the past two decades, there has been a growing recognition that clinically oriented, practice-based teacher preparation holds promise for improving teaching practice.[8] A clinically oriented approach "positions clinical experience and practice at the center of candidate preparation."[9] It is defined by frequent opportunities for preservice teachers to practice key skills and get feedback on their performance, while engaging in coursework that teaches key theory, content knowledge, and orientations that teachers need to begin their careers in the classroom.[10]

Responding to increased demand, teacher residency programs — clinically rich programs that involve a year-long "residency" in the classroom of an expert mentor teacher[11] — have emerged and increasingly expanded.[12] Yet the portion of teachers prepared through residencies and other clinically rich programs is still small.[13] "Today there are many examples of excellent clinically based programs," a 2010 report from the National Council for the Accreditation of Teacher Education noted. "However, the nation needs an entire system of excellent programs, not a cottage industry of path-breaking initiatives."[14]

In launching the New Generation of Educators Initiative (NGEI), the S. D. Bechtel, Jr. Foundation sought to solve this problem by funding clinically oriented reforms in one of the biggest teacher preparation systems in the country, the California State University (CSU) system.[15] CSU prepares nearly 50 percent of the teachers in California and 8 percent of the teachers in the United States, giving it strong potential for large-scale impact.[16] NGEI worked with a subset of campuses within the system, setting the stage for a teacher preparation transformation that could be scaled across the CSU system.

The Foundation conceptualized the initiative based on learnings from other initiatives and input from CSU leaders.[17] (See Box 1 for background on other related initiatives nationally.) It awarded NGEI funds in two phases of competitive grants.[18] In 2015, eight campuses received 18-month phase 1 awards[19] that responded to differing teacher pipeline needs, ranging from developing high school pathways to teaching to recruiting, training, or supporting teachers. In 2016, 11 campuses received three-year phase 2 grants.[20] This second cohort included six of the phase 1 grantees and five new district–campus partnerships (see Appendix D1). Phase 2 focused solely on teacher development that occurs in teacher preparation programs.

In structuring the NGEI effort, the Foundation sought to strike a balance between setting requirements that would lead to rapid transformation and providing the flexibility and support to enable campus–district partnerships to implement reforms in systematic, sustainable, and context-tailored ways. As a limited term foundation, the Foundation was particularly focused on the long-term vision and

sustainability of its investment. Consequently, Foundation leaders placed priority on building capacity — among campus–district partnerships and across the CSU system — for continuous improvement. Their strategy for building capacity was to surround partnerships with a system of supports (see Box 2) that included coaching and technical assistance from outside organizations as well as a learning community to help partnerships share problems of practice.

This paper draws on data collected throughout the implementation of the initiative to describe how the Foundation designed and implemented the NGEI system of supports as well as what worked well and what did not. The processes, insights, and lessons learned may be educative for funders, policy-makers, and other stakeholders involved in planning, implementing, or supporting large-scale reforms, especially those aimed at improving teacher preparation and producing more high-quality teachers.

Our evaluation identified three key levers that supported the initiative's success:

- Balancing grant requirements with flexibility and responsive support
- Customizing technical assistance support to meet partnership needs
- Embeding opportunities for cross-network learning and collaboration

Box 1. Large-scale clinically oriented teacher preparation reform efforts

When NGEI launched, only a few other large-scale, university-based reform efforts existed that were similarly focused. One of the earliest was the Carnegie-funded Teachers for a New Era (TNE) initiative, launched in 2005, which funded 11 promising university-based preparation programs and emphasized the importance of clinical preparation for early career teacher success.[21] The 10-year Teacher Effectiveness Initiative (TEI) followed in 2009, supported by the Bush Foundation at 14 selected universities throughout Minnesota, North Dakota, and South Dakota. TEI's approach was structured around five pillars, four of which (recruit, prepare, employ, and support) aimed to improve the teacher pipeline, while the fifth focused on assessing and measuring progress.[22]

Reflecting the increasing attention to clinical experiences in the teacher education field,[23] teacher preparation programs began building full-year residencies into their teacher education programs,[24] many supported by the National Center for Teacher Residencies.[25]

A lesson learned from early large-scale reform efforts like TEI and TNE was that transforming teacher preparation to be more clinically oriented requires deep collaboration between districts and campuses as well as a data-informed approach to continuous improvement.[26] The early efforts also demonstrated that cross-campus learning networks and technical assistance can play a key role in supporting the development and implementation of the desired reforms. Recognizing that institutions frequently did not have opportunities to share problems of practice and learn from one another, large-scale clinically oriented reform efforts like TNE and TEI included a learning network to facilitate cross-campus learning.[27] They also included coaching or other technical assistance from content experts, who provided support during implementation and helped disseminate effective practices.

TNE, for example, provided technical assistance from external coaches who advised grantee universities, conducted site visits to learn about the work, and convened the network to share resources and problems of practice. Similarly, TEI's approach included regular convenings of the TEI network as well as ongoing support from external coaches and an advisory board of leaders and experts.[28] In a third example, the Bill & Melinda Gates Foundation supported "transformation centers" that were established in 2015 and supported technical assistance to both traditional and nontraditional teacher preparation programs.[29] The five transformation centers—NCTR, TeachingWorks, TeacherSquared, U.S. Prep, and Massachusetts Department of Elementary and Secondary Education—comprised a community of practice that provided district and university partners with technical assistance to carry out clinically oriented reforms.

Box 2. NGEI system of supports

PARTNERSHIP LEVEL

Supporting campus–district partnerships to shift to a more clinically oriented approach

- **Technical assistance focused on practice-based, clinically oriented teacher preparation.*** Consisted of workshops, coaching, and site visits. The support was offered optionally to both partnership teams and individual faculty by two different technical assistance providers.
- **Technical assistance focused on continuous improvement.*** Consisted of workshops, webinars, and coaching. The support was initially required for all partnerships, with an optional yearlong fellowship opportunity and support to develop custom tools for data collection, management, and analysis.

** Included individualized support for partnerships as well as cross-partnership participation in webinars and workshops.*

CROSS-PARTNERSHIP LEVEL

Strengthening relationships and facilitating cross-network learning among partnerships and across the NGEI network

- **NGEI Learning Community.** Annual convenings of the NGEI partnerships, monthly newsletter, and regularly updated initiative-facing website (required for all partnerships).
- **"Meet-up grants."** Awarded to pairs of CSU campus teams to meet in person to observe and share best practices or collaborate to develop new frameworks, tools or processes (optional for partnerships and the Chancellor's Office).

SYSTEM LEVEL

Communication and dissemination as well as capacity to support continuous improvement within the CSU network

- **Direct support to the CSU Chancellor's Office.** Support coordination of the initiative with particular attention to scaling and sustainability of the work across the CSU system.
- **Direct support to CSU Educator Quality (EdQ) Center.** Builds both technical and adaptive capacity to support the use of data for improvement.
- **Technical assistance to the EdQ Center.** Strengthens data infrastructure at the system level and builds the center's capacity to support continuous improvement efforts in the CSU teacher preparation system.

Lever 1: Balance Grant Requirements with Flexibility and Responsive Support

Phase 1 of NGEI supported teacher pipeline projects that responded to local needs and varied in scope and focus, from developing high school pathways to teacher preparation to redesigning campus processes — for example, for candidate recruitment and selection.[30]

In phase 2, the Foundation focused its support squarely on strengthening the quality of teacher preparation itself. The Foundation added new requirements, but — in keeping with its existing principles — built in flexibility that enabled partnerships to adapt their work to local needs, choose support options that best served their goals, and make changes, as needed, over the course of implementation. Foundation leaders stayed engaged in and apprised of each partnership's progress and were thereby able to adapt and tailor support in response to partnership needs. The Foundation's approach helped partnerships make progress by

- instituting a few signature requirements; and
- allowing choice and flexibility to accommodate differing partnership needs.

Instituting signature requirements

The Foundation embedded its reform objectives into grantees' work via two signature requirements for phase 2 grant funding: identifying a classroom observational rubric to assess candidate progress toward prioritized skills; and creating key partnership roles. These requirements strategically spurred partnerships to make immediate, fundamental changes that not only promoted greater campus–district collaboration but also laid the foundation for data-driven continuous improvement. All but one partnerships implemented these requirements.

Within the first several months of receiving grant awards, partnerships were required to select or create a classroom observational rubric that would be used to guide candidate observations and feedback. Grants were awarded in June 2016, and by September 2016 all grantees were expected to submit their selected rubric choice to the Foundation. In 2017 and 2018, the Foundation required that programs submit classroom observation scores for participating candidates as part of their annual grantee reports.

Initially, many of the partnerships were overwhelmed by the task of selecting a rubric and integrating it, on a tight timeline, into their candidate support program. To help ease the burden of the effort, Foundation leaders provided scaffolding and resources — for example, they requested that the evaluation team provide information and resources about off-the-shelf classroom observation rubrics that teacher preparation programs could use. There was a parallel effort at the CSU Chancellor's Office to explore the possibility of creating a common observation rubric that could be among those selected for use by funded partnerships.

The required classroom observation rubrics provided stakeholders with a common definition of preservice teaching quality and a common tool for measuring candidate progress — building blocks most partnerships lacked before NGEI.[31] Ultimately, NGEI partnerships found the

observational rubric to be the most important catalyst for bringing the prioritized skills to life. "As the NGEI work progressed, most faculty saw the value of the rubric," said one system leader. Specifically, the introduction of the observational rubrics

- strengthened partnerships by prompting the campus and district to agree on the set of skills they considered most important for preservice teachers to master, and by providing a common language for discussing and assessing these skills;
- enhanced practice-based clinical preparation and formative feedback on prioritized skills by guiding candidates' support and feedback during clinical practice; and
- enabled data-driven continuous improvement by allowing partnerships to measure progress — both in terms of individual candidate proficiency and, in the aggregate, in terms of how well a program was preparing a group of candidates to enact the selected skills.

By the end of the grant, at nearly all campuses, one or more teacher credential programs (i.e., Multiple Subject, Single Subject, or Education Specialist[32]) had adopted the partnership's selected rubric. Although partnerships used NGEI funding to pay feedback providers for training and effort associated with the new rubric, most campuses reported that rubrics were likely to be sustained without additional funding, thanks to the structures and processes put in place around rubric use over the course of NGEI.

Partnerships were also required to create three key roles: two liaisons (campus and district) and a continuous improvement lead (CIL). The introduction of campus and district liaison roles was intended to promote collaboration and communication within the partnerships. Clinically oriented teacher preparation requires a strong campus–district partnership, as both organizations work to provide candidates with a coherent and complete preparation experience.[33] Prior to NGEI, campuses and their partner districts tended to work together to identify candidates' clinical placements but did little work as partnership teams to shape the content or direction of the teacher preparation experience. This led to misalignment, including

- campuses emphasizing teaching skills that did not always meet partner districts' hiring needs ;
- inadequate or inconsistent messaging to candidates from the campus and district about what skills were most important to master or what the skills looked like in practice; and
- inadequate or inconsistent processes for selecting and training mentor teachers and supervisors who give candidates feedback and placing candidates with mentor teachers.

To strengthen and better align partnerships between campuses and districts, the NGEI grant required that the campus and district each identify a half-time liaison. The liaison roles were critical for coordinating partnership efforts and, ultimately, for strengthening candidate preparation. For

both campuses and districts, funding the liaison role also meant making a very concrete and public investment in the campus–district partnership.

Within partnerships, liaisons often served as the linchpins between the two institutions, keeping everyone informed and engaged in partnership work. Liaisons were expected to "attend regular NGEI partnership meetings and semiannual convenings, coordinate partnership activities within their organization, and seek necessary buy-in, approval, and/or funding" for those activities.[34] The liaisons' work prompted both campuses and districts to dedicate time and people power to partnership activities. For many partnership teams, liaisons enacted change by navigating the differing organizational cultures and cultivating positive relationships among the partner organizations.

The CIL role was introduced to lead and focus partnerships' efforts to use program data for continuous improvement. Each campus was required to identify a designated CIL, who supported campuses and districts in ensuring that appropriate data be identified, interpreted, and used on a frequent and ongoing basis to inform improvement efforts. At each campus, the designated CIL was a .35 full-time equivalent (FTE) faculty member; at three of the campuses, this individual also shared the responsibility of a co-project director/principal investigator of the grant.

Campuses and school districts collect a wealth of data about their candidates, educators, and students. Before NGEI, data was not often collected or analyzed frequently enough to inform ongoing adjustments to programming and candidate support. Further, campuses and districts did not typically look at data together, resulting in missed opportunities for shared goal setting and decision-making. The CIL role explicitly aimed to create processes and practices that would enable partnerships to improve their use of data to drive continuous improvement. (See Box 3 to learn more about one campus's journey to improve its data-driven decision-making.) Specifically, the CIL's responsibilities included coordinating ongoing collection, review, and discussion of key program quality indicators and leading the development and testing of potential program changes.

In summary, the required roles enabled NGEI partnerships to make progress by dedicating staff time and resources explicitly to foundational reform elements, partnership development, and continuous improvement. At the end of the grant period, sustaining the liaison and CIL roles required additional funding. To sustain the liaison role, three partnerships secured additional grant money, while two others modified existing roles. Doing so required buy-in from institutional leaders who needed to see the value in continuing to invest in a district–campus partnership. Sustainability of the CIL role is less clear. Plans to incorporate CIL duties into existing roles were under consideration, though not firm, as of spring 2019. The majority of partnerships reported that data use and continuous improvement routines had been integrated into ongoing routines. A few campuses were able to secure additional grant funding that included support for ongoing engagement in continuous improvement work, and the Educator Quality (EdQ) Center is launching a network in summer 2020 for

all former NGEI CILs and others who have been involved in continuous improvement work. (For more on the role of the CIL, see the related paper in this series, *Strengthening the data use and continuous improvement capacity of teacher preparation programs.*[35])

Box 3. CSU Monterey Bay measuring candidate progress for continuous improvement

At CSU Monterey Bay, the continuous improvement work enabled the campus to strengthen its processes for collecting and using data on candidate progress in STEM instruction. Continuous improvement efforts were primarily led by the continuous improvement lead (CIL), a grant-required role charged with creating processes and practices to improve the partnership's use of data to drive continuous improvement. In year one of NGEI, the project director, also a Multiple Subject faculty member, assumed CIL responsibilities. For years two and three, another faculty member in the Single Subject credentialing program filled the role.

Prior to NGEI, candidates did not receive formal feedback or assessment on their STEM instruction. Recognizing the need for these supports, early in the initiative, the CIL worked with the partner district, Monterey Peninsula Unified School District, to co-develop a STEM-based classroom observation rubric. The CIL integrated the rubric into STEM coursework, provided coaches with rubric training, and supported coaches with integrating the rubric into their formal classroom observations. By implementing these changes, the program was able to collect more frequent data about how candidates were progressing and begin to coordinate supports candidates received in their coursework and clinical experience.

The CIL-led trainings for coaches focused on building understanding of the classroom observation rubric, calibrating rubric scores, and learning to give rubric-based feedback. Upon reviewing rubric scores and feedback, the CIL learned that the quality of feedback from coaches varied and was not always aligned to what candidates learned in their coursework. To address this problem, the CIL began routinely collecting and analyzing coach rubric feedback from classroom observations and sharing findings from the analysis during trainings to help coaches reflect on and improve their feedback quality.

By the end of the grant, the CIL reported that NGEI continuous improvement work allowed her and her colleagues to develop a stronger understanding of the alignment between program expectations, goals, and the supports candidates

received. The CIL's own confidence in using continuous improvement methods to drive change also improved. In NGEI's final year, the campus had begun expanding use of the classroom observation rubric to the Single Subject program, and the CIL had received additional grant funding through the U.S. Department of Education Teacher Quality Partnership Grant Program to continue the improvement work for the next five years. Her design incorporates a continuous improvement approach, and her work plan includes providing continuous improvement support and coaching to nearby districts as part of that work.

Allowing choice and flexibility to accommodate differing partnership needs

While the non-negotiable requirements pushed toward rapid transformation, allowing choice and flexibility acknowledged the differing contexts and needs of the partnerships. The Foundation structured in two key avenues for autonomous decision-making. First, most of the NGEI technical assistance supports were optional; partnerships could select those most appropriate for their program needs and context. (See Box 4 for a complete overview of technical assistance supports provided.) Second, the Foundation encouraged both the Chancellor's Office and the partnerships to take a learning stance toward their work and share their challenges, a process that enabled partnerships to make midcourse adjustments in program plans to correct for unexpected changes.

Flexibility to select among a set of options allowed partnerships to tailor technical assistance to their priorities, determine what was most feasible for them to implement, and allocate staff and resources accordingly. For example, one technical assistance provider — National Center for Teacher Residencies (NCTR) — offers a suite of tools and program components that support partnerships in implementing residency or clinically oriented programs. A full residency model was not a priority for all NGEI teams; consequently, those partnerships that chose to engage technical assistance support from NCTR tended to be interested in significantly shifting their program toward one that more closely resembled a residency model.

TeachingWorks, another technical assistance provider, offered fellowships to help individual faculty transform their courses to be more clinically oriented by increasing opportunities for preservice teachers to learn, practice, and get feedback on key skills. Making the fellowships available on an opt-in basis preserved academic freedom in terms of making course reforms.

One category of technical assistance support — continuous improvement coaching — was initially required for all partnerships. Data-driven continuous improvement was a cornerstone of the initiative. It guided how Foundation leaders understood and responded to the needs of partnership teams. The Foundation's goal was to provide partnerships with the capacity to make process

and program improvements during and beyond NGEI, and the Foundation considered continuous improvement supports essential for capacity-building.

Initially, nearly all partnerships' plans foregrounded reform implementation, rather than a continuous improvement approach, which focuses on identifying when, where, and how to make changes to achieve a specific outcome. This type of approach involves developing, testing, and refining theories of change through frequent cycles of collection and use of data.[36] It differs from typical practice in many teacher preparation programs.

When NGEI launched the continuous improvement supports, some partnerships resisted. Two felt that the approach to continuous improvement was too much at odds with existing plans for collecting and using data and felt caught off guard by the time commitment engaging in the supports would entail. One partnership opted out of the supports, feeling that its data systems were too much in disarray to allow for engagement in continuous improvement at all.

With some adjustments to NGEI's approach, by the second year of the grant, most partnerships were engaging in continuous improvement work to investigate the problems of practice their teams had prioritized. (See the "Lever 2" section for more about how the technical assistance team adjusted continuous improvement coaching for partnership needs.) For several partnerships, continuous improvement work was transformative, leading to other grant-funded work or permanent changes to roles and processes at the campus. In the words of one CIL, "We loved the coaching calls. At first, we didn't want to do it. But this forces you to have something to share, to get feedback. It forced us to work more strategically."

The Foundation's encouragement of campuses to take a learning stance, be open about challenges, and adjust course when appropriate was emphasized by the lead program officer in her welcome statement at the first meeting of phase 2 grantees:

> "We think differently about this grant than we think about other grants. I'll be very disappointed if in three years we hear 'everyone was very busy and, good news, we achieved 100 percent of our objectives. We continue to be world-class'…We actually want learning to happen here, and we actually want work, which is going to be hard and messy. It's happening across organizations and through people operating in jobs that didn't exist before, working with people who in some cases had not met or were not meeting regularly. That won't go perfectly in only three years."

The Foundation acknowledged that openly airing challenges and barriers — an essential practice for organizational learning — requires trust. To help build that trust, Foundation staff positioned themselves as thought partners with CSU system leaders and partnership grantees, as opposed to compliance monitors. They maintained regular communication through site visits and phone check-ins. They embedded mechanisms such as annual site visits by the evaluation team and

interim and final written reports wherein partnerships could share challenges and lessons learned with the expectation of support, as opposed to sanctions. Said CSU's assistant vice chancellor for teacher preparation, "So much of our work is about building relationships, trust, having confidence in thought partners. Maybe it's the personalities, the way the Foundation has worked. It's been easy to establish that trusting relationship."

The Chancellor's Office likewise encouraged a learning stance, evident in its release of "mini-grants" toward the end of the initiative. The mini-grants, which scaled NGEI to the 12 campuses that had not received one of the 11 phase 2 grants, funded those campuses to clearly identify a problem that could benefit from targeted continuous improvement (aligned to the NGEI priority areas) and work to better understand the problem's root causes. The grants thus encouraged a clear recognition of program challenges and a continuous improvement approach to addressing them.

By staying attuned to challenges faced by the partnerships, the Foundation was prepared to support appropriate program adaptations. As the work began to deepen and scale and partnerships learned from experience, some needed to change their program and funding plans. Due to good working relationships with the grantees, Foundation staff understood and readily endorsed these changes. Said one program director: "This has been an unusual grant program in that the representatives from the Foundation have worked closely with us and helped us stay focused on achieving goals, including allowing program changes when we learned that original plans would not spur the desired changes."

The Foundation also supported the Chancellor's Office in addressing challenges and priorities identified during the course of the grant. For example, the Chancellor's Office identified a need to increase the diversity of teachers being recruited and retained in the field. To support this developing priority, the Foundation allowed the Chancellor's Office to direct grant funds to help develop a diversity, equity, and inclusion toolkit.

Throughout the grant period, Foundation staff took a learning stance themselves, adding or adapting supports in response to what they learned. For example, a formative evaluation report from the evaluation team revealed that **partnerships held varying conceptions of prioritized skills, an inconsistency that was impeding progress in implementing key aspects of the grants.** In response, the Foundation planned and assembled a "mini-convening" in November 2018 on the role of prioritized skills, bringing in experts from TeachingWorks and NCTR to organize and deliver the content.

At the same time, it became evident that in some cases, too much flexibility also had downsides. As phase 2 launched, there was a possibility that the CSU system would adopt or create a common rubric instrument for use across some or all partnerships, but that option did not materialize.[37] Instead, each partnership chose or created its own different rubric, which invited variation among partnerships in terms of the number and specificity of skills measured by their identified rubrics.[38] It

also meant that potential opportunities for networked learning anchored in common measurement were not realized.

Four of the partnerships chose to create their own rubric, while six chose to make additions or modifications to an existing rubric, with their version of the instrument reflecting what they considered most important. By the end of the grant, Foundation staff had concluded that the latter approach was preferable because partnerships could invest time and energy in training stakeholders on an existing tool, rather than undergoing the time- and labor-intensive process of developing and piloting a homegrown rubric.[39] (For more on the central role rubric selection and use played in the grant, see the related paper in this series, *Strengthening the Clinical Orientation of Teacher Preparation Programs.*[40])

Lever 2: Customize Technical Assistance Support to Meet Partnership Needs

In addition to making most technical assistance optional, the Foundation worked with technical assistance providers to deliver support that aligned with team capacity, contexts, and program needs. The phase 1 projects shed light on common teacher preparation challenges but also on the diverse needs of campuses and their partner districts. Each partnership began NGEI with a unique approach to preparing teachers, driven by the clinical model they already had in place, the needs of the schools and communities where candidates were placed, and the campus's capacity in terms of staff and resources. By ensuring adaptable technical assistance, the Foundation enabled partnerships to get the support they most needed and that they had the capacity to engage in. (Box 4 provides an overview of the set of technical assistance supports offered. Appendix D1 summarizes each partnership's chosen technical assistance and support.)

Box 4. NGEI technical assistance

NGEI partnerships had access to a range of technical assistance opportunities, detailed here:

Building clinical focus into program design. NCTR's technical assistance to partnerships focused on developing or strengthening a residency-style clinical practice program.[41] NCTR provided four in-person institutes to six participating partnerships. The institutes focused on building the partnerships, program sustainability, teacher candidate and mentor teacher recruitment and selection, and the clinical preparation curriculum. In addition to the institutes, NCTR

provided virtual consulting calls every other week and an in-person site visit to address individual site design needs.

Supporting clinical preparation through high-leverage practices. Added in the second phase, TeachingWorks, based at the University of Michigan, joined NGEI with the goal of building the capacity of individual methods faculty to provide practice-based, justice-focused teacher preparation around a set of "high-leverage practices."[42] TeachingWorks supports included two annual convenings of the fellows, biweekly coaching phone calls, and one in-person campus visit per fellow per year, in which fellows were observed and received feedback on their instruction. In the last year of the initiative, TeachingWorks supported faculty to engage their colleagues in campuswide coursework shifts focused on practice-based, justice-focused teacher preparation.

Building capacity for data use. Continuous improvement support was the only technical assistance provided to all partnerships. Its goal was to support partnerships in strengthening their structures and routines for collecting, analyzing, and using data to make decisions as well as to provide opportunities for cross-partnership learning. The technical assistance was delivered under the leadership of improvement specialists at WestEd, with support from members of the evaluation team, in close partnership with each campus's continuous improvement lead. The continuous improvement work was organized around a total of seven to eight improvement cycles (called "learning sprints"), with each sprint focused on a single learning goal for a period of 90 days. Campuses received ongoing support throughout their learning sprints via coaching calls once or twice a month, and each improvement cycle culminated in a quarterly webinar to share and discuss learnings across partnerships.

Deepening capacity for organizational learning and improvement work. In an effort to build on the successes and address the limitations of the learning sprint support structure, WestEd led year-long Improvement Research Fellowships during 2018–19 and 2019–20.[43] The goal of the fellowships was to deepen the organizational learning and improvement capacity of the CSU teacher preparation system by providing intensive, targeted support to a limited number of programs with a demonstrated interest in this work. Over the course of the two fellowship years, teams from eight CSU campuses and from the Educator Quality Center at the CSU Chancellor's Office participated in five in-person learning sessions

that introduced improvement science concepts tailored to a teacher preparation context and received ongoing coaching between trainings.

Strengthening data infrastructure. In the last year of the grant, campuses were offered optional needs-driven data support. Support was offered to campuses that were experiencing challenges with data collection, management, analysis, or visualization. WestEd provided customized solutions integrated with existing data systems to streamline processes for managing classroom observation data to three campuses.

For example, because a full residency model was not a good fit for every partnership's program needs, NCTR worked with partnerships to implement components that fit their context. When one campus team was unable to get the buy-in from department staff to implement a full residency model, NCTR worked with them to lengthen their clinical placements to be year-long. Candidates thus spent more time in classrooms and were able to experience the entire arc of the school year.[44] Through continued work with NCTR, that same team was able to identify and shift other aspects of their clinical program. They established selection criteria for mentor teachers and began to standardize processes and protocols for clinical observations, which had previously been inconsistent or nonexistent.

Other campuses leveraged NGEI resources to strengthen and expand their existing residencies. (See Box 5 for an example from CSU Bakersfield.)

Box 5. CSU Bakersfield gets the right support at the right time

For CSU Bakersfield, NGEI-supported participation in the NCTR institutes came at the right time. The university was in its second year of implementing a rural teacher residency (funded by a Teacher Quality Partnership grant from the U.S. Department of Education) and the team was looking for guidance to strengthen their residency work. With the NGEI funding, they expanded their residency programming to an urban district, Bakersfield City School District (BCSD), developing the Kern Urban Teacher Residency (KUTR).

Participation in NCTR helped guide their partnership with the district and codify and institutionalize the teacher residency model for the university. Specifically, it helped "define the respective roles in the implementation of the residency, the joint resident and mentor selection process, and the policies, protocols, and routines related to the residency," said Bakersfield's project director (and chair of the Department of Teacher Education).

> For example, for the first KUTR cohort, the district selected mentor teachers based on principals' recommendations. But as part of the NCTR institutes, CSU Bakersfield and BCSD developed a joint process for mentor teacher and resident selection as well as related policy and procedures documents. "Now we have a handbook, website, protocols, everything in writing," said the project director. "NCTR brought [people together from different] institutes to make a decision. [Our program] highly benefited from the documents." They used their new mentor teacher and resident selection processes for cohort two and beyond.
>
> The Bakersfield team credits their ability to effectively engage in NCTR assistance to strong support from leadership, readiness to engage in the work, and strategic vision. Having used what they learned in the NCTR institutes to refine their residency model, they have since continued to expand that model to four other districts in California's Central Valley.

Individualized continuous improvement coaching helped partnerships apply improvement tools, methods, and principles to their day-to-day work. The coaching approach itself represented a significant shift away from the compliance orientation of phase 1, wherein an "internal evaluator" at each campus developed and carried out a campus self-evaluation, while an external consultant conducted progress monitoring.

By contrast, the Foundation emphasized a continuous improvement approach in phase 2 by encouraging partnerships to select one ambitious goal for their grant that could especially benefit from a continuous improvement focus. Partnerships then received structured support for collecting and using data to drive improvement toward that self-selected goal. The coaching delivery mechanisms were adapted along the way based on feedback from partnerships. For example, the evaluation team initially provided continuous improvement support via monthly webinars for CILs and other representatives from all partnerships. However, most partnership teams reported that the whole-group webinars were not useful because the webinars did not seem adequately tailored to their individual contexts. In response, the technical assistance team shifted to providing monthly one-on-one coaching, with less frequent (quarterly) virtual meetings during which teams shared and discussed their work in breakout groups with others who had similar focus areas and contexts.

Some teams had a difficult time balancing the demands of the continuous improvement work with other responsibilities, particularly in cases where the CIL was the only one engaged in the work. In these instances, the evaluation team worked to adapt their support to fit the needs of the partnerships — for example, by preparing models or templates or by helping to draft data collection tools that continuous improvement teams could modify for their context. Over time, most CILs also engaged other staff and faculty in the work, an approach that was encouraged by WestEd and SRI.

Across all the supports, stakeholders noted that having **multiple participants engage in a technical assistance support made that support more productive.** For example, several partnerships reported that having multiple faculty members participate in the TeachingWorks fellowship was important for getting a "critical mass" of support to shift program coursework. Unlike other NGEI supports that were intended to be team-based, TeachingWorks fellowships were for individuals and initially were limited to math methods faculty. Limiting fellowship participation in the first year enabled TeachingWorks to target support to a high-need area (i.e., math methods), and the impact was particularly significant when multiple faculty from the same campus took part. For example, the CIL from one such campus — where math methods faculty from multiple teacher preparation credentialing programs (including the CIL) participated — reported that the result has been a new alignment in math education campuswide. "The cool thing is that no matter which [program] the math candidates are coming from, they're getting similar content and structures in our methods courses."

"The cool thing is that no matter which [program] the math candidates are coming from, they're getting similar content and structures in our methods courses."

Excitement and enthusiasm for the work quickly spread to other faculty, validating the expansion of the TeachingWorks fellowship to include ELA/reading methods.

Team-based technical assistance is impactful and well-received largely because effective improvement work requires team effort, distributed responsibilities, and engaging multiple perspectives on the systems targeted for improvement. At the beginning of the grant, most CILs were carrying out the work alone.[45] As the grant progressed, most teams distributed continuous improvement responsibilities among multiple people. But the work would likely have been strengthened had the importance of a team-based approach to continuous improvement been emphasized to a greater degree at the outset.

Illustrating this point, one team that decided early to commit multiple staff to data-driven continuous improvement later felt confident that their efforts would be sustained long term. At the outset, the project directors in this case brought in an additional faculty member whose sole grant responsibility was serving as CIL. The CIL promptly assembled a data team comprising three graduate assistants to support data collection. The team focused their improvement work on high-impact areas, including using data to analyze and improve course alignment in the Multiple Subject program. The CIL felt confident that the groundwork laid by these efforts under the grant will ensure that a "greater emphasis on using data will continue after the grant."

Over the course of the grant, the Foundation and technical assistance providers continued to collaborate to adapt supports in ways that addressed newly identified gaps or changing needs. For example, evaluation data collected in fall 2019 identified a need for campuses to have stronger

infrastructure for collecting, analyzing, and displaying data. To address this need, the team partnered with interested campuses to identify specific needs and develop custom tools for data collection, management, and analysis, with a focus on classroom observation rubric data. A leader at one of the campuses that participated called this data support "a gift to us that will keep giving," specifically in terms of their new data dashboard. "Now we have a structure using Google Forms and Google Slides that allows us to view and interpret real-time observational data on candidate clinical practice. Without help, we would have never had the time or expertise to create such a useful tool."

Some partnerships felt overwhelmed by the technical assistance opportunities. Although most technical assistance was optional, most grantees wanted to take advantage of as many supports as possible. However, participation in each case required a commitment of time and staff for meetings and deliverables. Taking a team-based approach to engaging with technical supports helped partnerships manage and distribute the workload.

For some partnerships, the sense of overload stemmed partly from imperfect coordination among technical assistance supports. Those participating in multiple technical assistance supports could be at offsite workshops multiple times per year, a significant time commitment. (See Appendix D5 for an overview of one year of supports.) In addition, while the Foundation intended that the supports be complementary, coordination efforts were modest and primarily focused on logistics, such as event timing. As the grant progressed, technical assistance providers recognized the potential burden on the partnerships and better coordinated the content of supports. For example, two providers collaborated to clarify the process for selecting and integrating prioritized skills into a teacher preparation program. (See Appendix D4 for a visual jointly produced as part of that collaboration.) In another example, one provider invited a second provider to some of its workshops to help integrate the strands of support.

Lever 3: Embed Opportunities for Cross-Network Learning and Collaboration

Prior to NGEI, participating CSU campuses and partner districts had few regular opportunities to come together — as teams or as a cross-campus network — to learn and share ideas about improving teacher preparation at scale. NGEI addressed this gap by providing structured, formal opportunities for

- discussing problems of practice and collaborating; and
- learning evidence-based practices from content experts.

Previous large-scale reform efforts like Teachers for a New Era (TNE) and Teacher Effectiveness Initiative (TEI) had demonstrated how learning networks could support learning and collaboration as systems implemented reforms. The primary way the Foundation did so within the network was through in-person convenings geared toward building partnership capacity through collaboration and learning. The Foundation also fostered an NGEI learning community through an initiative-facing website and monthly newsletters that shared information about technical assistance offerings and invited cross-campus resource sharing. "Meet-up" grants were awarded to pairs of CSU campus teams to visit one another and observe and share best practices or collaborate to develop new frameworks, tools, or processes.[46] In addition, technical assistance providers included opportunities for cross-network learning in their work with participating partnerships.

Discussing problems of practice and collaborating

Annual convenings, a cornerstone of the Foundation's approach, brought together district and campus leaders from the 10 NGEI partnerships as well as Foundation staff, system-level leaders, and technical assistance providers. **The convenings provided a mechanism for sharing and collaboration within and across partnerships.** (See Appendix D2 for a sample convening agenda.)

For example, cross-partnership presentations from the continuous improvement learning sprints gave partnerships a venue to (1) present findings from their improvement work with other partnership teams, and (2) learn from successes and problems of practice that others were experiencing as they carried out data-driven improvement work. (See Appendix D3 for sample learning sprint breakout materials.) Within partnerships, campus representatives got space and time to work with district partners to plan mutually beneficial reforms, collaborative efforts that deepened their relationships and strengthened their shared vision.

NGEI also provided space for partnerships to engage in formal and informal networking. Besides breakout groups for sharing updates and challenges, the convenings included an informal cocktail hour and dinner. The interactions in these spaces fostered relationships and opened lines of communication between partnership teams, enabling ongoing strategy and resource sharing beyond the confines of the convenings.

The convenings "helped to unpack our thoughts and reaffirm our work," said one CIL. "It is helpful to connect with people doing similar work in other institutions." A campus leader at another partnership praised the value of the sessions in terms of "networking, receiving, and sharing resources and ideas, getting feedback on our work, and having focused time to work as a team."

The convenings also provided a forum for leaders across the CSU system to engage with the Foundation and the partnership teams and discuss system-level challenges. The Foundation

invited campus deans and representatives from the CSU Chancellor's Office to enable them to engage with participants and the CSU network beyond their roles as "champions for change" at each campus. For example, the Chancellor's Office took the opportunity to present its work on dashboards that display perception data collected systemwide. The Chancellor's Office and the Foundation also leveraged convenings to get feedback from NGEI campus deans, who were invited to the last two convenings to collaborate and plan with their partnership teams and discuss system-level progress and challenges impacting the NGEI network. (Box 6 describes how engaging leaders at the campus and district deepened the impact of NGEI.)

Box 6. Engaging campus leadership in NGEI

While close collaboration between NGEI partnership teams and CSU deans (or those in similar leadership positions) was not required by the grant, collaboration with campus leaders proved to be an important factor for implementation progress and likely for scaling and sustaining the reforms.

While all campus deans were invited to attend the last two convenings, their participation in meetings and planning activities outside of these formal touchpoints varied across partnerships. Deans who were consistently involved throughout implementation were able to use their leadership position to champion their partnerships' reforms and wrangle resources to sustain them. For example, at one campus where the dean was highly engaged in both conceptualizing the NGEI work and in carrying it out, plans were in place by the end of the grant to sustain the use of the partnership-adopted rubric in all of that campus's credentialing programs. That same campus reported that small changes made to the program with support from the grant have resulted in permanent shifts to roles and processes around how candidates are supervised.

The dean credited leadership engagement with fostering increased collaboration, both within the School of Education and across the campus. "I see more collaboration between our departments, which I think is an amazing part of it," the dean said. "We used to see ourselves as siloed teacher preparation programs. Now increased collaboration and conversations within the College of Education have led to increased collaboration across the university." Reflecting on the sustainability of the reforms, the dean added, "Strong programs go forward because the leaders are passionate about the work." If that passion then spreads throughout the institution, "we don't have to worry."[47]

One program lead singled out the importance of the productive relationships that developed as a result of this networking, at convenings and throughout the NGEI work. "We appreciate the diverse connections we have made with faculty across the CSU system, including the Chancellor's Office, through our involvement in NGEI efforts, TeachingWorks, and the Improvement Research Fellowship. These connections are deep and lasting and would likely not have occurred without the generous support of the Foundation."

The Chancellor's Office similarly credited the Foundation's engagement and responsiveness for helping develop productive working relationships that enabled the partnerships to achieve more than expected within the grant's funding and timeline and, importantly, laid the groundwork for sustainability. (See Box 7 for more detail about how the Foundation laid the groundwork for NGEI reforms to be sustained.) The assistant vice chancellor for teacher preparation reported the following:

"The thought partnership that has gone along with this work has been exceptional. The program officer and staff have helped us think through how we develop the project, work closely with clinical partners, and how we ensure that the work is sustained at the end of the grant. Their willingness to be patient with us as we figure out how to do this in a complex system, their encouragement and support while also holding us accountable for what we were going to do — we've gotten just the right amount of support and pressure from the Foundation. Pressure not in a negative way, but we set goals and we need to be accountable."

Box 7. Sustainability of NGEI reforms

NGEI grants to partnerships were designed to transform teacher preparation programs to become more clinically oriented. As the request for proposals for phase 2 indicated, sustainability was a particularly salient focus, given the Foundation's plans for sunset:

"As a limited life foundation, the S. D. Bechtel, Jr. Foundation is also particularly concerned with the sustainability of its funded efforts. As such, all funded projects in the second phase of the NGEI will have robust plans for sustaining their efforts after the end of the grant term. The Foundation is also interested in supporting promising practices that can be scaled across programs and across the system, and has a particular interest in the full transformation of teacher preparation programming as opposed to the creation of additive programming."[48]

The Foundation took deliberate actions throughout the initiative to build system-level supports for sustainability and scaling:

- **Working directly with the Chancellor's Office.** The Foundation leaders' close collaboration with the CSU Chancellor's Office throughout the grant allowed them to share their vision for clinically oriented reforms with system leaders and plan together for how reforms could be sustained and scaled across the CSU system. Throughout the initiative, the Foundation made grants to the Chancellor's Office to support initiative coordination, with particular attention to scaling and sustainability.
- **Scaling to non-NGEI campuses.** The Foundation awarded a collection of "mini-grants" to the 12 non-NGEI CSU campuses in the initiative's final year, bringing NGEI to all 23 campuses. The mini-grants supported those campuses to identify a program area (aligned to the NGEI priority areas) and then launch a targeted continuous improvement effort with support from WestEd. These campuses were invited to attend the final convening to network with, and learn from, the original NGEI partnerships.
- **Partnering with the EdQ Center to build systemwide capacity for continuous improvement.** This action provided the CSU network with lasting improvements to data infrastructure and access. These included the development of a live dashboard, open to CSU staff and faculty, which summarized information from systemwide surveys about CSU teacher preparation program completers. Foundation support also expanded human resources — for example, funding a two-year data scientist role from the Harvard Strategic Data Project fellowship program. The evaluation team provided technical assistance to build the EdQ Center's capacity to meet the data needs of the preparation programs it serves. For example, the evaluation team helped the EdQ Center negotiate a first-ever data-sharing agreement that now allows the center to track employment outcomes of all program completers who take jobs in California public schools, a change that is building the EdQ Center's analytic capacity.[49]

The evaluation team also worked to build the EdQ Center's capacity to support improvement across the system. A team from the center participated, for example, in the first cohort of the Improvement Research Fellowship in 2018–19.[50] In 2019–20 the EdQ data coach also participated in the Improvement Research Fellowship. In 2020, the EdQ Center launched its own network of support, called the Chancellor's Office Learning Lab. Toward the end of the grant, with the evaluation team's support, the center adopted a new strategic plan to enact its revised mission: "To build capacity of CSU educator preparation programs through research, evaluation, and the strategic application of data."[51]

- **Orienting final-year convenings toward scaling and sustainability.** For example, the fall 2018 convening included a session on how one partnership was sustaining funding for its residency program beyond the grant, an effort that required close collaboration with, and buy-in from, high-level district and campus leads. Deans attended to share strategies, give feedback, and discuss sustainability concerns.

It is too early to tell whether and how these efforts will effectively support the long-term sustainability of the many facets of the NGEI reforms. Ultimately, sustainability depends on the work becoming part of normal operating procedures as well as codified in job descriptions and documentation to ensure that even without grants and technical assistance support, and eventual turnover of the faculty, staff, and leadership involved in NGEI, the reforms will be sustained.

Learning evidence-based practices

Technical assistance providers attended network gatherings to share content expertise, disseminate information about evidence-based practices, provide consultation and support, and facilitate cross-network learning that was aligned to the grant and tailored to where partnerships were in their reform journey. At the first convening of newly formed campus–district partnerships in spring 2017, NCTR provided guidance that included defining the characteristics of a strong campus–district partnership. In fall 2017, when many partnerships were still coming to grips with what the prioritized skills were and how to integrate them throughout a program, TeachingWorks provided background about skills-based teacher preparation, foundational knowledge for understanding the role of prioritized skills in a teacher preparation program. Building on this, NCTR demonstrated how prioritized skills should be integrated throughout a candidate's preparation experience, effectively touching on each of the reform's primary elements. (See Appendix D2 for a sample convening agenda and Appendix D4 for a visual from the fall 2017 convening, showing design principles for weaving prioritized skills into a program.[52])

Technical assistance providers also shared key tools to support partnerships in carrying out the reform work. The evaluation team, for example, held sessions orienting partnerships to improvement science tools and methods, giving them the opportunity to practice using the tools and plan how they might apply them to problems of practice.

Encouraged by the Foundation, technical assistance providers sponsored events that served as additional opportunities for cross-partnership learning outside of the annual convenings. These included NCTR institutes, TeachingWorks fellowship meetings, an initial continuous improvement workshop and virtual meetings, and Improvement Research Fellowship workshops. (See Appendix D5 for a one-year NGEI timeline with opportunities for cross-partnership contact.) Box 8 describes

how a technical assistance provider–led networking opportunity helped one partnership articulate its clinical programming for candidates.

Box 8. CSU Stanislaus leveraged cross-network learnings to solve a problem of practice

At the NGEI annual convenings and NCTR institutes, CSU Stanislaus and its two partner districts had formal and informal opportunities to engage with and learn from other partnerships. Particularly valuable, reported the project director, was hearing from other partnership teams working on teacher preparation residencies at the NCTR institutes.

Like other partnerships implementing residencies, CSU Stanislaus faced a major challenge in aligning the clinical placement and coursework so that candidates receive a coherent learning experience. Alignment requires tight coordination and communication across district and campus staff and faculty.

At an NCTR convening, the CSU Bakersfield team presented their solution — a phase-in schedule that outlines which skills and coursework candidates should be learning at each stage of their clinical placement. The schedule also indicates which rubric indicators are relevant to the skills and content candidates are learning, information that supports mentor teachers and supervisors in tailoring their feedback.[53] CSU Stanislaus was able to use this as a model for its own phase-in schedule, which it began implementing in 2017–18.

Conclusion

The Foundation's approach to strengthening teacher preparation in the CSU system was to balance signature requirements aligned to key reform elements with flexibility and a system of supports responsive to grantee needs. This strategy resulted in partnerships making strides in transforming their programs during the three-year NGEI grant period.

Grantees credited the Foundation's engagement and support for helping achieve more than expected within the grant's funding and timeline. Compared with similarly funded grants, "the amount that we've

Compared with similarly funded grants, "the amount that we've been able to accomplish in three years and the level of contact has been just amazing to me."

~ Project Director

been able to accomplish in three years and the level of contact has been just amazing to me," said one project director.

Each of the key levers for change made a difference for the initiative's success. Taken separately, each lever had an impact as follows:

- **Lever 1: Balance grant requirements with flexibility and responsive support.** By requiring partnerships to select a rubric and establish key roles, the Foundation ensured immediate, fundamental change in NGEI's reform areas. By allowing flexibility in implementation, NGEI accommodated partnerships' diverse needs. Partnerships opted into most technical assistance supports, dedicating resources to making changes they believed to be achievable and sustainable in their context. By encouraging partnerships to share challenges and lessons learned during the grant period, the Foundation was able to make "live" midcourse adjustments to its support to best enable partnerships' progress.
- **Lever 2: Customize technical assistance support to meet partnership needs.** Technical assistance providers also tailored their support to partnership needs and encouraged partnerships to select goals for their work together. Providing technical assistance to teams rather than individuals supported stronger buy-in to reforms and helped avoid undue burdens on a single person.
- **Lever 3: Embed opportunities for cross-network learning and collaboration.** Annual cross-network convenings provided partnerships with opportunities to learn from each other and from content experts, network with colleagues and key system leaders, and access ongoing Foundation support. Most partnerships reported that the initiative nurtured new relationships and ways of cross-institutional working that will continue beyond the grant.

Taken together, the levers strengthened the capacity of partnerships and the CSU system for continuous improvement and laid the following groundwork for sustainability of the reforms:

- **Forging learning networks and relationships.** NGEI supports enabled collaboration and learning at multiple levels — across grantees, between district and university partners, and between programs and the CSU Chancellor's Office. For many programs, these professional relationships are likely to be leveraged for knowledge and resources beyond the grant.
- **Allowing partnerships to direct staff and resources toward high-leverage reforms.** By creating roles specifically focused on developing strong campus–district partnerships and data use for continuous improvement, NGEI partnerships gained the capacity to establish key relationships and put in place processes to institutionalize reforms, even when these specific roles would not remain in place beyond the grant period.

- **Encouraging partnerships to focus on the changes most significant to their contexts.** The grant's flexibility and customized support allowed partnerships to focus on implementing reforms in a way that would be authentically responsive to partnerships' needs. Meaningful context-specific reforms meant that partnerships were more likely to build the systems, processes, and roles around these reforms that would allow them to be sustained. In this way, the support from the Foundation became a catalyst that allowed teams to apply their own resources, staff, and knowledge to achieve reform goals.

Recommendations

Supporting reforms to strengthen teacher preparation across multiple institutions within a complex system requires both accountability and flexibility. Reform efforts benefit from a clear framework and goals, while allowing campus–district partnerships the flexibility to implement the reforms in ways that take into account their institutional contexts and the needs of the districts and students they serve. To strike this balance, we offer the following recommendations to policymakers, funders, and other stakeholders involved in planning, implementing, or supporting similar efforts:

- **Hold partnerships accountable for a limited number of changes that are foundational to reform effort outcomes.** Consider which actions or changes are truly critical and have the leverage to achieve systemwide outcomes and devise a framework that will encourage partnerships to make these changes. A clear agenda and a common framework (in NGEI's case, the five reform areas) gird the initiative with a foundation and structure as partnerships work to adapt and sustain reforms within their particular contexts. Requirements, data collection goals, and technical assistance should be aligned to the framework. Clearly articulating requirements from the outset can facilitate buy-in and ensure a smooth start to reform implementation.
- **Provide partnerships with flexibility in how to reach these outcomes.** Embedding flexibility into NGEI's structure supported implementation by allowing grantees to make contextually appropriate decisions about how to move toward outcomes. Flexibility enabled adaptation for changing conditions such as staff turnover or budget shifts. Fundamentally, it allowed partnerships to select technical assistance and support that best met their needs and allowed the Foundation to offer new or different supports along the way based on evidence of progress toward outcomes. Be aware, however, that flexibility on core aspects of the reform may not be helpful. For example, NGEI's option to select an existing rubric or create one led to strains on staff time and resources. Future efforts involving rubric adoption might consider requiring use of an existing rubric.

- **Unify and integrate supports and attend to partnerships' capacity to engage with them.** Coordinating support across technical assistance providers can avert duplication of effort or extraneous burdens on partnerships. The goal is to make it as easy as possible for partnerships to take full advantage of the technical assistance to support deeper, more integrated change. To make sure grantees are both open to and have the capacity to fully engage in particular supports, clear communication about requirements and time commitments upfront is important. Likewise, technical assistance providers should assess team capacity, context, and program needs as a prerequisite for support.
- **Embed opportunities for learning.** Some of the more impactful lessons learned by NGEI partnerships came from other partnerships. These include: make space for this learning and relationship-building to take place, and encourage content experts to facilitate cross-network learning. Also, consider opportunities for integrating common measurement to support continuous improvement and networked learning. In addition to capturing this learning from partnerships, building formative evaluation into the grant structure can provide valuable information about partnerships' experience as well as inform decisions to add or adjust supports to help partnerships move toward outcomes.
- **Engage system-level leaders from the beginning.** The Foundation's partnership with CSU system leaders was critical to supporting alignment between CSU priorities and NGEI efforts and for securing high-level buy-in for reform priorities. NGEI did not formally include or require involvement from campus deans. But partnerships that had leadership engagement throughout the grant were better supported to push through transformative reforms in the three-year time frame as well as to secure the buy-in needed to sustain the reforms.

Appendix A: NGEI Partnership Overviews

Partnership overviews are derived from data collected primarily in the final year of the three-year New Generation of Educators Initiative (NGEI) grant, including interviews with partnership stakeholders and reports to the S. D. Bechtel, Jr. foundation. Each overview below consists of an exhibit (numbers 1-10) that lists the name of the campus and district partner, the credential program(s) targeted by the NGEI reforms, the rubric adopted by the NGEI partnership, and any technical assistance partners with whom the partnership worked. Following each exhibit is a narrative description of the partnership. The descriptions are not meant to be exhaustive, detailing all activities supported by NGEI funds; rather, they describe partnerships' major activities and accomplishments toward the reform's five Key Transformational Elements (detailed in Appendix B). Because data about what would be sustained beyond the grant was incomplete, and largely based on stakeholder predictions, we did not include it in the following descriptions.

Exhibit A1. CSU Bakersfield (CSUB)

Partner District(s)	Bakersfield City School District (BCSD)
Credential Program(s) Targeted by Reforms	Multiple Subject and Single Subject (residents have the opportunity to earn both)
Partnership Rubric	Adapted from the Danielson Framework for Teaching[a]
Technical Assistance Partners	National Center for Teacher Residencies (NCTR), TeachingWorks fellowship, continuous improvement coaching, WestEd Continuous Improvement Fellowship

[a] *Rubric available on the* Educator Quality Center website *or* CSU NGEI website.

CSUB partnered with BCSD to create the Kern Urban Teacher Residency (KUTR), thereby expanding CSUB's pre-existing residency program with three rural school districts. KUTR focused on preparing preservice teacher residents to integrate standards-aligned STEM education into TK–8 by co-teaching alongside mentor teachers. CSUB and BCSD began by co-selecting a rubric to measure their prioritized skills, the Danielson Framework for Teaching. The rubric was adapted and used to assess candidate progress and guide feedback. The half-time district and university partnership coordinators co-led key partnership activities:

- Establishing processes for co-selecting mentor teachers who demonstrated exemplary standards-aligned instruction and placing residents with them in yearlong co-teaching placements

- Increasing opportunities for residents to practice and get feedback on clinical skills by hosting a BCSD-funded Saturday STEM lab school for fifth and sixth grade students. During the lab school, residents could practice delivering Next Generation Science Standards (NGSS) and Common Core State Standards: Mathematics (CCSS-M) lessons with enrolled students, under the guidance of mentor teachers and faculty
- Co-planning and co-teaching math and science methods courses
- Providing training to mentor teachers, supervisors, and candidates on the rubric, including strengthening tools and processes for capturing mentor teacher and supervisor rubric feedback and sharing it with candidates in a timely manner
- Establishing a pathway for all KUTR residents to earn both a Multiple Subject credential and a Single Subject credential in math or science
- Improving the frequency and quality of supervisor feedback to candidates, with continuous improvement coaching support. The coordinators developed a Google Form for supervisors to enter their feedback after each observation and routinely analyze the data to assess how often candidates were being observed and the quality of the feedback they received

As of spring 2019, KUTR was poised to be sustained in BCSD, and CSUB was working to expand its model to three additional districts in California's Central Valley.

Exhibit A2. CSU Channel Islands

Partner District(s)	Ocean View School District (OVSD)[a] University Preparation Charter School (UPCS)
Credential Program(s) Targeted by Reforms	Multiple Subject
Partnership Rubric	In development by spring 2019[b]
Technical Assistance Partners	NCTR

[a] *Ocean View School District withdrew from the NGEI partnership in 2018.*

[b] *Partnerships could choose to develop their own classroom observation rubric, or to select a pre-existing, validated instrument.*

Early in the grant, CSU Channel Islands (CSU CI) partnered with UPCS and OVSD to strengthen integration of the coursework and clinical experiences in Multiple Subject science and math. The science methods faculty member from CSU CI, in collaboration with the science specialist at UPCS, worked to develop a new approach to training mentor teachers. The training included both Multiple

Subject teacher candidates and their mentor teachers, provided foundational NGSS knowledge, and supported the mentor teachers and candidates to co-plan an NGSS-aligned unit. Both the science and math methods teachers took strides to make their courses more clinically oriented. For the math methods professor, this included collaborating with mentor teachers to give candidates in-classroom opportunities to practice with students.

In the last two years of the grant, CSU CI moved beyond its NGEI partnership work to cultivate relationships with stakeholders outside of UPCS and OVSD. They did this by holding focus groups, town hall meetings, and work groups with a wide range of community stakeholders across Ventura County, with the purpose of identifying broader community priorities. It was with these partners that CSU CI collaboratively identified a single prioritized skill, differentiated instruction, and decided to explore the Danielson Framework as its classroom observation rubric. In the last year and a half, CSU CI worked with the Danielson Group and its community partners to adapt the rubric, which it planned to pilot in 2019–20.

Through its work with NCTR, CSU CI also laid the groundwork for teacher residencies with two new partner districts in Ventura County. CSU CI made progress toward strengthening its data infrastructure, using a new data management system called Via by Watermark, which it planned to use for managing signature assignments and candidate evaluations.

Exhibit A3. CSU Chico

Partner District(s)	Chico Unified School District (CUSD)
Credential Program(s) Targeted by Reforms	Most reforms geared toward Multiple Subject credentialing program; rubric implemented with all credentialing programs
Partnership Rubric	Adapted from The New Teacher Project (TNTP) Core Teaching Rubric[a]
Technical Assistance Partners	NCTR, TeachingWorks fellowship, data support, continuous improvement coaching

[a] *Rubric available on the* Educator Quality Center website *or* CSU NGEI website.

The partnership between CSU Chico and CUSD focused on preparing preservice and in-service teachers to teach NGSS through an initiative called the Triad Project. Triad was open to all Multiple Subject (elementary) and Single Subject (middle school) candidates enrolled in a science methods course and placed in CUSD. The partnership began by identifying a rubric to measure their prioritized skills, which were the dimensions of the TNTP Core Teaching Rubric. Each participating candidate was paired with a mentor teacher and a science "content specialist" from CSU Chico (together known as the Triad), with

whom they collaborated throughout the semester to develop and implement a science unit aligned to the NGSS. Triad supports included the following:

- Initial training for candidates and mentor teachers on co-teaching strategies and the NGSS
- Ongoing professional development for mentor teachers and candidates as they co-planned, and prepared to co-teach, their lessons

By spring 2019, the Triad Project had produced nearly 70 NGSS-aligned science units that were published online and incorporated into CUSD teachers' trainings, or given to district teachers to implement. In addition to these partnership reforms, the campus executed additional reforms to improve the clinical orientation of their teacher preparation program. These included the following:

- Implementing a modified version of the TNTP Core Teaching Rubric for observations across all credentialing programs in the School of Education
- Integrating NGSS-aligned, practice-based instruction across science methods courses
- Making practice-based reforms to a Multiple Subject math methods course with support from TeachingWorks
- Strengthening processes for collecting and analyzing rubric data to inform candidate progress, with coaching support from WestEd and SRI International

Exhibit A4. CSU Fresno

Partner District(s)	Central Unified School District (CUSD) Fresno Unified School District (FUSD) Sanger Unified School District (SUSD)
Credential Program(s) Targeted by Reforms	Most reforms geared toward Multiple Subject
Partnership Rubric	Partnership-developed[a] Continuum of Reflective, Engaging, and Accessible Teaching (CREATe) rubric[b]
Technical Assistance Partners	NCTR, data support, continuous improvement coaching, WestEd Continuous Improvement Fellowship

[a] *Partnerships could choose to develop their own classroom observation rubric, or to select a pre-existing, validated instrument.*
[b] *Rubric available on the* Educator Quality Center website *or* CSU NGEI website.

Through NGEI, CSU Fresno deepened three existing district partnerships by establishing a clinical school in FUSD and Teacher Residency Programs (TRPs) in Sanger and CUSD for Multiple Subject candidates. The partnership started by developing and implementing a shared observation rubric, Continuum of Reflective, Engaging, and Accessible Teaching (CREATe). A teacher in residence and

faculty in residence assigned to each partnership executed major partnership activities, including the following:

- Establishing processes for the teacher in residence and faculty in residence to collaboratively recruit, select, place, and guide residents through residency processes, while providing support to mentor teachers
- Providing candidates with ongoing (six times per semester) rubric-based, formative feedback
- Providing mentor teachers and supervisors with rubric training

In addition to these partnership reforms, the campus executed additional reforms to improve the clinical orientation of its teacher preparation program by

- updating Multiple Subject courses to include co-teaching components, including a revamped teacher preparation curriculum with a focus on social justice, culturally and linguistically sustaining pedagogy, teacher inquiry, developmentally appropriate practice, and universal design and universal access;
- strengthening the processes for reviewing and making decisions based on clinical data, by (1) hiring a faculty member to be continuous improvement lead, (2) incorporating rubric feedback into midterm and end-of-semester conversations with candidates, (3) reviewing candidate rubric data at monthly faculty meetings, and (4) surveying candidates to understand the quality of feedback they received from mentor teachers and supervisors. With data support from WestEd, the partnership also worked to conduct a validation study comparing the CREATe rubric to TNTP Core Teaching Rubric.

Exhibit A5. CSU Fullerton (CSUF)

Partner District(s)	Chico Unified School District (CUSD)
Credential Program(s) Targeted by Reforms	Most reforms geared toward Multiple Subject credentialing program; rubric implemented with all credentialing programs
Partnership Rubric	Adapted from The New Teacher Project (TNTP) Core Teaching Rubric[a]
Technical Assistance Partners	NCTR, TeachingWorks fellowship, data support, continuous improvement coaching

[a] *Rubric available on the* Educator Quality Center website *or* CSU NGEI website.

The NGEI partnership between CSUF and its partner districts focused on strengthening a residency program established in the first phase of the grant, Titan EDUCATOR, in AUHSD, and expanding it to two additional partner districts, OUSD and PYLUSD. The residency program benefitted candidates in the Multiple Subject, Education Specialist, and Single Subject programs. With input from partner districts, CSU Fullerton chose to adopt the Mathematics Classroom Observation Protocol for Practices (MCOP2) rubric. Notably, faculty from all three credential areas were engaged with the NGEI reforms, which supported the implementation of residency elements across the School of Education, including two new roles: professional development facilitators and clinical coaches. Professional development facilitators were faculty members from the credentialing programs who supported partnership activities in each partner district, including trainings for mentor teachers. Clinical coaches were a reconfigured university supervisor role that provided clinical support to both candidates and master teachers. Campus and district leaders worked to sustain key clinical reforms in AUHSD and expand them to OUSD and PYLUSD, including

- continuing and scaling key clinical structures into OUSD and PYLUSD: (1) anchor schools; (2) professional development facilitator and clinical coach roles; and (3) yearlong placements following the district calendar;
- offering Multiple Subject methods courses and reflective learning walks at partner district anchor schools;
- training mentor teachers and clinical coaches on the MCOP2 rubric and co-teaching; and
- implementing "focused visits" (when a coach conducts an observation of a candidate with one to two of the California Teacher Preparation Expectations as the focus of the observation) for coaches in all three credentialing programs.

In addition to these partnership reforms, the campus executed reforms to improve the clinical orientation of its teacher preparation program by

- streamlining processes for collecting and sharing feedback with candidates by developing a single observation form for coaches to use during clinical observations;
- making practice-based reforms to math methods courses across all three credential programs with support from TeachingWorks; and
- establishing new data routines, including (1) reviewing rubric data every semester; (2) working with the continuous improvement team to develop and begin administering an end-of-semester survey; and (3) beginning to conduct end-of-semester focus groups with teacher candidates, clinical coaches/university supervisors, and mentor teachers to assess all aspects of the teacher preparation program.

In the last year of the grant, CSU Fullerton took lessons learned during MCOP2 implementation and began developing a science classroom observation protocol (SCOP) to provide feedback specific to science instruction.

Exhibit A6. CSU Long Beach (CSULB)

Partner District(s)[a]	Garden Grove Unified School District (GGUSD) Little Lake City School District (LLCSD) Long Beach Unified School District (LBUSD) Los Angeles Unified School District (LAUSD) Magnolia School District (MSD) Ocean View School District (OVSD) Paramount Unified School District (PUSD) Santa Ana Unified School District (SAUSD) Savanna Elementary School District (SESD)
Credential Program(s) Targeted by Reforms	Multiple Subject; Urban Dual Credential Program (UDCP)
Partnership Rubric	Partnership-developed rubric[b,c] based on the California Teaching Performance Expectations (TPE) and California Standards for the Teaching Profession (CSTP)
Technical Assistance Partners	Data support, continuous improvement coaching

[a] *LBUSD joined the NGEI partnership team in phase 1. All other districts joined in 2017–18 except for Magnolia, Savanna, and Garden Grove, which joined in 2018–19.*

[b] *Partnerships could choose to develop their own classroom observation rubric, or to select a pre-existing, validated instrument.*

[c] *Rubric available on the* Educator Quality Center website *or* CSU NGEI website.

CSULB's NGEI reforms spread across the Multiple Subject credential program and Urban Dual Credential Program (UDCP), so reforms impacted all nine partner school districts where candidates were placed. However, LBUSD has been CSULB's primary district partner since phase 1 of the NGEI grant. Through NGEI, CSULB worked with partner districts to provide all Multiple Subject preservice candidates with an integrated yearlong clinical experience alongside a high-quality mentor teacher in the Clinical Practice Network (the network of high-quality mentor teachers who received training and support in mentoring, co-teaching, and the NGEI rubric). A major focus was establishing and integrating its rubric, which was based on the TPE and California Standards for the Teaching Profession (CSTP). Leaders from CSULB and its partner districts executed key partnership activities:

- Developing and implementing the clinical 1, 2, and 3 sequence (which included early field experience, early field experiences as they relate to methods courses, and student teaching, respectively) for Multiple Subject candidates' clinical practice
- Establishing anchor schools and recruiting a cadre of mentor teachers
- Providing mentor teachers with training for mentoring, co-teaching, and using the rubric

The anchor schools, the clinical 1–3 sequence, and training for mentor teachers were first implemented in phase 1. Phase 2 focused on integrating the rubric into these structures and throughout the preservice teacher experience. In addition to these partnership reforms, the campus executed reforms to improve the clinical orientation of its teacher preparation program:

- Establishing an Office of Clinical Practice (OCP) at the School of Education to oversee anchor school selection, mentor teacher selection, and candidate placements at anchor schools
- Integrating the rubric into trainings for Multiple Subject and UDCP mentor teachers and university supervisors
- Using the rubric to assess Multiple Subject candidates' progress during their clinical placement and to determine whether candidates could progress through the program
- Streamlining its system for collecting and analyzing rubric data by working with the data support team from WestEd and SRI to develop and refine regular routines for analyzing rubric data

As of spring 2019, the partnership planned to expand rubric implementation to the Education Specialist program as well.

Exhibit A7. CSU Monterey Bay (CSUMB)

Partner District(s)	Monterey Peninsula Unified School District (MPUSD) Salinas City School District (SCSD) Salinas Union High School District (SUHSD)
Credential Program(s) Targeted by Reforms	Multiple Subject, Single Subject, Education Specialist
Partnership Rubric	Partnership-developed[a] STEM prioritized skills rubric[b] measures high-quality STEM instructional "moves"
Technical Assistance Partners	NCTR, TeachingWorks fellowship, continuous improvement coaching

[a] *Partnerships could choose to develop their own classroom observation rubric, or to select a pre-existing, validated instrument.*

[b] *Rubric available on the* Educator Quality Center website *or* CSU NGEI website.

CSUMB partnered with three districts for NGEI, although the bulk of reforms were implemented in their partnership with MPUSD. Leaders from CSUMB and MPUSD collaborated to provide MPUSD teachers with STEM-based professional development and to improve preservice supports to better prepare candidates to teach science in the district. Their work started by developing a STEM rubric that defined high-quality STEM instructional behaviors, based on the California Teaching Performance Expectations (TPE). Specific partnership activities focused on

- increasing opportunities for candidates to practice STEM skills by implementing an after-school program called Stone Soup, during which candidates delivered science lessons to MPUSD students;
- implementing two new residencies with partner districts: (1) an Education Specialist residency with Salinas City School District, and (2) a Single Subject residency with Salinas Union High School District;
- implementing new clinical structures and processes, including (1) identifying anchor sites, (2) creating mentor teacher and school selection criteria, and (3) developing a gradual release of responsibility document specifying how mentor teachers should support candidates throughout the year; and
- providing training and coaching to MPUSD teachers and candidates; major topics included high-quality STEM instruction, co-teaching, NGSS, and an MPUSD-adopted curriculum (STEM Scopes).

In addition to these partnership reforms, the campus executed reforms to improve the clinical orientation of its teacher preparation program by

- incorporating the STEM rubric into the feedback and assessment of Multiple Subject candidates during observations of science lessons and during science and math methods courses;
- providing training to supervisors (called "clinical coaches") focused on how to give high-quality feedback that is aligned to the rubric;
- making practice-based reforms to Multiple Subject math and science methods courses with support from TeachingWorks. By the end of the grant, coursework reforms had also spread to Single Subject English language arts (ELA), math, and science methods courses; and
- implementing new processes for capturing rubric-aligned feedback and using data to assess candidate progress.

Notably, the partnership's early STEM-focused work lay the groundwork for the later development of a content-agnostic TPE-based rubric that was implemented across the Multiple and Single Subject credentialing programs.

Exhibit A8. CSU Sacramento

Partner District(s)	Sacramento City Unified School District (SCUSD)
Credential Program(s) Targeted by Reforms	Multiple Subject credential students placed in SCUSD
Partnership Rubric	Partnership-developed rubric,[a,b] derived from the California Teaching Performance Expectations (TPE), and a district tool aligned to the Common Core State Math Standards (CCSS-M) and used in classroom observations
Technical Assistance Partners	NCTR, TeachingWorks fellowship, continuous improvement coaching

[a] *Partnerships could choose to develop their own classroom observation rubric, or to select a pre-existing, validated instrument.*
[b] *Rubric available on the* Educator Quality Center website *or* CSU NGEI website.

CSU Sacramento and SCUSD's partnership focused on strengthening the clinical orientation of their program for all Multiple Subject candidates placed in SCUSD. The partnership engaged in a collaborative process to identify prioritized skills; through this process, they co-developed a partnership rubric, called the Prioritized Skills Profile (PSP). Faculty from the campus worked with district leads to execute partnership activities by

- extending clinical placements to be yearlong rather than semester-long;
- leading trainings for mentor teachers and supervisors about prioritized skills, co-teaching, clinically oriented preparation, and feedback;
- leading trainings for university faculty focused on how to create assignments incorporating the prioritized skills into their courses as well as how to observe and give feedback on the prioritized skills in course and clinical experience contexts;
- establishing an application process for all SCUSD teachers seeking to be mentor teachers;
- strengthening the pipeline of candidates hired to the district by establishing an early decision timeline for candidates coming from CSU Sacramento; and
- developing and beginning to implement standard processes for supervisors and mentor teachers to give consistent feedback aligned to prioritized skills; although the PSP was no longer in use by spring of 2019, four of the prioritized skills were embedded into the midterm and final clinical evaluations to collect formative data on candidate progress.

In addition to these partnership reforms, the campus made practice-based reforms to English Language Arts and math methods courses through participation in the TeachingWorks fellowship.

Exhibit A9. California Polytechnic University, San Luis Obispo (Cal Poly SLO)

Partner District(s)	Lucia Mar Unified School District (LMUSD) San Luis Coastal Unified School District (SLCUSD)
Credential Program(s) Targeted by Reforms	Mostly geared toward candidates placed in K–8 classrooms (this included Multiple, Single, and Special Education programs). Coursework reforms and use of the observation rubric were implemented across all credentialing areas.
Partnership Rubric	Clinical Observation Rubric (called the School of Education Observation Tool),[a] inspired by the Danielson Framework for Teaching
Technical Assistance Partners	TeachingWorks fellowship, continuous improvement coaching, WestEd Continuous Improvement Fellowship

[a] *Rubric available on the* Educator Quality Center website *or* CSU NGEI website.

Cal Poly SLO worked with two partner districts throughout the grant. The first, LMUSD, was the pilot site for the partnership model that Cal Poly later replicated with its second partner district, SLCUSD. The partnership's rubric was inspired by the Danielson Framework for Teaching; however, the partnership modified it for the preservice context by aligning it to the California Teaching Performance Expectations and adding skills focused on supporting emergent bilinguals and students with disabilities. To facilitate campus–district collaboration, each partnership included an advisory board of campus and district leaders and both a partnership liaison (a university faculty member) and a district liaison (a district teacher on special assignment). Together, campus leads, the partnership liaison, and the district liaison at each partner district worked to execute key partnership activities, including:

- selecting mentor teachers;
- providing mentor teachers with training for giving high-quality, rubric-based feedback;
- providing district teachers with other needs-based professional development supporting standards-aligned instruction; and
- launching the New Teacher Learning Community (NTLC) in LMUSD to provide early career teachers with professional development and support.

In addition to these partnership reforms, the campus executed reforms to improve the clinical orientation of its TPP:

- Establishing a standard observation tool for supervision across the entire School of Education
- Making practice-based coursework reforms to ELA and math methods courses through participation in the TeachingWorks fellowship
- Integrating the prioritized skills throughout the candidate experience by (1) developing seven online learning modules describing the prioritized skills, (2) embedding the modules into coursework expectations, and (3) focusing candidate observations and feedback on prioritized skills
- Improving data structures and routines by (1) implementing new processes for using rubric data for program improvement, and (2) developing a data review protocol to integrate data-driven conversations into program meetings

Notably, the university NGEI team included faculty representation from the three main credentialing programs, which helped the campus faculty implement reforms schoolwide. The partnership also improved its use of data to drive decision-making via participation in continuous improvement coaching. The continuous improvement work surfaced a need to improve supports for early career teachers, which prompted the partnership to create the NTLC.

Exhibit A10. CSU Stanislaus

Partner District(s)	Ceres Unified School District (CUSD) Turlock Unified School District (TUSD)
Credential Program(s) Targeted by Reforms	Multiple Subject
Partnership Rubric	5D+ Dimensions of Teaching and Learning[a]
Technical Assistance Partners	NCTR, TeachingWorks fellowship, continuous improvement coaching, data support

[a] *Rubric available on the* Educator Quality Center website *or* CSU NGEI website.

CSU Stanislaus partnered with CUSD and TUSD to strengthen the clinical preparation of Multiple Subject candidates as defined by their prioritized skills. The campus and partner districts co-selected the 5D+ Dimensions of Teaching and Learning rubric for supervisors and mentor teachers to use when giving candidates feedback. Campus leads and the induction coordinator at each partner district worked together to execute key partnership activities:

- Creating the Warriors Teach! residency pathway in the final year of the grant for Multiple Subject candidates placed in CUSD and TUSD
- Developing new processes for selecting anchor schools and placing candidates
- Leading trainings for mentor teachers on co-teaching strategies
- Leading trainings for university supervisors on the 5D+ rubric and providing rubric-aligned feedback
- Establishing more defined and developed processes for supervisors to provide rubric-aligned feedback throughout their clinical placement
- Strengthening the link between candidate preparation and hiring/induction in the partner district
- Launching the Next Generation Science Standards (NGSS) Collaborative that gave district teachers the opportunity to receive professional development on the NGSS and develop an NGSS-aligned science unit in partnership with a science university faculty member[i]

i. This initiative was inspired by CSU Chico's Triad Project.

In addition to these partnership reforms, the campus executed reforms to improve the clinical orientation of its teacher preparation program:

- Making practice-based reforms to three English Language Arts and math methods courses with support from the TeachingWorks fellowship
- Improving data-driven decision-making through continuous improvement coaching work, which included (1) engaging a data manager to handle and process all NGEI data, (2) developing a data management plan to systematically collect survey feedback from candidates about mentor teacher and supervisor quality, and (3) using data from these surveys to make decisions about mentor teacher and supervisor selection

Appendix B: NGEI Key Transformational Elements

The New Generation of Educators Initiative (NGEI) Key Transformational Elements (KTE) grounded all grant activities and were the framework for partnership reform efforts. The NGEI steering committee developed the original KTEs in 2015 prior to phase 1 of the NGEI grant, then updated the KTEs in 2016 based on learnings from phase 1. The following lists each KTE and its related goal.

KTE #1 Partnership

Maintain and deepen partnerships between the CSU campus and the K–12 districts that hire the teachers trained by funded pathway(s), using data about student populations, instructional practices, and hiring projections to align programming as much as possible to local needs.

KTE #1 goal: By the 2018–2019 school year, at least 75 percent of teachers hired by the partner district from the partner CSU will have been prepared via a partnership program. The campus and district will each have at least one staff member spending at least 0.5 full-time equivalent (FTE) on maintenance of the partnership, with sustainable funding in place to continue these roles.

KTE #2 Prioritized Skills

Identify, in partnership, the key skills, knowledge, and dispositions ("prioritized skills") of a well-prepared new teacher. Ensure that this set of prioritized skills is aligned to the requirements of the Common Core and Next Generation Science Standards (NGSS). Select an appropriate rubric to measure progress toward these prioritized skills. Where appropriate, demonstrate alignment with Teaching Performance Expectations and district-identified teaching effectiveness frameworks.

KTE #2 goal: By the 2018–2019 school year, teachers prepared in a partnership program will be required to demonstrate competency with prioritized skills. These skills will be determined in partnership and drawn from the TPE and an instructional rubric, for example, Danielson Framework for Teaching, TAP Instructional Rubric, the district's own rubric, or a different approved rubric.

KTE #3 Practice-Based Clinical Preparation

Build and refine opportunities for candidates to gain fluency with prioritized skills during clinical preparation.

KTE #3 goal: By the 2018–2019 school year, teacher candidates prepared in partnership programs will be placed in clinical settings explicitly designed to allow them to build facility with prioritized skills. Ideally, these clinical settings will include well-designed co-teaching opportunities that span a full school year. Clinical experiences will include multiple opportunities to demonstrate competency with prioritized skills.

KTE #4 Formative Feedback on Prioritized Skills

Identify and continue to strengthen opportunities for candidates to receive feedback on their mastery of prioritized skills during clinical preparation. Structure opportunities for feedback from faculty as well as from strategically selected, well-supported cooperating teachers.

KTE #4 goal: By the 2018–2019 school year, partnerships will establish protocols for selecting and preparing cooperating teachers, field supervisors (or similar role), and faculty such that all parties can give feedback on the same prioritized skills. Candidates will receive feedback on their competency with prioritized skills multiple times throughout the clinical experience.

KTE #5 Data-Driven Continuous Improvement

Collect data on candidate progress toward facility with prioritized skills during preparation and after graduation, building data-sharing partnerships where necessary to ensure access to information. Use this data to effect changes at the college, department, pathway, course, and coaching relationships levels. Continue to use data to refine definition of the prioritized skills new teachers must master.

KTE #5 goal: By the 2018–2019 school year, partnerships will establish routines for reviewing data on individual candidates' progress toward competency with prioritized skills to inform coaching and teaching during the school year. In addition, partnerships will have routines to review longitudinal data on year-end candidate surveys, one-year-out candidate and supervisor surveys, district ratings of new teacher effectiveness, and other data that can continue to inform the partnership. Partnerships will be able to identify meaningful programmatic changes made as a result of this data.

Appendix C: Evaluation Data and Methods

WestEd and SRI International conducted a formative evaluation to track New Generation of Educators Initiative (NGEI) implementation at 10[ii] campus–district partnerships that participated in NGEI, which spanned fall 2016 through spring 2019.[iii]

NGEI aimed to introduce clinically oriented reforms to teacher preparation across the California State University (CSU) system, thereby increasing the number of new teachers in California prepared to deliver standards-aligned instruction.[iv] Each of the 10 grantee campuses partnered with one or more school districts to implement reforms grounded in the Foundation's reform framework, operationalized by five key transformational elements (KTEs):[v]

- Partnership between campus and district
- Identification of prioritized skills
- Development of practice-based clinical preparation
- Provision of formative feedback on prioritized skills
- Engagement in data-driven continuous improvement

To evaluate progress toward these five KTEs and provide formative feedback to the grantee partnerships and the S. D. Bechtel, Jr. Foundation, evaluators from SRI and WestEd collected qualitative data and artifacts from each campus–district partnership twice annually between fall 2016 and spring 2019.

ii. NGEI began with 11 campuses, but one campus chose to end its participation in 2017. We focus on findings for the 10 campuses who participated for the entire grant period.

iii. The first phase of NGEI, which lasted from winter 2015 to summer 2016, included partnerships that continued into phase 2; however, this paper series focuses primarily on outcomes and lessons learned from the evaluation of phase 2 reforms (hereafter known as "NGEI"), unless specifically noted.

iv. The phrase "standards-aligned instruction" refers to instruction aligned with California's Common Core State Standards (CCSS) and Next Generation Science Standards (NGSS).

v. Detailed in Appendix B.

Data sources

The findings in this report series were distilled primarily from interviews conducted with stakeholders from the 10 partnerships in spring 2019, the final year of the evaluation. The evaluation team supplemented spring 2019 data with interviews, artifacts, reporting documents, and ongoing communications with project directors, foundation staff, and technical assistance staff throughout the three-year initiative. Sample artifacts included documentation of the partnerships' prioritized skills, classroom observation rubrics, training materials used to norm observers on each site's classroom observation rubric, and documentation of structures and processes.

To develop the findings, researchers collected and triangulated perspectives of various stakeholders from spring 2019 interviews, including principal investigators or project directors, continuous improvement leads, university supervisors, methods professors, district partners or liaisons, K–12 school administrators, mentor teachers, preservice teacher candidates, and others, including high-level campus and district leaders. Spring 2019 interviews were semistructured and role-specific; the evaluation team drew on partnership-specific program information collected throughout the initiative to tailor spring 2019 interviews. Interviews included questions about the KTEs, the sustainability of NGEI reforms, the implementation of NGEI activities, and how those activities supported progress toward the five KTEs.

The authors and their research teams interviewed or conducted focus groups with 238 informants in spring 2019, as summarized in the following table. We include interview counts from all three years of the evaluation to represent the full range of qualitative data collected.

Exhibit C1. Interviews conducted between 2016 and 2019

Role	Spring 2019 Interviews	Spring 2018 Interviews	Spring 2017 Interviews	Spring 2016 Interviews
Principal Investigators/ Project Directors	19	22	76 university-based staff/faculty	14
Continuous Improvement Leads	11	12	76 university-based staff/faculty	N/A
University Supervisors	35	30	76 university-based staff/faculty	18
Methods Professors	23	24	76 university-based staff/faculty	N/A
District Partners/ Liaisons	24	23	51 district-based staff	N/A
K–12 School Administrators	17	11	51 district-based staff	7
Mentor Teachers	42	43	44	20
Preservice Teacher Candidates	58	60	66	18
Other[a]	24	28	N/A	N/A
Total	238	253	237	77

[a] *Including high-level leaders at the campus (e.g., dean or department chair) and district (e.g., superintendent or chief academic officer).*

Spring 2019 analysis

The research team analyzed spring 2019 interview transcripts by coding them for responses relating to each KTE and then synthesizing findings by KTE at the partnership level. The research team met several times to discuss emerging findings and identify trends across partnerships. Researchers then identified cross-cutting themes and generated analytical summaries specific to each KTE area. These analytical summaries were used in conjunction with other data (detailed previously in the "data sources" section) to distill paper-specific findings. The collaborative and iterative nature of the data analysis allowed the research team to minimize bias and rely on themes and ideas that emerged directly from the data.

Extant data and other analyses

Periodically, throughout the evaluation, the research team also collected and analyzed extant data sources, including the annual survey administered by the Educator Quality (EdQ) Center to all CSU teacher preparation program completers,[vi] classroom observation data submitted to the Foundation by most programs,[vii] classroom observations of in-service teacher practice from one partnership, and K–12 student surveys from one partnership.

Some of these extant data have been reported on in other publications, but the research team chose not to include them in this paper series due to data limitations that would inhibit the utility of the analysis. For example, we did not include analysis of the EdQ Center's completer survey data because the EdQ Center is not yet able to link NGEI participants with their completer survey records.

Included in the final reporting is analysis of participation, completion, and employment patterns using a merged dataset created by the WestEd team in partnership with the EdQ Center that included NGEI participation data collected for the evaluation; completer records collected by the EdQ Center; and completer employment records from the California Department of Education. This analysis is described in Appendix E of the the second paper in this series: Torre Gibney, D., Rutherford-Quach, S., Milby, A., Lam, A., & White, M. E. (2020). *Building strong partnerships to improve clinically oriented teacher preparation.* WestEd.

vi. See the following for more detail on our methods and findings: Torre, D., White, M., & Gallagher, A. (2017). *Examining teacher preparation program feedback from CSU systemwide survey data: Using the CTQ completer survey to support data-driven continuous improvement.* SRI International and WestEd.

vii. See the following for more detail on our methods and findings: Torre, D., Gallagher, A., & White, M. E. (2017). *Examining classroom observation rubric data: Issues emerging from classroom observation rubric data submitted in August 2017.* SRI International and WestEd.

Appendix D: System of Support Artifacts

Appendix D1. Overview of the timing of NGEI technical assistance and which technical assistance supports partnerships participated in by year.[viii]

Campus	Phase 1 2015–16	Phase 2 2016–17 NCTR	Phase 2 2016–17 NCTR	Phase 2 2017–18 CI	Phase 2 2017–18 TWF	Phase 2 2017–18 CI	Phase 2 2017–18 IRF	Phase 2 2018–19 NCTR	Phase 2 2018–19 TWF	Phase 2 2018–19 CI	Phase 2 2018–19 IRF	Phase 2 2018–19 DS
CSU Bakersfield	Not in phase 1	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	
CSU Channel Islands	✓					✓			✓			
CSU Chico	Not in phase 1		✓		✓	✓			✓	✓		✓
CSU Fresno	✓		✓	✓		✓	✓	✓		✓	✓	✓
CSU Fullerton	✓		✓		✓				✓	✓		
CSU Long Beach	✓		✓			✓				✓		✓
CSU Monterey Bay	Not in phase 1		✓	✓	✓	✓		✓	✓			
CSU Northridge[a]	✓	Not in phase 2	Not in phase 2	Not in phase 2	Not in phase 2	Not in phase 2	Not in phase 2	Not in phase 2	Not in phase 2	Not in phase 2	Not in phase 2	Not in phase 2
CSU Sacramento	Not in phase 1	✓	✓	✓	✓	✓		✓	✓	✓		✓
CSU San Luis Obispo	✓		✓		✓	✓	✓		✓	✓	✓	
CSU Stanislaus	✓	✓	✓	✓	✓	✓		✓	✓	✓		✓
CalStateTEACH[b]	✓	Not in phase 2	Not in phase 2	Not in phase 2	Not in phase 2	Not in phase 2	Not in phase 2	Not in phase 2	Not in phase 2	Not in phase 2	Not in phase 2	Not in phase 2

Notes: NCTR: National Center for Teaching Residences; TWF: TeachingWorks Fellowship; CI: Continuous Improvement; IRF: Improvement Research Fellowship; DS: Data Support

[a] This partnership did not receive grant funds for phase 2 of NGEI.

[b] This partnership did not receive grant funds for phase 2 of NGEI.

viii. All partnerships in phase 1 and phase 2 participated in annual convenings and biannual formative evaluation from the evaluation team. These components were required by the grant.

Appendix D2. Excerpt from spring 2017 convening agenda

New Generation of Educators Initiative (NGEI) Learning Community
2017 Convening Agenda
April 4–5, 2017
California State University, Bakersfield

The purpose of this convening is to engage CSU campus and district partner teams in thematic discussions that will advance their NGEI projects related to

- partnership development including formalizing agreements, roles, and responsibilities and streamlining processes between CSU campus and district partners;
- recruiting, selecting, and supporting of mentor teachers; and
- using data to inform program modifications including use of newly adopted observation rubric.

Agenda:

8:00-8:30 a.m.	**Check-in, Breakfast, and Networking**
8:15-8:30 a.m.	**Project Lead and Continuous Improvement Lead Meeting**
8:30-9:00 a.m.	**Walk to Convening Room and Campus Tour**
9:00-9:30 a.m.	**Welcome and Getting Started** • Convening Welcome – CSU Bakersfield • Foundation Welcome – Bechtel Foundation • Getting Started – ConsultEd
9:30 a.m.-12:45 p.m.	**Partnership Development** • Priming Presentation - National Center for Teacher Residencies (NCTR) • Grantee Presentation – CSU Fresno and Sanger Unified School District • Break • Team Work Time with Focused Activity (30 minutes) • Capture Next Steps, Further Research/Conversations, Challenges (15 minutes) • Report Out – Large Group Report Out from Each Group • Networking Lunch – Multipurpose Room

9:00-9:30 a.m. **Welcome and Getting Started**

- Convening Welcome – CSU Bakersfield
- Foundation Welcome – Bechtel Foundation

12:45-2:30 p.m. **Continuous Improvement**

- Continuous Improvement – WestEd
- Small Group Discussions – Breakout Rooms
- Break

2:30-4:35 p.m. **Recruiting, Selecting, and Supporting Mentors**

- Priming Presentation – Seattle Teacher Residency (STR)
- Grantee Presentation – CSU Bakersfield and Bakersfield City School District
- Break
- Team Work Time with Focused Activity (30 minutes)
- Capture Next Steps, Further Research/Conversations, Challenges (15 minutes)
- Report Out – Large Group Report Out from Each Group

4:35-6:00 p.m. **Discussion and Wrap-Up**

- Cross Team Discussions on Subtopics from Today
- Project Director and Assessing Impact on Teacher Candidates
- Funding Clinical Preparation/Residency Programs
- Candidate Data Management Systems
- Feedback Cycles/Sequencing of Trainings for Mentor Teachers
- Positioning Mentor Teachers as Partners in Teacher Preparation
- Characteristics of an Effective Partnership
- Day Wrap-up
- Dinner

Appendix D3. Learning sprint breakout agenda (October 2018)

Agenda:

8:00-8:30 a.m.	**Check-in, Breakfast, and Networking**
8:15-8:30 a.m.	**Project Lead and Continuous Improvement Lead Meeting**
8:30-9:00 a.m.	**Walk to Convening Room and Campus Tour**
9:00-9:30 a.m.	**Welcome and Getting Started** • Convening Welcome – CSU Bakersfield • Foundation Welcome – Bechtel Foundation • Getting Started – ConsultEd
1:00–1:10	**Introduce NGEI Workshop Process**
1:10–2:00	**Small Group Breakouts**
2:00–2:15	**Whole Group Debrief**

Facilitator Responsibilities

- Set up slides for projection
- Remind teams of the process/protocol for sharing and feedback
    - 10 minutes of presentation time per team
    - 15 minutes of feedback/discussion. Encourage participants to
        - Wear their "improvement hats" rather than their "content expert hats"
        - Start with clarifying questions
        - Move to warm feedback
        - End with cool feedback
- Keep time for the presenters and signal transitions
- Prompt in an improvement direction
    - **Probe to understand the problem:** Why? What are we learning about why the problem exists?
    - **Clarify the aim:** What are we (really) trying to accomplish? How will we know?

- **Connect the dots:** How does X [activity, change] help achieve the aim? Are we responding/adapting to what we're learning?
- **Surface key assumptions:** It sounds like we believe Y [idea, theory, mental model]; is that right?
- **Consolidate knowledge:** It sounds like what you're learning is Z [evidence-based statement]; is that correct?

Groups:

Group 1: Monterey Bay; Bakersfield
Non-presenter: Channel Islands

Group 2: Stanislaus; EdQ
Non-presenter: Long Beach

Group 3: Sacramento; SLO
Non-presenter: Fullerton

Group 4: Chico; Fresno – Ballroom
Non-presenter: N/A

Appendix D4. NCTR/WestEd visual - Integration of prioritized skills into teacher preparation program (Fall 2017 convening)

Appendix D5. Overview of one year of NGEI and technical assistance touchpoints[ix]

Technical Assistance Touchpoint	July	August	Sept	Oct	Nov	Dec	Jan	Feb	March	April	May	June
NCTR: Institutes			✓	✓	✓			✓				
NCTR: Coaching Calls		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
NCTR: Site Visits										✓		
TeachingWorks: Fellowship Meetings											✓	
TeachingWorks: Coaching Calls		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
TeachingWorks: Site Visits										✓		
Continuous Improvement: Coaching Calls		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Continuous Improvement: Virtual Meetings			✓			✓	✓			✓		
Improvement Research Fellowship: Learning Sessions	✓	✓	✓			✓		✓		✓		

ix. Five partnerships participated in NCTR; 8 partnerships participated in TeachingWorks; 9 partnerships participated in continuous improvement coaching; 3 partnerships participated in the Improvement Research Fellowship; 5 partnerships participated in Data Support; and all partnerships participated in formative evaluation and the NGEI convenings.

Appendix D5. Continued

Technical Assistance Touchpoint	July	August	Sept	Oct	Nov	Dec	Jan	Feb	March	April	May	June
Data Support:[x] **Custom Consultation and Tool Creation**							✓	✓	✓	✓		
Formative Evaluation: Site Visits and Site-Specific Debriefs				✓	✓				✓	✓		
Formative Evaluation: Convening Support									✓	✓		
Network Convenings										✓		

x. Data support was only offered in the final year of NGEI.

Endnotes

1. National Commission on Teaching & America's Future. (1996). *What matters most: Teaching for America's future: Report of the National Commission on Teaching & America's Future.* https://www.edweek.org/media/what_matters.pdf

   Feuer, M. J., Floden, R. E., Chudowsky, N., & Ahn, J. (2013). *Evaluation of teacher preparation programs: Purposes, methods, and policy options.* National Academy of Education. https://files.eric.ed.gov/fulltext/ED565694.pdf

   National Research Council. (2010). *Preparing teachers: Building evidence for sound policy.* https://www.nap.edu/catalog/12882/preparing-teachers-building-evidence-for-sound-policy

   Allen, M., Coble, C., & Crowe, E. (2014). *Building an evidence-based system for teacher preparation. Teacher preparation analytics.* https://www.angelo.edu/content/files/21316-building-an-evidence-based-system.pdf

   Cochran-Smith, M., Stern, R., Sanchez, J. G., Miller, A. F., Stringer Keefe, E., Fernández, M. B., ... Baker, M. (2016). *Holding teacher preparation accountable: A review of claims and evidence.* National Education Policy Center. https://eric.ed.gov/?id=ED574703

   DeMonte, J. (2015). *A million new teachers are coming: Will they be ready to teach?* American Institutes for Research. https://files.eric.ed.gov/fulltext/ED557626.pdf

2. Boyd, D., Grossman, P. L., Hammerness, K., Lankford, R. H., Loeb, S., McDonald, M., ... Wyckoff, J. (2008). Surveying the landscape of teacher education in New York City: Constrained variation and the challenge of innovation. *Educational Evaluation and Policy Analysis, 30*(4), 319–343.

   Boyd, D. J., Grossman, P. L., Lankford, H., Loeb, S., & Wyckoff, J. (2009). Teacher preparation and student achievement. *Educational Evaluation and Policy Analysis, 31*(4), 416–440; Goldhaber, D., Liddle, S., & Theobald, R. (2013). The gateway to the profession: Assessing teacher preparation programs based on student achievement. *Economics of Education Review, 34*(1), 29–44.

3. Ingersoll, R., Merrill, L., & May, H. (2014). *What are the effects of teacher education and preparation on beginning teacher attrition?* Research Report (#RR-82). Consortium for Policy Research in Education, University of Pennsylvania.

   Sutcher, L., Darling-Hammond, L., & Carver-Thomas, D. (2016). *A coming crisis in teaching? Teacher supply, demand, and shortages in the US.* Learning Policy Institute. https://edworkingpapers.com/sites/default/files/A_Coming_Crisis_in_Teaching_REPORT.pdf

4. Ball, D. L., & Forzani, F. M. (2011). Building a common core for learning to teach and connecting professional learning to practice. *American Educator, 35*(2), 17–21, 38–39.

   Grossman, P. (2010). *Learning to practice: The design of clinical experience in teacher preparation.* Partnership for Teacher Quality.

   American Federation of Teachers. (2012). *Raising the bar: Aligning and elevating teacher preparation and the teaching profession. A report of the American Federation of Teachers Teacher Preparation Task Force.* http://www.highered.nysed.gov/pdf/raisingthebar2012.pdf

   Papay, J. P., West, M. R., Fullerton, J. B., & Kane, T. J. (2012). Does an urban teacher residency increase student achievement? Early evidence from Boston. *Educational Evaluation and Policy Analysis, 34*(4), 413–434.

5. California State University, Office of the Chancellor. (2020). Teacher and educator preparation. https://www2.calstate.edu/impact-of-the-csu/teacher-education

6. Eleven TPPs began the initiative with their partner district(s), but only 10 partnerships completed it: one partnership dropped out of the initiative in 2018.

7. Parker, M., & Tobin, B. (2020). *Funding teacher preparation: What we did. What we learned.* http://sdbjrfoundation.org/wp-content/uploads/2020/04/Funding-Teacher-Preparation_2020Apr13.pdf

8. National Council for Accreditation of Teacher Education. (2010). *Professional standards for the accreditation of teacher preparation institutions.* Retrieved from http://www.ncate.org/~/media/Files/caep/accreditation-resources/ncate-standards-2008.pdf?la=en; National Research Council. (2010). Preparing teachers: Building evidence for sound policy. https://doi.org/10.17226/12882

9. For further details on clinically oriented programs, see the third paper in this series: Torre Gibney, D., Rutherford-Quach, S., Hirschboeck, K., & White, M. E. (2020). *Strengthening the clinical orientation of teacher preparation programs.* WestEd.

10. Ball & Forzani (2011).

    Grossman (2010).

    Guha, R., Hyler, M.E., & Darling-Hammond, L. (2016). *The teacher residency: An innovative model for preparing teachers.* Learning Policy Institute. https://learningpolicyinstitute.org/issue/teacher-preparation-deeper-learning.

    Grossman, P., Hammerness, K., & McDonald, M. (2009). Redefining teaching, reimagining teacher education. *Teachers and Teaching: Theory and Practice, 15*(2), 273-289.

Grossman, P. (2018). *Teaching core practices in teacher education.* Harvard Education Press.

11. Teacher residency programs are intensive pathways into the teaching profession that focus on rigorous clinical preparation. They integrate credentialing coursework with a clinical placement in the public school classroom of an expert mentor teacher for a full academic year. Developed and operated by a partnership between a local school district and a university or college that has a state-approved education program (and sometimes other partners, such as a local union), a residency program serves as a pipeline for meeting specific district workforce needs (e.g., more special education teachers). Each one is guided by a partnership team with representatives from both the district and its partnering institution of higher education.

12. National Center for Teacher Residencies. (2015). *Clinically oriented teacher preparation.* Retrieved from https://nctresidencies.org/wp-content/uploads/2015/07/NCTR-COTP-Final-Single-Pgs.pdf

    Silva, T., McKie, A., Knechtel, V., Gleason, P., & Makowsky. L. (2014). *Teaching residency programs: A multisite look at a new model to prepare teachers for high-need schools* (NCEE 2015–4002). Washington, DC: National Center for Education Evaluation and Regional Assistance, Institute of Education Sciences, U.S. Department of Education. Retrieved from https://ies.ed.gov/ncee/pubs/20154002/pdf/20154002.pdf

13. Sutcher, L., Darling-Hammond, L., & Carver-Thomas, D. (2016). *A coming crisis in teaching? Teacher supply, demand, and shortages in the U.S.* Learning Policy Institute.

    The Sustainable Funding Project. (June 2016). *For the public good quality preparation for every teacher.* Bank Street College of Education.

    NCTR. (July 2017). *Recommendations for state support for effective teacher residencies.* Retrieved from https://nctresidencies.org/research/nctr-report-recommendations-state-support-effective-teacher-residencies/

14. National Council for Accreditation of Teacher Education. (2010). *Professional standards for the accreditation of teacher preparation institutions.* Retrieved from http://www.ncate.org/~/media/Files/caep/accreditation-resources/ncate-standards-2008.pdf?la=en

    Guha et al. (2016).

    Bank Street College of Education. (2020). *Making teacher preparation policy work.* Retrieved from https://educate.bankstreet.edu/pt/2

15. Parker & Tobin (2020).

16. Educator Preparation Committee. (2019). *Teacher supply in California: 2017–18 A report to the legislature.* https://www.ctc.ca.gov/docs/default-source/commission/agendas/2019-04/2019-04-4h.pdf?sfvrsn=2

17. Parker & Tobin (2020).

18. The Foundation used a similar approach when funding other major initiatives (Parker & Tobin, 2020). Note that in the first phase, NGEI grants were subawards from the Chancellor's Office. In phase 2, the grants were awarded from S. D. Bechtel Foundation directly to the campuses.

19. These eight campuses received "comprehensive" awards in January 2015. Five campuses received funds through a second wave of smaller "targeted" awards in March 2015. For more information, see White, M. E., & Gallagher, A. (2015). *Reform focus at NGEI partnerships: Summarizing initial NGEI campus-level work to improve teacher education.* WestEd.

20. Eleven TPPs began the initiative with their partner district(s), but only 10 partnerships completed it: one partnership dropped out of the initiative in 2018

21. Dailey, R. D., Watts, E., Charner, I., & White, R. (n.d.). *Partnering to prepare tomorrow's teachers.* Retrieved from https://www.fhi360.org/resource/partnering-prepare-tomorrows-teachers

22. White, R., Charner, I., Dominic, J., & Dailey, C. R. (2019). *Teacher effectiveness: Transforming the roles and responsibilities of university-based teacher education programs.* Retrieved from https://www.bushfoundation.org/teacher-effectiveness-initiative-final-report

23. National Center for Teacher Residencies (2015).

24. See, for example, Louisiana State Education Department's Believe & Prepare Initiative: https://www.louisianabelieves.com/teaching/believe-and-prepare.

25. National Center for Teacher Residencies (2015).

26. Dailey et al. (n.d.); White et al., (2019).

27. LeMahieu, P. (2015, August 18). Why a NIC? Carnegie Commons Blog. Retrieved from https://www.carnegiefoundation.org/blog/why-a-nic/

    McDiarmid, G., & Caprino, Kathryn. (2017). *Lessons from the teachers for a new era project: Evidence and accountability in teacher education.* https://doi.org/10.4324/9781315312057

    White et al., (2019).

28. McDiarmid & Caprino (2017).

29. Towne, L., Rubalcaba, C., & Sanghani, P. (2017). Teacher preparation transformation centers learning series: Introduction. Retrieved from https://education-first.com/library/publication/teacher-preparation-transformation-centers-learning-series-introduction.

30. For more information about phase 1 NGEI projects, see White & Gallagher (2015).

31. For further details on rubric selection, training, and use, see the third paper in this series: Torre Gibney, Rutherford-Quach, Hirschboeck et al. (2020).

32. In California, a Multiple Subject credential allows teachers to teach all subjects in self-contained classrooms, such as those typically found in elementary school grades. A Single Subject credential in a subject area allows teachers to teach that subject in departmentalized classes, such as typically found in middle and high school grades. For more detail, see https://www.ctc.ca.gov/credentials/req-teaching

33. Guha et al., (2016); For more detail, see the second paper in this series: Torre Gibney, D., Rutherford-Quach, S., Milby, A., Lam, A., & White, M. E. *Building strong partnerships to improve clinically oriented teacher preparation.* WestEd.

34. For more detail on the partnership liaison role, see the second paper in this series: Torre Gibney, Rutherford-Quach, Milby et al. (2020).

35. For more detail, see the fourth paper in this series: White, M. E., Donahue, C., Hirschboeck, K., Torre Gibney, D. (2020). *Strengthening the data use and continuous improvement capacity of teacher preparation programs.* WestEd.

36. Langley, G., Moen, R., Nolan, K., Nolan, T., Norman, C., & Provost, L. (2009). *The improvement guide: A practical approach to enhancing organizational performance, second edition*. Jossey-Bass; Bryk, A. S., Gomez, L., Grunow, A., & LeMahieu, P. (2015). *Learning to improve: How America's schools can get better at getting better.* Harvard Education Publishing.

37. S. D. Bechtel, Jr. Foundation. (2016, April 1). Request for proposals: Preparing a new generation of educators initiative, phase 2. https://www2.calstate.edu/impact-of-the-csu/teacher-education/ngei/Documents/technical-supplements/1.1%20NGEI%20Request%20for%20Proposals.pdf

38. Choosing your own rubric led to variation. For more detail, see the second paper in this series: Torre Gibney, Rutherford-Quach, Milby et al. (2020); Miller, M. (Ed.). (2020). *New Generation of Educators Initiative: Transforming teacher preparation.* The California State University; Parker & Tobin (2020).

39. Miller, M. (Ed.). (2020). *New Generation of Educators Initiative: Transforming teacher preparation.* The California State University.

40. Torre Gibney, Rutherford-Quach, Hirschboeck et al. (2020).

41. National Center for Teacher Residencies. (2018). *Clinically oriented teacher preparation for California.* Retrieved from https://nctresidencies.org/wp-content/uploads/2018/08/2018-NCTR-COTP-California-Final-Single-Pages.pdf

42. Ball & Forzani (2011).

43. In the second year of the Improvement Research Fellowship, any CSU campus with a district partner was invited to apply for the fellowship.

44. The Foundation came to recognize residencies as the "gold standard" of preparation and reported that they would increase their focus on this as a priority area, given the chance to do it over. See Miller, M. (Ed.). (2020). *New Generation of Educators Initiative: Transforming teacher preparation.* The California State University; Parker & Tobin (2020).

45. For further details on the CIL role, see the fourth paper in this series: White, Donahue, Hirschboeck et al. (2020).

46. Meet-up grants were awarded to seven pairs of CSU campus teams as well as to the CSU Education Dean's Assessment Committee and California Commission on Teacher Credentialing to discuss models for measuring candidate effectiveness.

47. For more information about the Foundation's partnership with system leaders, and their lessons learned, see Miller (2020); Parker & Tobin (2020).

48. S. D. Bechtel, Jr. Foundation (2016, April 1).

49. For more detail, see the fourth paper in this series: White, Donahue, Hirschboeck et al. (2020).

50. California State University, Educator Quality Center. EdQ's improvement journey and the improvement research fellowship. *California State University.* https://www2.calstate.edu/impact-of-the-csu/teacher-education/educator-quality-center/featured-news/Pages/edq-improvement-research-fellowship.aspx

51. California State University, Office of the Chancellor. (2020). The Chancellor's Office Learning Lab to close the diversity gap. https://www2.calstate.edu/impact-of-the-csu/teacher-education/educator-quality-center/featured-news/Documents/COLearningLabLaunch.pdf

    See an overview of EdQ's strategic plan at https://www2.calstate.edu/impact-of-the-csu/teacher-education/educator-quality-center/Pages/about-us.aspx

52. Ball & Forzani (2011).

53. For more information about phase-in schedules and other processes to support clinically oriented programs, see the second paper in this series: Torre Gibney, Rutherford-Quach, Milby et al. (2020).