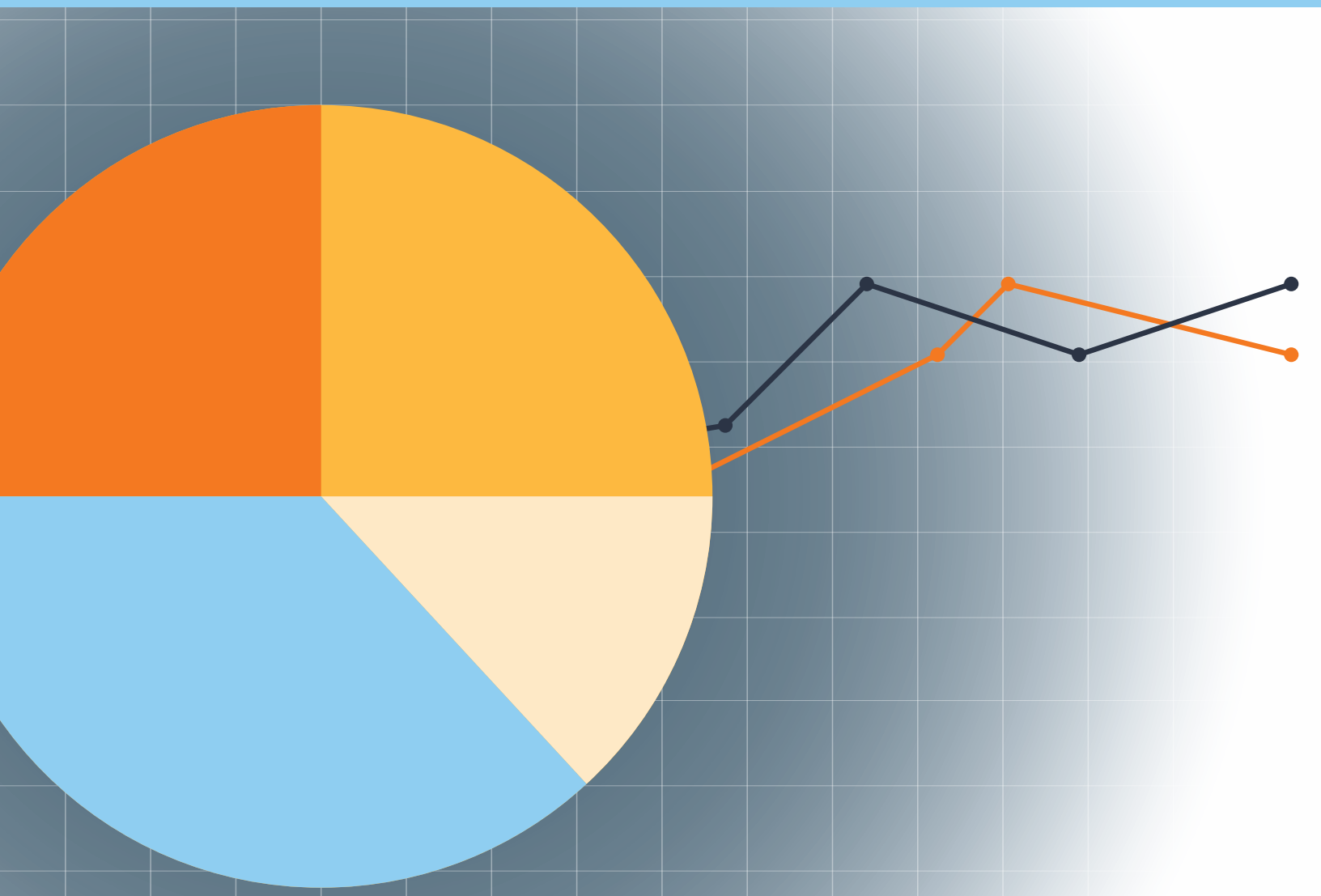
Educator Enhancement Academies Evaluation Study

Phase 2. Teacher and Trainer Reports of NxGen Professional Development and Their Sense of Preparedness



West Virginia Department of EDUCATION
Office of Research

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Phase 2. Teacher and Trainer Reports of NxGen Professional Development and Their Sense of Preparedness

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This research study was reviewed and approved by the West Virginia Department of Education Institutional Review Board (IRB-WVDE-014-002). Should you desire additional details about this study's approval status, you may contact the WVDE IRB cochairperson, Andy Whisman (swhisman@k12.wv.us).

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Executive Summary

As the final stage of West Virginia's rollout of the Next Generation Content Standards and Objectives (NxGen CSOs), the regional education service agencies (RESAs) conducted six train-the-trainer events in the spring of 2013 to prepare educators—mostly teachers—to provide professional development back in their home schools and districts. These events, called Educator Enhancement Academies (EEAs), lasted two or three days depending on which RESA conducted them, and targeted teachers in grade levels that had not yet received professional development in the NxGen CSOs, that is, Grades 2-3, 6-8, and 10-12.

The first phase of this study looked at how well prepared those trainers were at the end of their EEA experience by asking them about their experiences during the training and after they, themselves, conducted training sessions during the summer of 2013. This study further examines the experience of those same participants in providing their own training, as well as what additional professional development they received from the RESAs. It also asks about the experience of the end-user teachers who received professional development from the EEA-trained teachers and other sources in the targeted grade levels during the 2013-2014 school year.

Research Questions

EQ1. To what extent did participants in the EEAs follow up with their own training?

EQ2. What challenges did EEA participants encounter and what supports did they indicate they needed going forward?

EQ3. What follow-up did RESAs provide after the initial EEA training?

EQ4. What was the NxGen PD experience of end-user teachers and EEA teacher trainers during the course of the 2013-2014 school year?

EQ5. What were the outcomes of 2013-2014 professional development experiences in terms of teachers' overall sense of preparedness to teach to the NxGen CSOs and perceived impacts of those experiences on knowledge, practice, and beliefs?

EQ6. What training-related factors may have been at work to produce these outcomes?

Methods

We examined three populations in this phase of the Educator Enhancement Academies (EEA) study: (a) 953 teachers, district office staff, and others who received training at the RESA-sponsored EEAs to become teacher trainers; (b) professional development directors or executive directors from the eight RESAs; and (c) general and special education teachers involved in teaching English/language arts (ELA) and mathematics across the state in Grades 2-3, 6-8, and 10-12. For all groups, we surveyed the full population.

Using three instruments, we collected data as follows:

- For EEA trainees, we used the Follow-up EEA Participant Survey in September 2013;

- For RESA professional development directors, the RESA PD Director Interview Protocol (May 2014); and
- For ELA and math teachers in targeted grades across the state, we used the NxGen Standards Professional Learning Survey (April-May 2014).

Results

Of the 953 EEA participants, 599 responded to the Follow-up EEA Participant Survey, for a 63% response rate. Of the 4,686 ELA and math teachers in the targeted grades, participants returned 1,662 usable responses to the NxGen Standards Professional Learning Survey, for a 25% response rate. Although this is a lower response rate than we typically see–probably due to testing and other pressures on teachers during the April–May survey period–the total number of responses fell only slightly short of our calculated target sample size (1,740). PD directors or executive directors responded to the interview protocol for all eight RESAs. Findings are summarized and interpreted below by evaluation question.

EQ1. To what extent did participants in the EEAs follow up with their own training?

The great majority of the respondents (85%) to the September 2013 follow-up survey indicated they had provided training. Depending upon EEA participants' regular role in their counties, they were able to provide more or less training to end-user teachers. District central office staff seemed in the best position to provide training as evidenced by the numbers they trained, the number of hours they had provided to a typical participant in their sessions by early fall 2013, and the additional hours of training they planned to provide. By comparison, other role groups appeared at a disadvantage, especially teachers and principals with regard to planned follow-up.

EQ2. What challenges did EEA participants encounter and what supports did they indicate they needed going forward?

Most EEA-trained trainers were able to schedule at least some training; where training had taken place, scheduling was still difficult, as was getting people's attention and buy-in. Many of the trainers reported needing more training themselves, especially in the instructional shifts and other aspects of classroom implementation, and help in locating curriculum and other resources they needed for planning instruction.

EQ3. What follow-up did RESAs provide after the initial EEA training?

EEA-facilitated follow-up training took place in schools, counties, and RESAs, although counties seemed to be squarely in the lead in most regions. It appeared that in general, counties focused on their own schools, although in two RESAs, (2 and 5), there was a more regional approach to developing and using EEA-trained trainers as local experts available across counties. Although two-thirds of the participants in the EEAs were teachers, they seemed to face more obstacles in both delivering and receiving additional training due to the real limits of county budgets for supporting release time. Most RESAs provided additional training to EEA-trained trainers in their regions, but a minority of them as of May 2014 has firm plans for providing additional support going forward. Most RESA PD directors appreciated the technical expertise of WVDE trainers that was exhibited at the EEAs and hope to continue to draw upon that expertise. While as a group they considered the EEAs an effective

way to roll out the standards some expressed concern about sustaining the effort over the time it will take to fully implement the NxGen CSOs.

EQ4. What was the NxGen professional development experience of teachers during the 2013-2014 school year?

Whether they were EEA-trained or end-user teachers, relatively few teachers received professional development of a duration (at least 30 contact hours) that one would expect to produce changes in teacher practice or student performance. Further, it was relatively rare for end-user teachers to meet for NxGen training more than three times between June 2013 and May 2014. EEA-trained teachers fared better in that regard, with about half meeting more than three times.

For the most part, end-user teachers were trained by district or school staff (or both). EEA-trained teachers were quite likely to also receive training from RESA staff.

Most teachers reported that their training did not include time to plan classroom implementation of NxGen CSOs or to practice new skills. Teachers generally felt they had not met frequently enough, nor did they have adequate contact hours to learn the skills and content. They did engage in their training collectively, which research shows increases the chances of teachers gaining common understandings and collaborating back in their schools. They could also see the alignment of the training they received with their own schools' and districts' goals.

EQ5. What were the outcomes of 2013-2014 professional development experiences in terms of teachers' overall sense of preparedness to teach the NxGen CSOs and perceived impacts of these experiences on knowledge, practice, and beliefs?

At the end of the school year preceding full implementation of the NxGen standards, just over a third of end-user teachers viewed themselves as well prepared to teach to the NxGen standards. Among EEA-trained teacher trainers, nearly half shared that level of confidence. Notably, more than a quarter of all teachers responding to the survey considered themselves not at all prepared.

In addition to reporting their sense of preparedness, teachers also provided assessments—both before (retrospectively) and after their training during 2013-2014—of the extensiveness of their knowledge of the standards, practice of the instructional shifts, and belief that their students can achieve at levels benchmarked in the standards. Overall, they believed themselves to have gained the most from their training in their knowledge of the standards, less in their practice of the instructional shifts, and least of all in their beliefs about the potential success of their students in reaching the NxGen benchmarks. On average, they began and ended the year believing "to a small extent" that their students could reach the benchmarks.

EQ6. What training–related factors may have been at work to produce these outcomes?

When working in combination, district, school, and RESA staff were more likely than when working alone, to provide higher quality, more frequent, and longer duration professional development–all qualities associated in this study with heightened confidence in being prepared to teach the NxGen Standards.

Recommendations

While a close study of the findings in this study may point to additional needs, we make three major recommendations:

Strongly focus on raising trainers' and teachers' expectations and beliefs that their students can learn at levels benchmarked in the Next Generations standards.

The professional development that was offered during 2013-2014 did little to convince teachers that their students could learn at higher levels. Yet decades of research has shown the impact teacher expectations can have on their students achievement and the benefits of academic press, so this is a critical area of *need*.

Focus future train-the-trainer activities on district level staff

The success of the train-the-trainer model depends on the ability of those trained to provide training back in their home school or district. In this study we learned that teachers and principals were at a disadvantage to provide such training, especially in terms of scheduling the number of hours and follow-up meetings that research indicates it takes to change teacher practice and improve student performance. District central office staff were in a much better position to provide such training and, in fact, did provide most of the training received by teachers in the targeted grades across the state.

Provide an infrastructure for ongoing training and access to guidance materials for local trainers

After providing their initial training back in their home districts, many participants in the EEAs reported needing more training themselves and help in locating guidance resources such as sample lesson plans, pacing guides, and the like. Very few of the EEA-trained teachers had received professional development of sufficient duration to effect changes in their own practice, and only about half considered themselves fairly well or very well prepared to teach to the standards themselves, let alone train others to teach to the standards.

Introduction

As the final stage of West Virginia's rollout of the Next Generation Content Standards and Objectives (NxGen CSOs),[1] the regional education service agencies (RESAs) conducted six train-the-trainer events to prepare educators—mostly teachers—to provide professional development back in their home schools and districts. These events, called *Educator Enhancement Academies* (EEAs), lasted two or three days depending on which RESA conducted them, and targeted teachers in grade levels that had not yet received professional development in the NxGen CSOs, that is, Grades 2-3, 6-8, and 10-12.[2]

The first phase of this study looked at how well prepared those trainers were at the end of their EEA experience by asking them a series of questions in two surveys about their experiences during the training and after they, themselves, conducted training sessions during the summer of 2013. The first survey, administered at the conclusion of the EEA sessions included a knowledge test to gauge trainers' understanding of the instructional shifts involved in teaching to the new standards.

We found that the EEAs provided important components of a coherent instructional system by focusing on the new NxGen standards and instructional shifts needed to teach to the standards, and by introducing participants to materials and tools at their disposal in their own trainings and classrooms. The design of the EEAs reflected three of five elements of research-based professional development, including having a strong content and content pedagogy focus; alignment with school, district, and state goals; and active learning.

The knowledge test, however, revealed a need for additional professional development for these frontline trainers, as overall they answered correctly only two thirds of the items. The lowest scores were for middle school mathematics (58% correct) and the highest were for elementary mathematics (78% correct). For additional details about knowledge test results, see our Phase 1 report (Hammer & Hixson, 2014, pages 17–19).

Findings also showed differences between the four EEAs led by content experts from the West Virginia Department of Education (WVDE) compared with the two led by Corwin Press. For example, participants at the WVDE-led trainings were much more likely than those at Corwin trainings to indicate that the training had been a good start and they were looking forward to training others or that the training had provided everything they needed to train—by a margin of about 2.5 to 1. Conversely, attendees at Corwin-led events were about 12 times more likely to indicate they did not feel ready to train others. In our discussion of these findings we suggested that expectations for the training may not have been clearly laid out for the Corwin trainers, and that contracts or memoranda of understanding for future training include specific expectations and standards to be met.

[1] The NxGen CSOs are West Virginia's adaptation of the Common Core State Standards.

[2] Two of the EEAs were each sponsored by two RESAs operating in partnership; consequently there were six EEAs, which served eight regions.

While our first investigation looked at the quality of the experience of participants in the EEAs and how well those events prepared them to train others, this report further examines the experience of those same participants in providing their own training, what additional professional development they received from the RESAs, and the experience of the end-user teachers who received professional development from the EEA-trained teachers and other sources in the targeted grade levels during the 2013-2014 school year.

Research Questions

EQ1. To what extent did participants in the EEAs follow up with their own training?

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EQ6. What training-related factors may have been at work to produce these outcomes?

Methods

Population Characteristics and Sampling Procedures

We examined three populations in this phase of the Educator Enhancement Academies (EEA) study: (a) 953 teachers, district office staff, and others who received training at the RESA-sponsored EEAs to become teacher trainers; (b) professional development directors or executive directors from the eight RESAs; and (c) general and special education teachers involved in teaching English/language arts (ELA) and mathematics across the state in Grades 2-3, 6-8, and 10-12. For all groups, we surveyed the full population.

Data Collection Methods

Using three instruments, we collected data as follows:

- For EEA trainees, we used the Follow-up EEA Participant Survey in September 2013;
- For RESA professional development directors, the RESA PD Director Interview Protocol (May 2014); and
- For ELA and math teachers in targeted grades across the state, we used the NxGen Standards Professional Learning Survey (April-May 2014).

Research Design

Our data collection and methods of analysis are summarized by research question in Table 1 below.

Table 1. Summary of Evaluation Questions and Data Collection Methods Used

Evaluation question	Method of analysis/*data source*	Results reported
EQ1. To what extent did participants in the EEAs follow up with their own training?	Descriptive statistics/ *Follow-up EEA Participant Survey (September 2013)*	• How many attendees provided training? • For which programmatic levels and contents areas did they train individuals? • How many individuals attended? • How many training events did they facilitate? • How many additional hours did they expect to provide for typical participant?
EQ2. What challenges did EEA participants encounter and what supports did they indicate they needed going forward?	Qualitative data analysis/ *Follow-up EEA Participant Survey (September 2013)*	For those EEA attendees who did provide training, • What challenges have EEA attendees encountered in their own trainings? • What specific areas/topics from the NxGen CSOs were most difficult for participants to understand? • What was the duration of the training for typical attendee? • About which three topics (if any) could trainers have used more information or assistance in their own trainings • In what other ways can RESAs be of additional assistance?
		For those EEA attendees who did *not* provide training, • What were the reasons? • Were there other supports that would have made it possible for them to provide training?
EQ3. What follow-up did RESAs provide after the initial EEA training?	Qualitative data analysis/ *RESA PD Director Interview Protocol (May 2014)*	• In what contexts did participants deliver their own trainings in their regions? S*chool-based? County-based? Centralized RESA-based?* • Have EEA participants asked for additional assistance from RESAs to support their own training? • What follow-up did RESAs do with the trainers trained at the EEAs they hosted? • Did RESAs expect to do any additional follow-up with the trainers trained at their EEAs? If so, what form will that take? • What additional supports do the RESAs need from the West Virginia Department of Education? • Were there comments about the EEAs or the roll-out and implementation of the NxGen CSOs? • What, if any, evaluation have RESAs conducted of the implementation or effectiveness of NxGen CSO professional development in their regions?

Table 1 continued next page

Table 1. Summary of Evaluation Questions and Data Collection Methods Used, continued

Evaluation question	Method of analysis/*data source*	Results reported
EQ4. What was the NxGen PD experience of end-user teachers and EEA teacher trainers during the course of the 2013-2014 school year?	Descriptive statistics/*NxGen Standards Professional Learning Survey (April-May 2014)*	• What was the average number of PD contact hours teachers in targeted grades received on NxGen standards? • What was the average number of times teachers in targeted grades met for PD on NxGen standards? • Who was primarily responsible for providing the PD they received on NxGen standards? • To what extent did teachers receive research-based training? • How well prepared do teachers consider themselves to teach to the NxGen CSOs?
EQ5. What were the outcomes of training in terms of overall sense of preparedness and impacts on knowledge, practice, and beliefs?	Paired samples *t* tests and Cohen's *d/NxGen Standards Professional Learning Survey (April-May 2014)*	• What was the perceived impact of the NxGen training teachers received on their knowledge, behavior, and beliefs? • Did it differ for the two groups (i.e., EEA teacher trainers and end-user teachers?
EQ6. What training-related factors may have been at work to produce these outcomes?	Pearson's *r and probability testing/NxGen Standards Professional Learning Survey (April-May 2014)*	• Is there a relationship between total hours of PD contact hours received and how well prepared teachers believe themselves to be? • Is there a relationship between the number of times teachers met for training and how well prepared they believe themselves to be? • Is there a relationship between the level of adherence to research-based PD practices and how well prepared teachers believe themselves to be to teach to the NxGen standards?
	Comparison of means/ *NxGen Standards Professional Learning Survey (April-May 2014)*	• Are certain trainer role groups associated with greater teacher confidence about their preparedness to teach to the NxGen standards? • How are trainer role groups associated with variations in hours of training time provided, number of times met, and adherence to research-based PD practices?

Both surveys were administered using similar strategies. First a message was sent via e-mail to the full list of intended respondents, announcing the survey and explaining its purposes, importance, and the time it takes to fill out; and asking recipients to watch for it and respond quickly. SurveyMonkey was then used to e-mail the invitation to participants, along with an embedded link to the online questionnaire. The initial invitation message and three reminder messages were uploaded to SurveyMonkey and sent to nonrespondents every 4 or 5 business days. In all, it was possible for individuals to receive up to five messages, including the announcement, the initial invitation, and three reminders if they failed to respond. This technique yielded large enough respondent pools to produce statistically significant and reliable results in most cases, even when respondents were disaggregated to represent different subgroups (e.g., middle school math or elementary school ELA teachers). To determine the

number of teachers we needed in our statewide survey, we used the MaCorr Research Solutions Online sample size calculator.

Results

Tables supporting the various results in this section can be found in the Appendix. Following the Reference section results are presented by evaluation question.

Recruitment

Of the 953 EEA participants, 599 responded to the Follow-up EEA Participant Survey, for a 63% response rate. Similarly, of the 4,686 ELA and math teachers in the targeted grades, participants returned 1,662 usable responses to the NxGen Standards Professional Learning Survey, for a 25% response rate. Although this is a lower response rate than we typically see–probably due to testing and other pressures on teachers during the April-May survey period–the total number of responses fell only slightly short of our calculated target sample size (1,740). PD directors or executive directors responded to the interview protocol for all eight RESAs.

Statistics and Data Analysis

EQ1. To what extent did participants in the EEAs follow up with their own training?

The great majority of the respondents (85%) to the September 2013 follow-up survey indicated they had provided training. Of the nearly 500 respondents who had provided training, each trained an average of 56 educators. District central office staff reported training the largest numbers of teachers, averaging 165 each; general classroom teachers trained the smallest numbers of educations, averaging about 32 each. The total number of teachers these respondents trained collectively is unknown since it is possible co-trainers reported training the same groups of teachers, thus double counting attendees.

The respondents each held an average of 2.6 training events and the duration of the training for a typical participant was about 9 hours. District central office staff tended to offer more hours of training for the individuals they trained (i.e. 12 hours), while instructional support teachers/specialists (non-special education) provided the briefest training sessions (i.e., 7.6 hours). General classroom teachers reported providing 9.2 hours of training on average.

About two thirds of those who had provided training planned to provide additional follow-up training or already had; they anticipated that this additional training would last an average of another 10 hours or so. About 87% of district central office staff intended to provide an average of another 17 hours, which when combined with their initial offerings (12 hours) would total about 29 hours—a duration very close to the 30 hours research has shown to be the minimum needed to change teacher practice and/or improve student performance (Yoon et al., 2007). On the other hand, less than two thirds of general classroom teachers—who made up the largest segment of the EEA trainees—planned to provide follow-up training. Of those who did, they anticipated offering an average of about 8 additional hours. This time along with

the initial training of about 9 hours adds up to just over half of the recommended 30 contact hours.

For more detailed information on the various role groups trained in the EEA, and the average numbers of (a) participants in their trainings, (b) training events they have held, (c) hours of training they have provided, (d) and additional hours they plan to provide, see Table A 1, page 23.

EQ2. What challenges did EEA participants encounter and what supports did they indicate they needed going forward?

The Follow-up EEA Participant Survey (September 2013) included several open-ended questions requesting information about trainers' experiences and needs going forward. The qualitative responses were read three times and coded. This section summarizes what was learned from responses to the open-ended questions.

Eighty-seven respondents indicated they had not provided training as of mid-to-late September 2013. When asked to describe the reasons for not providing training, the most frequent response was that training had not been requested (n = 20) or they encountered various scheduling issues (n = 18), including scheduling conflicts, a lack of time in the schedule for it, or that it was scheduled for later in the year. Some (n = 11) indicated that others besides themselves had provided training or that most of the teachers from their school had attended the EEA (n = 7); the remainder had various personal reasons for not providing training (change of position, health problems, and so forth).

EEA attendees who *had* succeeded in providing training were also asked about barriers they encountered. Some indicated they had encountered no barriers (n = 50). The most frequent response, however, indicated scheduling time with teachers was the biggest barrier (n = 119); while others mentioned they were having trouble getting people's attention (n = 43); they lacked standards-aligned curriculum materials, lessons, and strategies (n = 34); or they had an overall need for more knowledge about how to teach the NxGen CSOs (n = 32).

When the EEA attendees who had provided training were asked about what additional supports they needed from RESAs to help them with their own training, 182 respondents indicated they needed no additional help from the RESAs, while 215 indicated that RESAs could continue to provide help. From the latter, we received 273 suggestions. The most frequently mentioned (n = 105) was follow-up training, especially on the standards and instructional shifts, which some (n = 21) said they needed on an ongoing basis throughout the year. Two other frequently mentioned needs were for additional resources (n = 55) such as NxGen aligned curriculum and instruction resources or model lessons, and time for collaboration and planning (n = 34).

When asked about what topics (if any) were the most difficult for individuals in their sessions to master, the most frequently mentioned topics (in descending order) were the application of instructional shifts (n = 86); how to teach to NxGen standards effectively, including lesson planning; differences among NxGen CSOs, previous CSOs, and the Common Core (n = 36); identifying and obtaining aligned curriculum materials and texts (n = 29); Smarter

Balanced assessment (n = 29); and how to help students transition from the old CSOs to NxGen while addressing their knowledge and skills gaps (n = 22).

EQ3. What follow-up did RESAs provide after the initial EEA training?

RESA directors responded to an interview protocol in early May 2014, which was designed to collect information about RESA support of the trainers trained at the EEAs, subsequent to the academies and throughout the 2013-2014 school year. We asked about the context of training that the EEA-trained trainers provided, what sorts of supports the trainers may have requested from the RESAs, any follow-up RESAs provided or planned to provide specifically for the EEA-trained trainers in their regions, as well as what additional supports might be needed from the WVDE. We also gave directors an opportunity to comment generally about the rollout and implementation of the NxGen CSOs in their region and to describe the nature of any evaluations they were conducting.

Training contexts

RESA directors mostly described activities that took place at the county level (described below). However, staff from two RESAs did mention school-based training led by EEA-trained trainers at the beginning of the school year and at school retreats focused on particular NxGen topics. Another director mentioned school-based training that took place on early-release days and in-service education (ISE) and continuing education (CE) days.

At the county level, RESA PD directors reported a variety of approaches:

- County-based centralized summer training academies utilizing EEA-trained trainers;
- Ongoing, county-organized, grade-level meetings that featured training on NxGen CSOs;
- Partnerships among counties to hold training events that were at least partially led by the EEA-trained trainers;
- Regional cooperation and cross-county sharing of EEA-trained trainers–usually central office staff–who have developed strong expertise in particular NxGen topics; and
- Ongoing county-supported work with school-based PLCs, which meet for 1 or 2 hours in the morning 1 day a week, when the students have a delayed start.

One RESA conducted three Educator Enhancement Academies for educators across the region, utilizing EEA-trained trainers; they also provided a leadership series to prepare principals to lead the implementation of NxGen CSOs in their schools.

Trainer requests for support and additional training

When asked about the nature of training and support requested by EEA-trained trainers in their regions, the picture is less clear. RESA staff mostly responded with descriptions of the training that counties had requested, perhaps because such requests were filtered through the county offices. Another possibility is that EEA-trained trainers who were teachers could not get release time during school. One director reported that superintendents were strongly resistant to providing release time due to the added expense and the need to keep talented teachers in the classroom with students. Providing ongoing support for such school-based trainers may be a special challenge that needs looking into.

Training and support provided to trainers

RESA PD directors were also asked what follow-up training they had provided to the EEA-trained trainers. Some had provided several additional days of training as illustrated in the following examples:

- two days for EEA-trained trainers to work with their central office staffs on implementation and training plans;
- monthly trainings and formal one-day sessions targeted to both ELA and math trainers;
- support for attendance at a 4-day quality learning workshop and three full-day sessions for EEA-targeted content/programmatic teams in the fall of 2013 and winter of 2014;
- funding (with WVDE grant money) to contract with 18 of the original 33 EEA-trained trainers to sustain region-wide training related to the implementation of the NxGen CSOs in classrooms;
- a series of three leadership trainings for administrators who attended the EEA; and
- quarterly 6-hour trainings for trainers to deepen their understanding of the CSOs and instructional practices that support the next generation CSOs.

To address the challenge of supporting trainers unable to get release time, RESA 2 provided extensive online libraries of NxGen resources and ran webinars. This same RESA supported a portal and centralized regional training (four sessions) for EEA-trained math coaches and is supporting teams working on implementation monitoring tools.

One final note, a RESA pointed out that, although they have provided additional training for both ELA and math trainers, there is no guarantee that counties will continue to send the same trainers.

Planned additional follow-up for EEA-trained trainers

Some of the RESAs had definite plans to continue working with and supporting the EEA-trained trainers in their regions. Perhaps the most spelled out plan was RESA 5, which is contracting with at least 16 EEA-trained teachers and teacher coaches from all eight counties in their region to continue to provide support for implementation of the NxGen CSOs in 2014-2015. Other RESAs mentioned additional training for segments of their EEA-trained trainers, such as instructional coaches, or for groups that may include both previously trained trainers and newly appointed ones. Three RESAs had no definite plans for ongoing support of EEA-trained trainers, indicating only that they will respond to county requests.

Additional support needed from WVDE

Seven of the eight RESAs indicated their desire for ongoing collaboration with and support from WVDE, although one director mentioned the need for familiarity with new expertise available at the Department, due to personnel changes. Three directors mentioned the need for funding to support release time for teacher trainers. Others mentioned the need for technical expertise, such as the Department provided at the EEAs, to support additional training in writing lesson plans, locating curriculum resources, specific ELA or math instructional approaches, and other NxGen implementation issues in classrooms and schools.

Overall view on the EEAs as a mechanism for rolling out and implementing the NxGen CSOs

The RESAs that used WVDE staff to provide training at their academies generally expressed great satisfaction with the EEAs and considered them very successful (the two RESAs that used third-party trainers did not provide comments about the EEAs or rollout). Most of the RESAs urged the Department to continue to work with the RESAs on implementing the standards, which many directors noted was going to take some time and sustained effort. Several of the RESAs described their efforts to further develop local or regional experts by, for example, supporting PLCs in schools or by sustaining a team of trainers who can cross county lines and provide specific training.

Regional evaluations of the implementation or effectiveness of this approach to PD

None of the RESAs seem to be specifically studying the implementation or effectiveness of the EEA train-the-trainer approach to NxGen professional development. They all collect feedback from participants using their standardized evaluation form after trainings. RESA 2 described a more complex approach to data collection in their region, including support for learning team dialogues about what was and was not working. They and RESA 6 are developing tools to monitor implementation of the standards for principals, teachers, and trainers. RESA 2 also hired a third-party evaluator to do research on their trainings, including pre-/posttests.

EQ4. What was the NxGen professional development experience of teachers during the 2013-2014 school year?

All ELA and math teachers in the targeted grades (i.e., Grades 2-3, 6-8, and 10-12) for whom we had email addresses (4,686) were invited to participate in the *NxGen Standards Professional Learning Survey* during April-May 2014. The survey asked an array of questions about teachers' experiences in professional development since the preceding June. The remaining analyses in this report are based on the approximately 1,600 responses we received to the survey. Unless otherwise specified, the findings are reported for two groups of teachers–those who had attended an EEA to become teacher trainers and other teachers who participated in professional development facilited by EEA-trained teachers and others (hereafter end-user teachers.

Number of PD contact hours teachers received

The survey asked how much training teachers received from June 2013 through April–May 2014, a time period subsequent to the EEAs, which took place in April and May 2013. Teachers who had attended the EEAs to become trainers received substantially more hours of training afterwards (an average of 23 hours) compared with end-user teachers in the targeted grades, who received about 12 hours. Figure 1 provides a comparison of duration categories for both groups of teachers. EEA-trained teachers were about three times more likely to meet at the research-based recommended level of 30 or more hours. For a breakdown by programmatic level, content area, and region, see Table A 2 (page 24) and Table A 3 (page 25).

Number of times teachers met for PD

Similar to findings for the number of hours of training, the two groups of teachers varied in the number of times they met. EEA-trained teachers met an average of 5 times, compared with 3.6 times for end-user teachers. Figure 1 shows the comparison by meeting frequency category. It is notable that more than half of end-user teachers reported meeting two or fewer times to learn about NxGen CSOs. For a breakdown by programmatic level, content area, and region, see Figure 1 (page 24) and Table A 3 (page 25).

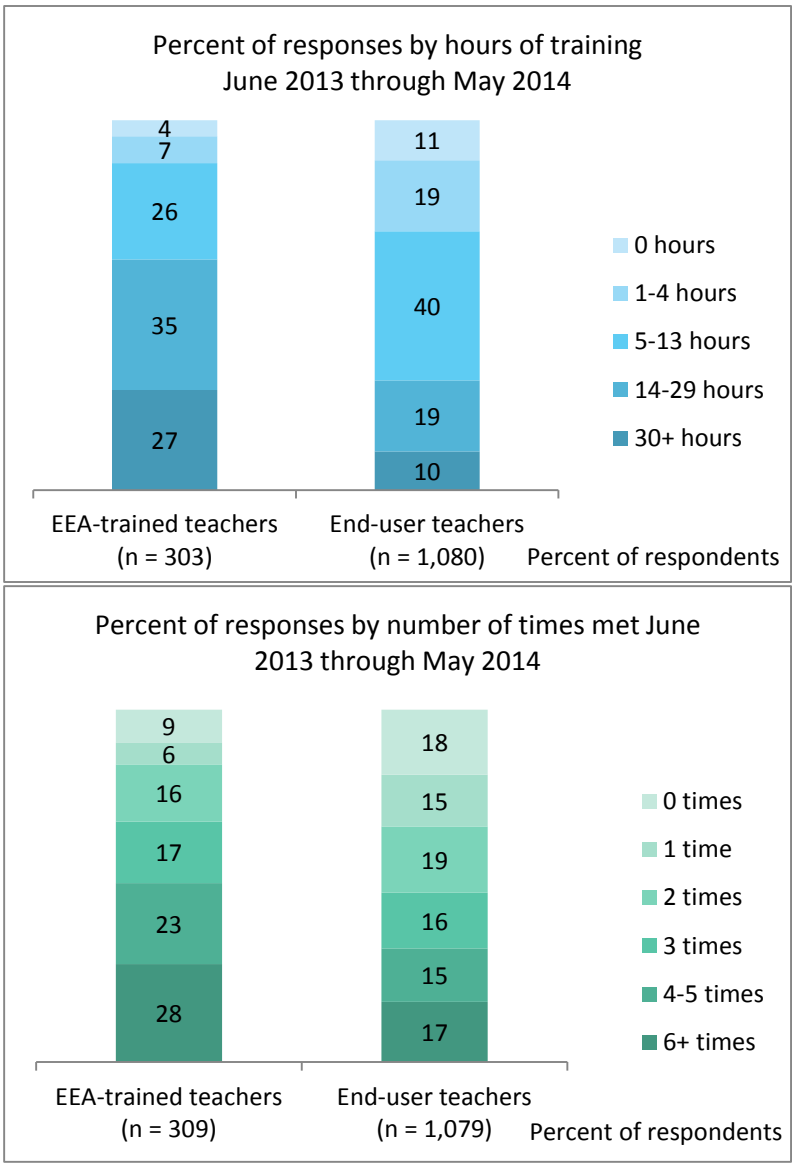

Figure 1. Duration and Frequency of Professional Development for EEA-Trained and End-User Teachers

EEA-trained teachers received more hours of training and met more frequently than end-user teachers during the same time period, June 2013 through May 2014. They were three times more likely to meet for 30 or more hours, and about 1.5 times more likely to meet four or more times than end-user teachers.

Role groups primarily responsible for providing the PD

Teachers were asked to select up to three sources of NxGen training from among six options (i.e., "Our principal or assistant/associate principal," "A teacher from my school," "RESA staff," "District staff," "Vendor," or "Other"). Of all the possible combinations, the seven shown in Figure 2 were the most prevalent, representing about 80% of all responses. As a reminder, the RESAs were charged with facilitating the EEAs in the spring of 2013 and most had provided extensive follow-up with the trainers who were trained at those events. Consequently, EEA-trained teachers received more training from RESAs, either as their sole source or in combination with school or district staff during subsequent months and into the 2013–2014 school year than did end-user teachers. The great majority of end-user teachers received their NxGen training exclusively from district or school staff, or from a combination of the two.

Extent to which teachers received research-based training

Teachers were asked to respond to 15 items, the Research-Based PD Practices Scale, which together provided a measure of the extent to which the professional development they received had adhered to five qualities research has found to be associated with improvements in teacher practice and/or student performance (Hammer, 2013). The five qualities—content and content-pedagogy focus, active learning, coherence, collective participation, and sufficient duration and timespan—were represented by three items each. Overall, the mean percentage of agreement (agreed/strongly agreed) with the items was 66.0% for EEA-trained teachers versus 55.7% for end-user teachers. Among teachers of different content areas, special education teachers tended to give higher marks for these items than teachers of ELA or math and middle school teachers gave higher marks than elementary and high school teachers. EEA-trained teachers from RESAs 3 and 6 averaged well above the overall mean among EEA-trained teachers, while end-user teachers in RESAs 2, 3, 5, and 6 all gave above the mean ratings for adherence to research-based PD practices in the NxGen training they had received (see Table A 5, page 27 for additional details).

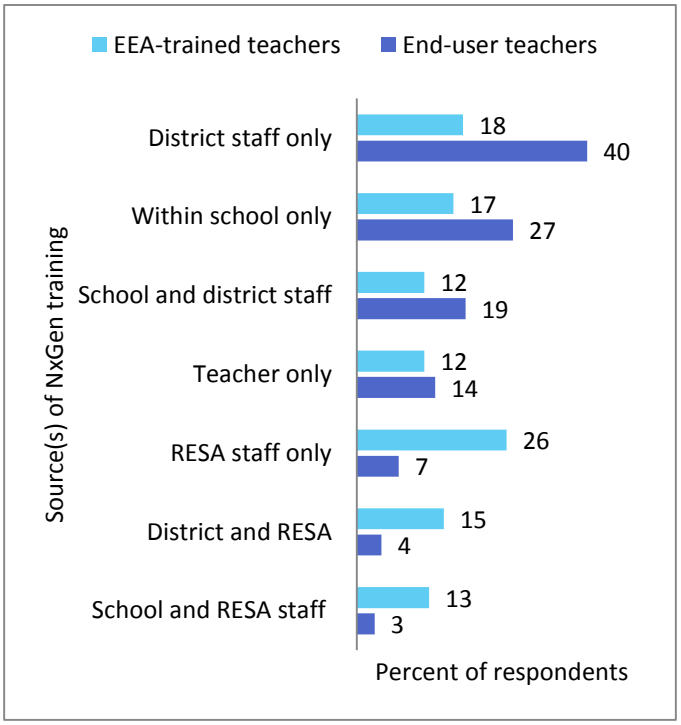

Figure 2. Sources of NxGen Training by Teacher Category
This chart shows the most prevalent combinations of one or more sources of NxGen training reported by respondents to the NxGen Standards Professional Learning Survey in April-May 2014, representing about 80% of respondents. The remaining 20% cited other combinations of sources with much lower frequencies. The teacher-only category is broken out separately here, but is actually a subset of the within-school only category.

Figure 3 shows the breakdown by individual item in the Research-Based PD Practices Scale. For both groups of teachers (EEA-trained and end-user), there was general agreement that the training was aligned with school and district goals, that it involved collective participation with their colleagues at school or in the district, and that the training was about the correct length of time for the content it aimed to cover. Some areas where both groups were similar in their disagreement included that the training allowed time to plan classroom implementation, that it included practice of new skills, and that it included an adequate number of meetings over time. All three of these items pertain to actual implementation of the NxGen standards, thus the finding that the training teachers received did not allow time for these activities could affect teachers' sense of how prepared they are to teach to the standards (see next section). Overall, the EEA-trained teachers were in stronger agreement than the end-user teachers that various elements of research-based PD practice were present in the training they received.

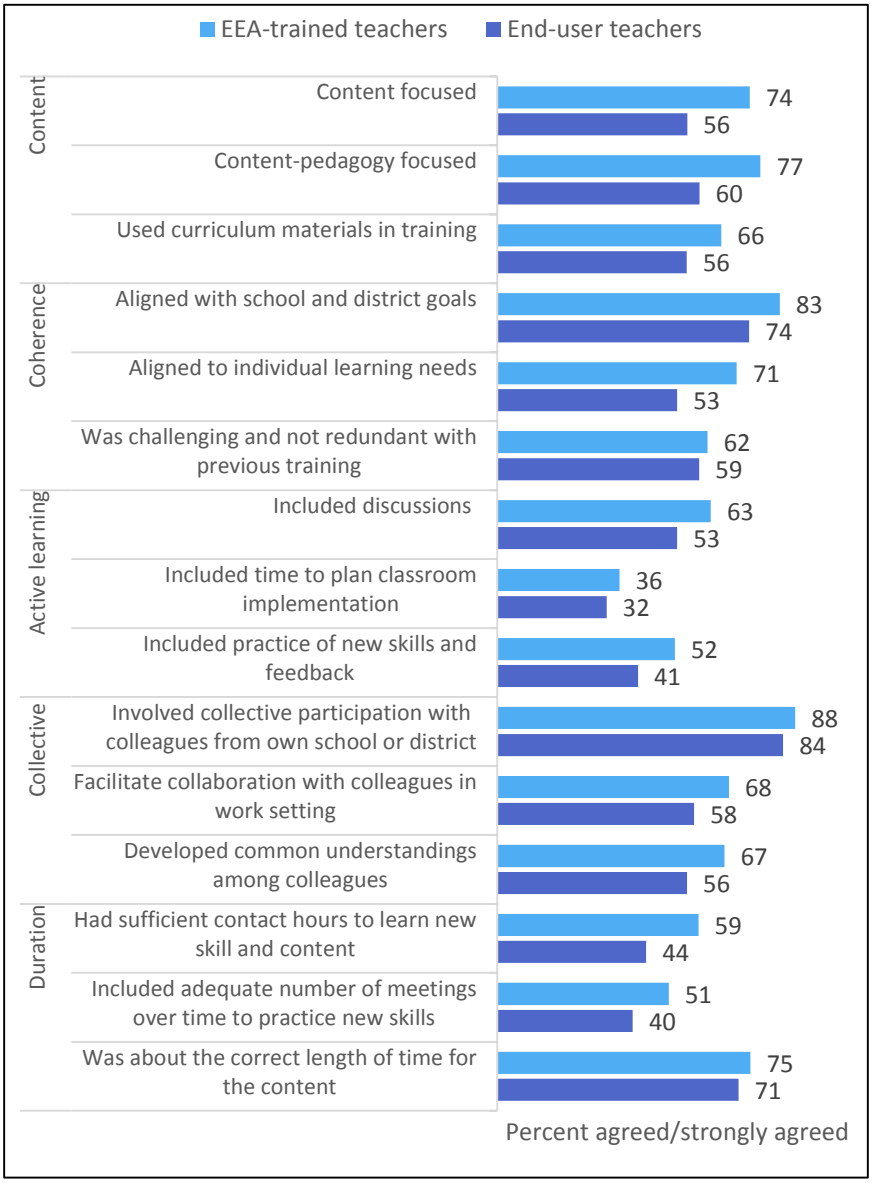

Figure 3. Adherence to Research-Based Practices by Individual Item, EEA-Trained and End-User Teachers

Ns for EEA-trained teachers ranged from 278 to 288, depending upon the items; for end-user teachers the range was from 918 to 940 responses. Only teachers who indicated they had participated in at least 1 hour of training since June 2013 were included in the analysis.

EQ5. What were the outcomes of 2013-2014 professional development experiences in terms of teachers' overall sense of preparedness to teach the NxGen CSOs and perceived impacts of these experiences on knowledge, practice, and beliefs?

Level of preparedness

Teachers were asked to rate their level of preparedness to teach to the NxGen CSOs in the 2014-2015 school year on a Likert-type scale with 0 = not at all, 1 = somewhat, 2 = moderately, 3 = fairly well, and 4 = very well. Looking first at the teachers one would expect to be the best prepared—those trained to be NxGen trainers at the EEAs—Figure 4 shows a surprising 31% of the ELA teacher trainers and 29% of math teacher trainers believed themselves not at all prepared to teach to the NxGen CSOs. On the other hand, nearly half of this group of teacher trainers considered themselves fairly or very well prepared, compared with just over a third of end-user teachers who shared that same degree of confidence.

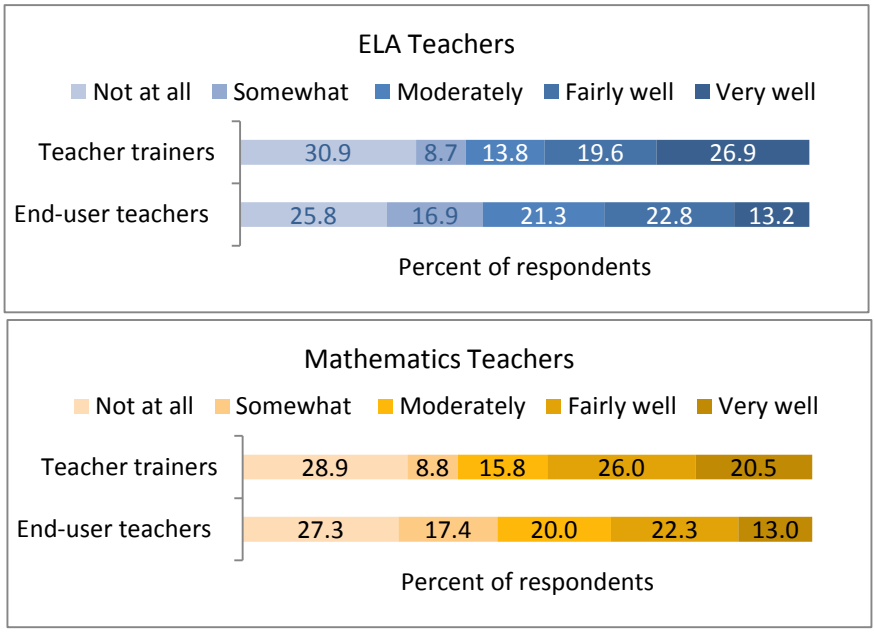

Figure 4. Level of Preparedness to Teach to the NxGen CSOs for Teacher Trainers and End-user teachers of ELA and math.

EEA-trained teacher trainers reported very similar levels of preparedness whether they taught ELA or math. The same was true of end-user teachers. This analysis included only teachers who indicated they had received at least 1 hour of NxGen training since June 2013.

Looking at mean scores on the Likert scale described above, teachers trained to be trainers at the EEAs scored at the *moderately prepared* level (2.0) for both ELA and math. End-user teachers scored a bit below that level with mean scores of 1.8 for both ELA and math. Details of these preparedness ratings can be found in Table A 6 (page 28).

Impacts on knowledge, practice, and beliefs

The questionnaire included three sets of questions, which asked teachers to rate their levels of (a) knowledge about the NxGen CSOs, (b) practice of the instructional shifts required to effectively teach to the standards, and (c) belief that their students can perform at levels benchmarked in the standards—before and after the training they had received during the study period. Results for both EEA-trained and end-user teachers, displayed in Figure 5, were statistically significant and revealed large effects on knowledge about the NxGen standards, moderate effects on respondents' practice of the instructional shifts called for in the NxGen standards, and small effects on teacher beliefs that their students can perform at levels benchmarked in the NxGen standards (see Table A 7, page 29). Teacher trainers reported moving

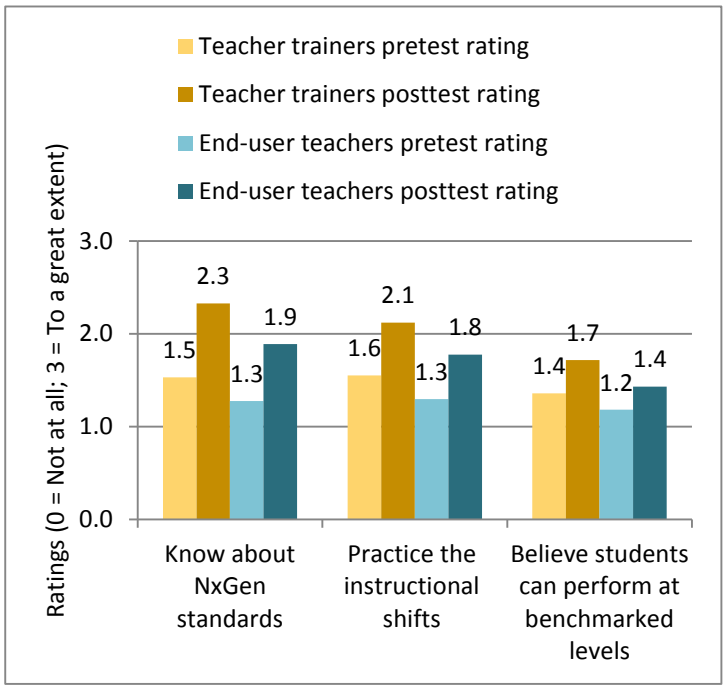

Figure 5. Pre-Post Retrospective Perception of Impact on Knowledge, Practice, and Belief

The ratings in this chart include 0 (not at all); 1 (to a small extent); 2 (to a moderate extent); and 3 (to a great extent). While teacher trainers' pretest ratings (in aqua) were similar for all three measures (knowledge, practice, and belief), they reported greater gains in their knowledge and practice of NxGen standards than for their belief in their students' ability to achieve at levels benchmarked in the standards. The same pattern held true for end-user teachers, although they started at lower levels and gained less. Especially notable is the failure to rise above "to a small extent" in end-user teachers' beliefs about their students' potential performance.

from fairly low-levels of knowledge of the standards, practice of the instructional shifts, and beliefs in their students' abilities to achieve the standards before the training they received during the 2013-2014 school year, to moderate levels after the training. End-user teachers, on the other hand, started from comparatively lower levels and moved up only slightly to just below moderate levels for their knowledge and practice. Their beliefs about their students' ability to perform at levels benchmarked in the NxGen standards remained at a low level, that is, they believed "to a small extent" that their students could hit those benchmarks.

We wondered how much the results of this measure varied by content area, so we conducted the same analysis for all teachers who reported at least 1 hour of training (Figure 6). Differences in the pre-post scores were statistically significant at the .001 level (see Table A 8, page 30). What may be most notable about this chart is the fairly low-level of belief teachers held that their students can perform at the levels benchmarked in the NxGen standards. This was especially true of math and special education teachers.

When these data were subjected to the Cohen's *d* effect size test, the differences in the impact of training on the three teacher outcomes became clearer. As noted in the horizontal axis of Figure 7, effects can range from small (less than .4) to moderate (.5 to .7) to large (.8 and above). Overall, the training teachers received had, by their reckoning, a larger effect on their knowledge about the standards than on the other two measures, with the smallest effects on teachers' beliefs about their students' ability to perform to levels benchmarked in the NxGen standards. Teachers of both ELA and math (mostly elementary teachers) reported the largest effects on all three measures, followed by special education teachers on two of the measures (knowledge and practice). Math and special education teachers seemed to be least impacted with regard to raising their expectations about their students' ability to perform to the standards.

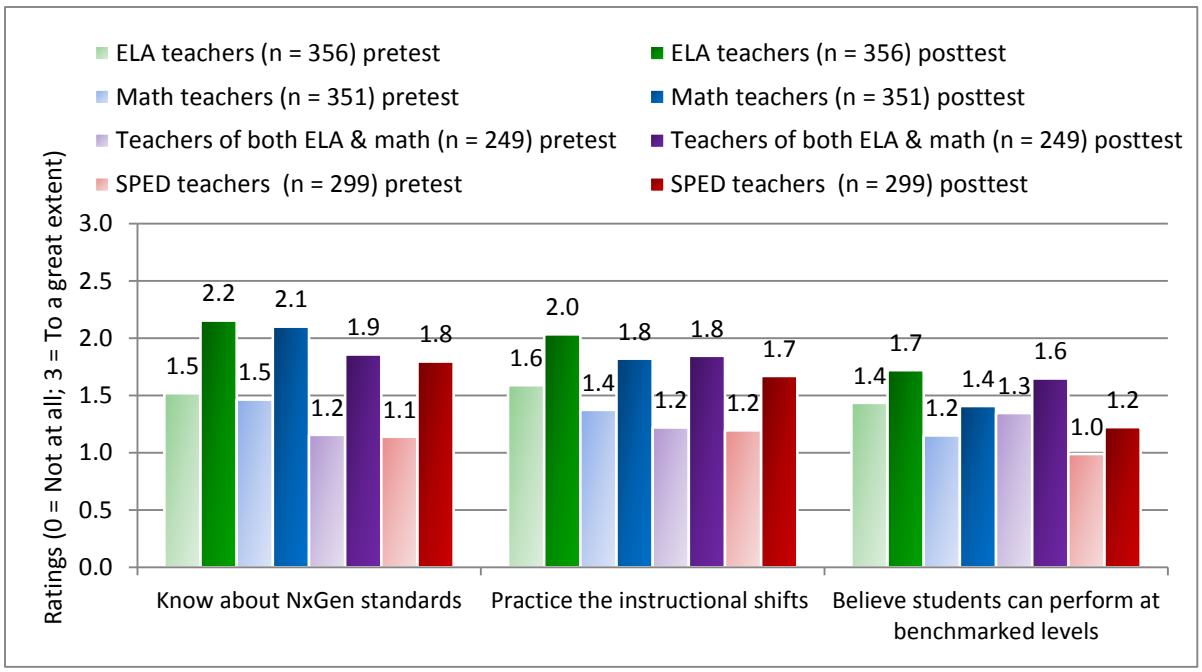

Figure 6. Pre-Post Retrospective Perception of Impact on Knowledge, Practice, and Belief by Content Area

The ratings in this chart include 0 (not at all); 1 (to a small extent); 2 (to a moderate extent); and 3 (to a great extent).

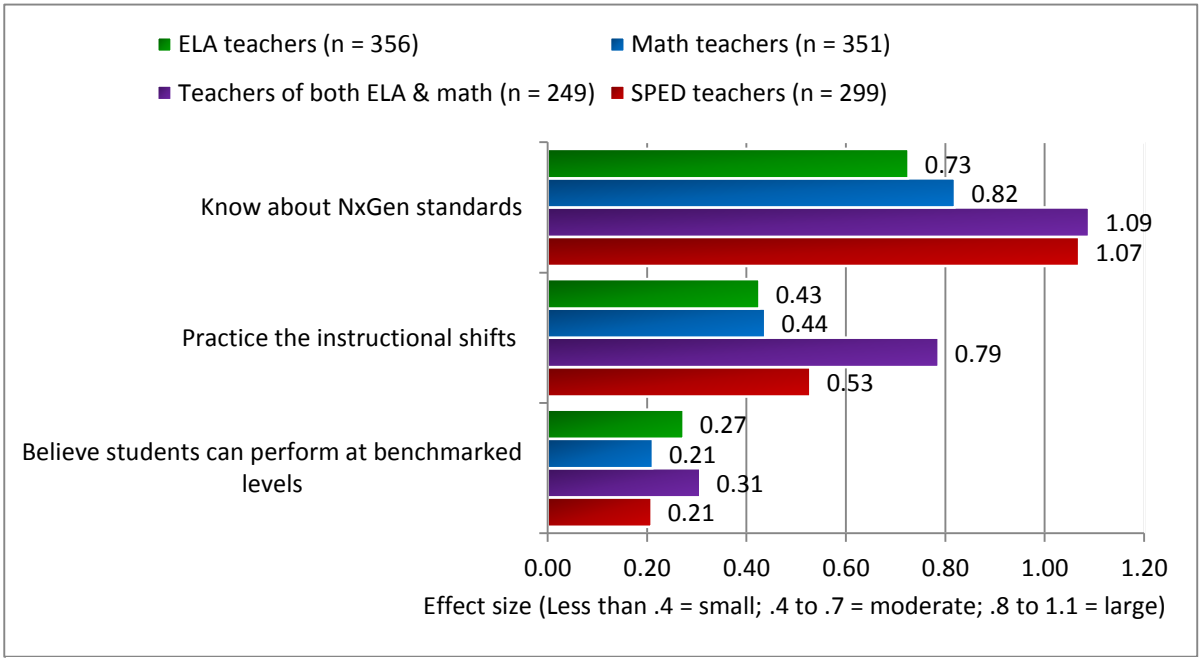

Figure 7. Effect Size of Training on Knowledge, Practice, and Beliefs of Teachers by Content Area

All teachers who received at least 1 hour of training were included in this test of effect size. Changes between retrospective pre- and posttest reports of knowledge, practice, and beliefs were statistically significant. Effect sizes varied greatly, from small for changes in beliefs to quite large for changes in knowledge.

EQ6. What training–related factors may have been at work to produce these outcomes?

At this point in our reporting we have described the range of teachers' experiences with regard to the training they received, and the range of reported outcomes in terms of their sense of preparedness. Next we explore relationships between the two sets of observations.

Duration of training and number of times met

The relationship between the number of hours of training and preparedness was relatively weak and statistically nonsignificant for ELA (r = .044; p = .094); for math, however, the correlation was a bit stronger and statistically significant (r = .204; p = .000; see Table A 9, page 31). Figure 8 graphically displays these relationships. The most common duration category was training lasting a half day to about two days (5–13 hours). Results for this duration of training fell just below the *moderately prepared* level for both math and ELA. According to these data ELA teachers did not gain confidence from additional hours of training, whereas math teachers did, especially if they had 30 or more contact hours.

Shifting to the number of times met, the relationship is

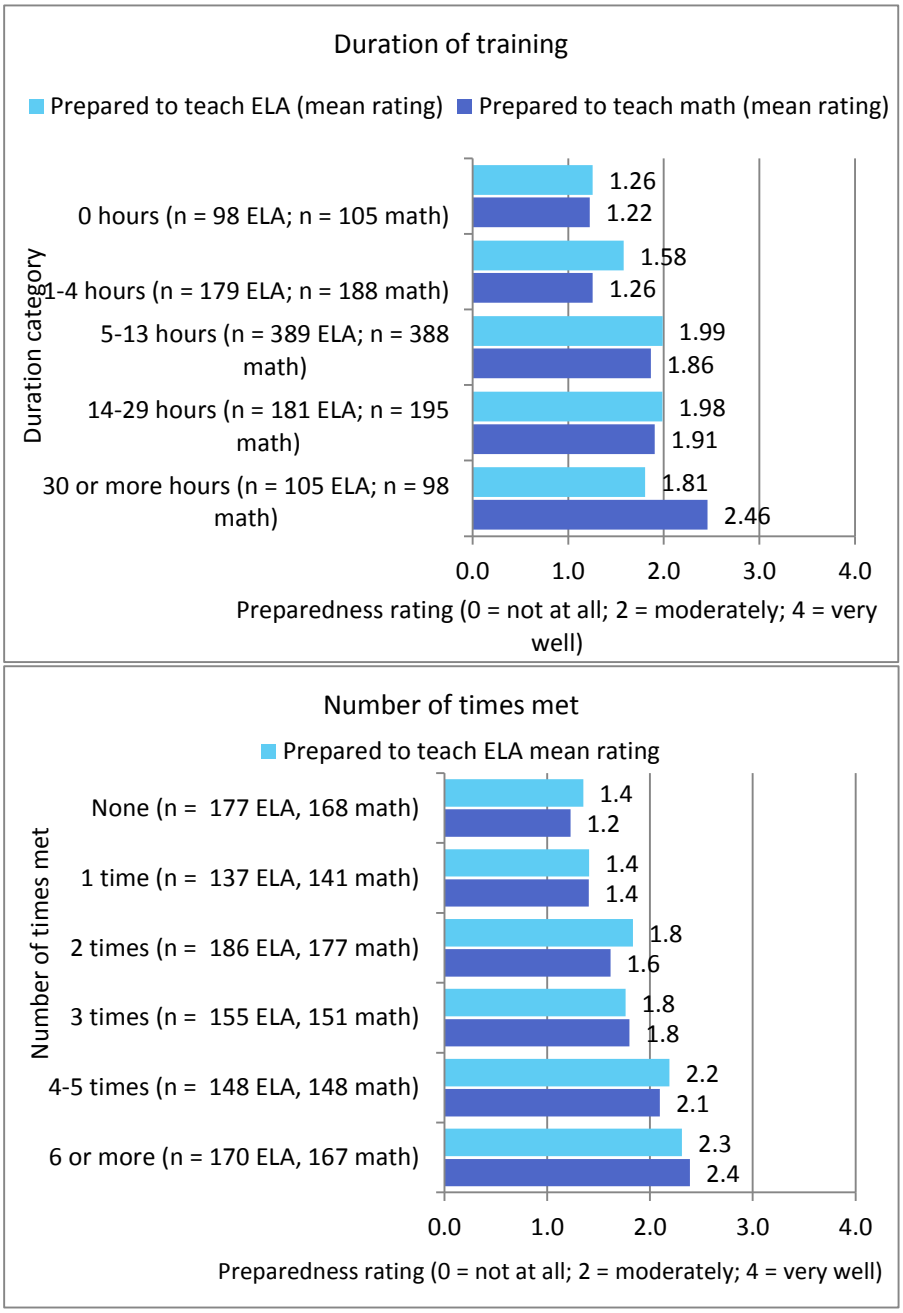

Figure 8. Preparedness to Teach to the NxGen Standards by Duration and Frequency of Training

The top chart shows the mean preparedness rating assigned by ELA or math teachers who reported receiving varying amounts of training (from 0 to more than 30 hours). The bottom chart shows the mean preparedness rating assigned by teachers who met various numbers of times for training.

clearer as shown in Figure 8. As the number of times met rose, so did the mean level of preparedness in nearly all cases. These results were statistically significant for both ELA (r = .147; p = .000) and math (r = .174; p = .000).

Use of research-based PD practices

Figure 9 shows that teachers who attended training that included 70% or more of practices associated with effective professional development tended to consider themselves about twice as prepared as those whose training that included 20% or fewer of those practices. This positive correlation was found to be statistically significant and stron-ger than either the duration or frequency of training for both ELA (r = .308; p = .000) and math (r = .292; p = .000; see Table A 9, page 31).

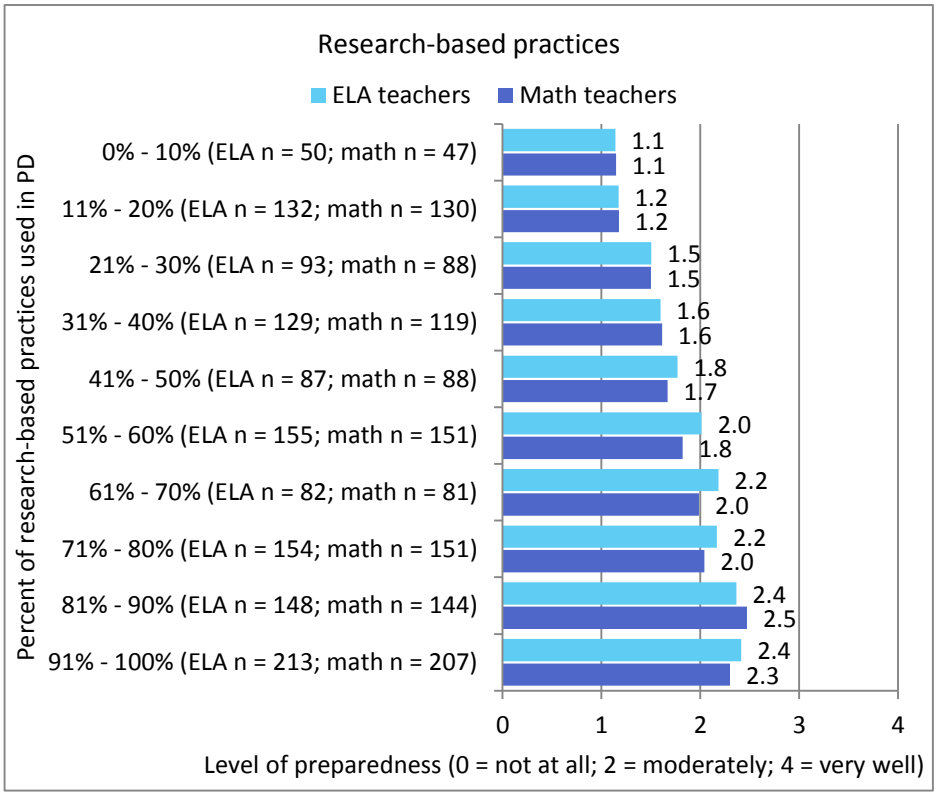

Figure 9. Preparedness to Teach to the NxGen Standards by Use of Research-Based PD Practices

Teachers responded to 15 items in the survey meant to measure the adherence to PD practices found to be associated with changes in teacher practice and student achievement. This graph shows that when teachers reported the PD they attended had higher percentages of the research-based practices, they also tended to report higher levels of confidence in their preparedness to teach to the NxGen standards.

Role group(s) of trainers

Specific role groups or combinations of role groups were associated with mean preparedness levels as shown in Figure 10. Overall, receiving training from some combination of RESA staff, district staff, or one's own school staff seemed to result in higher levels of confidence that teachers' were prepared to teach to the NxGen standards than receiving training from only one of these role groups. Figure 10 breaks out the *fellow teacher* subset from the

larger *own school staff* category because teachers were such a large segment of the EEA participants. Yet end-user teachers who received their training only from a fellow teacher were at the bottom of the ranks for reporting a sense of preparedness. Receiving training solely from their own school staff or from a RESA staff member alone ranked only slightly higher than training solely from a fellow teacher.

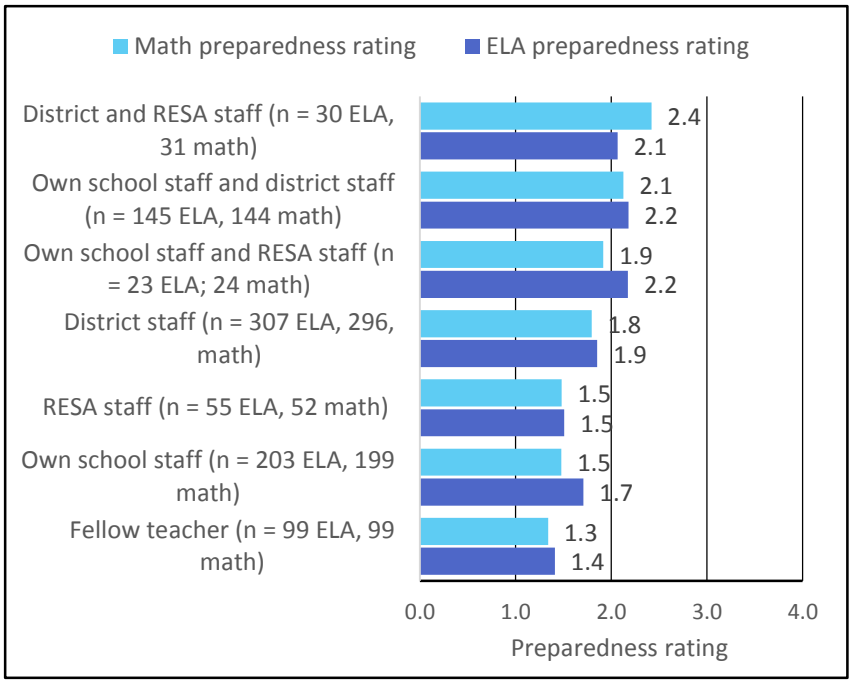

Figure 10. Preparedness to Teach to the NxGen Standards by Role Group(s) of Trainers

This analysis includes all end-user teachers who received at least 1 hour of training. The *fellow teacher* category is a subset of *own school staff*, broken out here because such a large segment of the trainers trained in the EEAs were teachers, making up about two thirds of all EEA trainees.

A chi-square test showed that the differences among role groups were statistically significant for all but the following combinations: "own school staff and RESA staff", "district staff and RESA staff", and "own school staff and district staff" (math only; see Table A 10, page 31).

Relationship of role group(s) of trainers to duration and frequency of training, and use of research-based practices.

To better understand the variation in preparedness outcomes among trainer role groups, we looked at the differences for role groups in their use of research-based PD practices, the number of times they met with end-user teachers, and the duration of training they provided. Table 2 shows the relatively lower rates at which the *fellow teacher only*, *school staff only*, and *district staff only* role groups provided training adhering to research-based PD practices, lasting more than about two days, or that met at least four times. Yet, these three role groups acting alone provided training to most of the respondents in the survey.

Table 2. Differences Among Training Sources Regarding Use of Research-Based Practices, Duration of Training, and Number of Times Met

	Percent of research-based PD practices used			Duration in hours			Number of times met		
English/language arts									
Training received from . . .	*N*	Mean	*SD*	*N*	Mean	*SD*	*N*	Mean	*SD*
District and RESA staff	36	70.4	27.76	36	20.1	15.58	36	4.6	3.11
School and district staff	157	62.1	29.78	158	14.4	14.66	156	5.0	5.26
School and RESA staff	26	60.6	24.48	26	18.8	13.82	26	4.9	7.69
RESA staff only	61	53.7	30.46	61	14.7	12.45	61	2.9	3.43
District staff only	331	53.1	28.60	335	12.9	14.94	335	3.1	4.30
School staff only	225	50.9	31.31	227	10.0	10.73	226	3.8	4.56
Fellow teacher only	114	44.8	29.36	114	9.7	10.66	113	3.0	2.93
Math									
Training received from . . .	*N*	Mean	*SD*	*N*	Mean	*SD*	*N*	Mean	*SD*
District and RESA staff	79	69.4	26.63	79	22.9	16.93	79	4.9	3.47
School and district staff	211	64.0	28.58	221	14.3	13.84	218	4.9	5.22
School and RESA staff	60	61.3	26.71	65	21.0	14.54	64	5.4	6.64
RESA staff only	137	57.8	27.93	140	20.8	17.17	140	3.6	3.54
District staff only	413	54.4	28.80	443	13.8	16.12	443	3.3	4.31
School staff only	290	54.0	30.75	318	10.1	11.19	317	3.9	5.03
Fellow teacher only	149	48.9	29.34	162	10.5	12.17	161	3.2	3.11

Discussion

Findings are summarized and interpreted below by evaluation question.

EQ1. To what extent did participants in the EEAs follow up with their own training?

The great majority of the respondents (85%) to the September 2013 follow-up survey indicated they had provided training. Depending upon EEA participants' regular role in their counties, they reported providing more or less training to end-user teachers. District central office staff seemed in the best position to provide training as evidenced by the numbers they trained, the number of hours they had provided to a typical participant in their sessions by early fall 2013, and the additional hours of training they planned to provide. By comparison, other role groups appeared at a disadvantage, especially teachers and principals with regard to planned follow-up.

EQ2. What challenges did EEA participants encounter and what supports did they indicate they needed going forward?

Most EEA-trained trainers were able to schedule at least some training; where training had taken place, scheduling was still difficult, as was getting people's attention and buy-in. Many of the trainers reported needing more training themselves, especially in the instructional shifts and other aspects of classroom implementation, and help in locating curriculum and other resources they needed for planning instruction.

EQ3. What follow-up did RESAs provide after the initial EEA training?

EEA-facilitated follow-up training took place in schools, counties, and RESAs, although counties seemed to be squarely in the lead in most regions. It appeared that in general, counties focused on their own schools, although in two RESAs (2 and 5), there was a more regional approach to developing and using EEA-trained trainers as local experts available across counties. Although two-thirds of the participants in the EEAs were teachers, they seemed to face more obstacles in both delivering and receiving additional training due to the real limits of county budgets for supporting release time. Most RESAs provided additional training to EEA-trained trainers in their regions, but a minority of them as of May 2014 has firm plans for providing additional support going forward. Most RESA PD directors appreciated the technical expertise of WVDE trainers that was exhibited at the EEAs and hope to continue to draw upon that expertise. While as a group they considered the EEAs an effective way to roll out the standards some expressed concern about sustaining the effort over the time it will take to fully implement the NxGen CSOs.

EQ4. What was the NxGen professional development experience of teachers during the 2013-2014 school year?

Whether they were EEA-trained teachers or end-user teachers, relatively few teachers received professional development of a duration (at least 30 contact hours) that one would expect to produce changes in teacher practice or student performance. Further, it was relatively rare for end-user teachers to meet for NxGen training more than three times between June 2013 and May 2014. EEA trained teachers fared better in that regard, with about half meeting more than three times.

For the most part, end-user teachers were trained by district or school staff (or both). EEA-trained teachers were quite likely to also receive training from RESA staff.

Most teachers received training that did not include time to plan classroom implementation of NxGen CSOs or to practice new skills. Teachers generally felt they had not met enough times, nor did they have enough contact hours to learn the skills and content. They did engage in their training collectively, which research shows increases the chances of teachers gaining common understandings and collaborating back in their schools. They could also see the alignment of the training they received with their own schools' and districts' goals.

EQ5. What were the outcomes of 2013-2014 professional development experiences in terms of teachers' overall sense of preparedness to teach the NxGen CSOs and perceived impacts of these experiences on knowledge, practice, and beliefs?

At the end of the school year preceding full implementation of the NxGen standards, just over a third of end-user teachers viewed themselves as well prepared to teach to the NxGen standards. Among EEA-trained teacher trainers, nearly half shared that level of confidence. Notably, more than a quarter of all teachers responding to the survey considered themselves not at all prepared.

In addition to reporting their sense of preparedness, teachers also provided assessments—both before (retrospectively) and after their training during 2013-2014—of the extensiveness of their knowledge of the standards, practice of the instructional shifts, and belief that their students can achieve at levels benchmarked in the standards. Overall, they believed themselves to have gained the most from their training in their knowledge of the standards, less in their practice of the instructional shifts, and least of all in their beliefs about the potential success of their students in reaching the NxGen benchmarks. On average, they began and ended the year believing "to a small extent" that their students could reach the benchmarks.

EQ6. What training–related factors may have been at work to produce these outcomes?

When working in combination, district, school, and RESA staff were more likely than when working alone, to provide higher quality, more frequent, and longer duration professional development–all qualities associated in this study with heightened confidence in being prepared to teach the NxGen Standards.

Recommendations

While a close study of the findings in this study may point to additional needs, we make three major recommendations:

Strongly focus on raising trainers' and teachers' expectations and beliefs that their students can learn at levels benchmarked in the Next Generations standards.

The professional development that was offered during 2013-2014 did little to convince teachers that their students could learn at higher levels. Yet decades of research has shown the impact teacher expectations can have on their students achievement and the benefits of academic press, so this is a critical area of *need*.

Focus future train-the-trainer activities on district level staff

The success of the train-the-trainer model depends on the ability of those trained to provide training back in their home school or district. In this study we learned that teachers and principals were at a disadvantage to provide such training, especially in terms of scheduling the number of hours and follow-up meetings that research indicates it takes to change teacher practice and improve student performance. District central office staff were in a much better position to provide such training and, in fact, did provide most of the training received by teachers in the targeted grades across the state.

Provide an infrastructure for ongoing training and access to guidance materials for local trainers

After providing their initial training back in their home districts, many participants in the EEAs reported needing more training themselves and help in locating guidance resources such as sample lesson plans, pacing guides, and the like. Very few of the EEA-trained teachers had received professional development of sufficient duration to effect changes in their own practice, and only about half considered themselves fairly well or very well prepared to teach to the standards themselves, let alone train others to teach to the standards.

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Appendix Tables Displaying Results

Table A 1. Training Provided and Planned by EEA Attendees Reported by Role Group

		Provided training					Will provide follow-up training		
Role groups	Total respon-dents	*n*	%	Mean number trained	Mean number training events held	Typical duration of training	*n*	% of those that had provided training	Additional hours training/ support planned
All role groups	578	493	85.3	55.8	2.57	9.3	338	68.6	10.3
District central office staff	63	56	88.9	165.3	4.54	12.0	49	87.5	17.2
General classroom teacher	378	318	84.1	31.9	2.27	9.2	202	63.5	8.0
Instructional Coach	18	16	88.9	81.3	2.80	9.0	14	87.5	8.4
Instructional support teacher/specialist (non-special educa-tion)	63	58	92.1	70.3	2.96	7.6	47	81.0	11.9
Principal/assistant principal	27	24	88.9	62.1	1.65	8.9	15	62.5	11.1
Special education teacher	29	21	72.4	41.3	1.90	8.9	11	52.4	6.5

Data source: Follow-up EEA Participant Survey (September 2013)
Means include only those EEA trainers who indicated they had provided training and who planned to provide follow-up.

Table A 2. End-User Teachers: Mean Hours of PD Received and Number of Times Met June 2013 Through May 2014

	Hours of PD received			Number of times met		
	Mean	*n*	*SD*	Mean	*n*	*SD*
Total	12.1	1080	14.214	3.6	1079	6.076
Targeted grade levels						
Elementary School (Grades 2-3)	10.8	382	11.150	3.7	381	4.904
Middle School (Grades 6-8)	13.5	409	17.545	3.8	409	7.530
High School (Grades 10-12)	11.0	339	11.878	3.3	338	4.833
Content areas						
English/language arts	11.4	256	12.795	3.3	257	4.605
Mathematics	15.2	243	17.203	4.0	244	9.158
Both English/language arts and mathematics	11.7	206	12.004	3.9	204	5.679
Special education	11.0	282	15.136	3.5	281	4.507
Other	9.7	93	8.909	3.6	93	4.241
RESA						
RESA 1	10.6	113	12.757	2.9	112	3.089
RESA 2	14.4	94	12.790	4.1	94	4.268
RESA 3	12.4	151	14.252	4.4	151	10.272
RESA 4	13.5	71	16.773	4.9	72	9.715
RESA 5	15.6	110	15.463	3.3	110	3.873
RESA 6	12.4	75	13.337	4.6	76	5.395
RESA 7	12.1	211	17.715	3.8	212	5.886
RESA 8	9.7	182	10.345	2.5	181	3.144

NOTE: Pink highlights lower than mean numbers for the subgrouping, while green indicates mean or higher than mean numbers.

Table A 3. EEA-Trained Trainers: Mean Hours of PD Received and Number of Times Met June 2013 Through May 2014

	Hours of PD received			Number of times met		
Teacher respondents in . . .	Mean	*n*	*SD*	Mean	*n*	*SD*
Total	23.1	303	20.758	5.0	309	5.750
Targeted grade levels						
Elementary School (Grades 2-3)	18.3	65	15.679	4.3	67	4.426
Middle School (Grades 6-8)	22.9	123	22.541	5.2	125	5.523
High School (Grades 10-12)	25.1	127	20.545	5.1	129	6.387
Content areas						
English/language arts	20.3	109	17.823	4.9	110	6.030
Mathematics	27.9	116	24.234	5.4	119	5.146
Both English/language arts and mathematics	19.3	36	16.233	4.6	37	4.113
Special education	21.6	29	21.153	5.2	30	8.924
Other	17.9	13	13.203	3.7	13	3.301
RESA						
RESA 1	24.5	31	19.218	4.7	33	6.728
RESA 2	26.6	21	21.630	5.6	21	4.631
RESA 3	22.8	43	26.837	6.8	44	6.391
RESA 4	23.6	20	19.999	4.4	20	2.889
RESA 5	24.1	17	18.079	4.8	17	4.918
RESA 6	28.4	34	24.229	5.4	34	3.620
RESA 7	11.8	56	14.623	2.7	57	2.781
RESA 8	32.8	53	18.120	5.7	55	6.884

NOTE: Pink highlights lower than mean numbers for the subgrouping, while green indicates higher than mean numbers.

Table A 4. Adherence to Research-Based Practices by Individual Item, EEA-Trained and End-User Teachers

		EEA-trained teachers			End-user teachers		
		Respondents this item	Agreed or strongly agreed		Respondents this item	Agreed or strongly agreed	
	PD research-based practices		Number	Percent		Number	Percent
Content	Content focused	285	212	74	937	524	56
	Content-pedagogy focused	284	220	77	933	556	60
	Used curriculum materials in training	285	188	66	932	520	56
Coherence	Aligned with school and district goals	286	238	83	926	687	74
	Aligned to individual learning needs	285	201	71	933	494	53
	Was challenging and not redundant with previous training	278	172	62	918	546	59
Active learning	Included discussions	288	181	63	931	493	53
	Included time to plan classroom implementation	286	103	36	931	300	32
	Included practice of new skills and feedback	287	150	52	932	386	41
Collective	Involved collective participation with colleagues from own school	284	249	88	936	788	84
	Facilitate collaboration with colleagues in work setting	286	195	68	932	540	58
	Developed common understandings among	284	190	67	940	525	56
Duration	Had sufficient contact hours to learn new skill and content	285	169	59	929	407	44
	Included adequate number of meetings over time to practice	285	144	51	920	367	40
	Was about the correct length of time for the content	279	208	75	921	654	71

NOTE: This analysis includes only respondents who indicated they had received at least 1 hour of NxGen training

Table A 5. Adherence to Research-Based Practices Mean Score by Content Area, Programmatic Level, and Home RESA: EEA-Trained Versus End-User Teachers

	EEA-trained teachers			End-user teachers		
	Mean	*n*	*SD*	Mean	*n*	*SD*
Overall	66.0	288	26.522	55.7	951	29.687
Content area						
ELA	68.2	102	24.346	55.1	225	29.056
Math	62.2	110	27.860	53.1	219	29.072
Both ELA and Mathematics	64.4	34	30.761	51.7	190	29.789
Special education	75.9	29	21.440	61.1	238	29.464
Other	62.6	13	26.097	57.5	79	31.783
Programmatic level						
Elementary school (Grades 2-3)	64.5	63	29.686	55.0	343	30.449
Middle school (Grades 6-8)	69.2	115	24.420	58.2	349	28.873
High school (Grades 2-3)	63.2	121	26.888	53.8	296	30.030
Region						
RESA1	63.7	31	25.126	52.0	96	30.641
RESA2	64.4	19	23.393	63.8	86	29.222
RESA3	71.8	40	24.882	58.9	138	29.945
RESA4	61.9	20	29.932	55.2	61	31.914
RESA5	62.4	17	32.912	57.5	94	30.237
RESA6	77.3	34	20.798	63.8	66	27.244
RESA7	61.1	49	25.870	52.8	186	28.960
RESA8	63.6	53	26.848	50.9	160	27.892

NOTE: Includes only respondents who indicated they had received at least 1 hour of NxGen training.

Table A 6. Level of Preparedness to Teach to the NxGen CSOs for EEA-Trained and End-User Teachers

	Teachers trained to train at EEA			End-user teachers		
Level of preparedness	Mean rating	Number	Percent	Mean rating	Number	Percent
Prepared to teach ELA						
All respondents	2.03	275	100.0	1.81	982	100.0
0 = Not at all prepared		85	30.9		253	25.8
1 = Somewhat		24	8.7		166	16.9
2 = Moderately		38	13.8		209	21.3
3 = Fairly well		54	19.6		224	22.8
4 = Very well		74	26.9		130	13.2
Prepared to teach math						
All respondents	2.00	273	100.0	1.76	962	100.0
0 = Not at all prepared		79	28.9		263	27.3
1 = Somewhat		24	8.8		167	17.4
2 = Moderately		43	15.8		192	20.0
3 = Fairly well		71	26.0		215	22.3
4 = Very well		56	20.5		125	13.0

Table A 7. Pre-Post Retrospective Measure of Impact, Including Means, Correlation, and Effect Size by Group

Description	Comparison group (Pretest rating) Mean	*SD*	*N*	Treatment group (Posttest rating) Mean	*SD*	*N*	Pre/ Posttest correlation	Paired-samples *t* test sig. (2-tailed)	*Effect size d*
Teachers trained to train at EEA									
Knowledge about NxGen standards	1.5	0.857	286	2.3	0.641	286	.518	.000	1.035
Practice of the instructional shifts	1.6	0.920	282	2.1	0.716	282	.590	.000	0.623
Belief students can perform at benchmarked levels	1.4	0.792	283	1.7	0.733	283	.682	.000	0.377
End-user teachers									
Knowledge about NxGen standards	1.3	0.778	946	1.9	0.658	946	.520	.000	0.836
Practice of the instructional shifts	1.3	0.875	917	1.8	0.784	917	.616	.000	0.504
Belief students can perform at benchmarked levels	1.2	0.793	922	1.4	0.814	922	.768	.000	0.212

Note: The rating scale for the three pre-post retrospective impact items included 0 (*not at all*), 1 (*to a small extent*), 2 (*to a moderate extent*), and 3 (*to a great extent*).

Table A 8. Significance Testing and Effect Size Analysis of Impacts on Knowledge, Practice, and Beliefs by Content Area

	Paired Differences								
				95% Confidence interval of the difference					
	Mean	Std. deviation	Std. error mean	Lower	Upper	*t*	*df*	Sig. (2-tailed)	Cohen's *d*
English/language arts teachers (n = 356)									
Knowledge about NxGen standards	.63483	.72874	.03862	.55887	.71079	16.437	355	.000	0.7263
Practice of the instructional shifts	.44318	.75648	.04032	.36388	.52248	10.991	351	.000	0.4260
Belief students can perform at benchmarked levels	.28490	.57943	.03093	.22407	.34573	9.212	350	.000	0.2737
Mathematics teachers (n = 351)									
Knowledge about NxGen standards	.63818	.71524	.03818	.56309	.71326	16.716	350	.000	0.8197
Practice of the instructional shifts	.44643	.71034	.03875	.37020	.52266	11.520	335	.000	0.4374
Belief students can perform at benchmarked levels	.25588	.51736	.02806	.20069	.31107	9.120	339	.000	0.2116
Both English/language arts and mathematics teachers (teach both subjects, n = 249)									
Knowledge about NxGen standards	.70281	.71281	.04517	.61384	.79178	15.558	248	.000	1.0895
Practice of the instructional shifts	.62500	.76387	.04851	.52946	.72054	12.885	247	.000	0.7866
Belief students can perform at benchmarked levels	.29960	.59752	.03802	.22471	.37448	7.880	246	.000	0.3071
Special education teachers (n = 299)									
Knowledge about NxGen standards	.65552	.72704	.04205	.57277	.73826	15.591	298	.000	1.0691
Practice of the instructional shifts	.47603	.70548	.04129	.39477	.55728	11.530	291	.000	0.5288
Belief students can perform at benchmarked levels	.23469	.55670	.03247	.17079	.29859	7.229	293	.000	0.2092

This analysis includes all teachers who reported receiving at least 1 hour of training.

Table A 9. Relationships of Duration (Hours), Times Met for Training, and Use of Research-Based PD Practices to Teachers' Preparedness to Teach ELA or Math (Pearson's *r*)

		Prepared to teach ELA	Prepared to teach math
Duration in hours	Pearson Correlation	.044	.204
	Sig. (2-tailed)	.094	.000 *
	N	1473	1433
Number of times met for training	Pearson Correlation	.147	.174
	Sig. (2-tailed)	.000 *	.000 *
	N	1476	1438
Research-based practices standardized score	Pearson Correlation	.308	.292
	Sig. (2-tailed)	.000 *	.000 *
	N	1311	1271

Note: This analysis includes all teachers.
*Statistically significant at the .001 level

Table A 10. Chi-Square Test of Categorical Variable "Role Group of Trainer(s)" and Preparedness to Teach ELA and Math

	Prepared to teach ELA			Prepared to teach math		
	X^2	*df*	*p*	X^2	*df*	*p*
Fellow teacher	23.911	4	.000 *	21.392	4	.000 *
Own school staff	15.550	4	.004 *	29.932	4	.000 *
District staff	19.947	4	.001 *	10.174	4	.038 *
RESA staff	13.469	4	.009 *	13.166	4	.010 *
District staff and RESA staff	5.536	4	.237	6.903	4	.141
Own school staff and RESA staff	2.212	4	.697	1.838	4	.765
Own school staff and district staff	13.115	4	.011 *	7.494	4	.112

Note: This analysis includes only teachers who received at least 1 hour of training.
*Statistically significant at the .05 level

Table A 11. Preparedness to Teach to NxGen Standards in ELA or Math by Extensiveness of training

	Prepared to teach ELA			Prepared to teach math		
Duration categories	*N*	Mean rating	*SD*	*N*	Mean rating	*SD*
No training (0 hours)	98	1.22	1.281	105	1.26	1.264
Informational (1-4 hours)	179	1.26	1.250	188	1.58	1.223
Technical training (5-13 hours)	389	1.86	1.345	388	1.99	1.374
Sustained PD (14-29 hours)	181	1.91	1.501	195	1.98	1.427
Recommended (30 or more hours)	105	2.46	1.316	98	1.81	1.571

Note: The preparedness rating scale used for this item was 0 = not at all; 1 = somewhat, 2 = moderately, 3 = fairly well, and 4 = very well.

Table A 12. Preparedness to Teach to NxGen Standards in ELA or Math by Number of Times Met for Training

	Prepared to teach ELA			Prepared to teach math		
Number of times met for training	*N*	Mean rating	*SD*	*N*	Mean rating	*SD*
None	177	1.35	1.253	168	1.23	1.242
1 time	137	1.41	1.309	141	1.40	1.282
2 times	186	1.83	1.269	177	1.62	1.361
3 times	155	1.76	1.433	151	1.80	1.410
4-5 times	148	2.19	1.337	148	2.09	1.367
6 or more	170	2.31	1.452	167	2.39	1.383

Table A 13. Preparedness to Teach to NxGen Standards in ELA or Math by Percent of Research-Based Practices Used in Training

	Prepared to teach ELA			Prepared to teach math		
Percent of research-based PD practices	*N*	Mean rating	*SD*	*N*	Mean rating	*SD*
0% - 10%	50	1.14	1.229	47	1.15	1.179
11% - 20%	132	1.17	1.162	130	1.18	1.103
21% - 30%	93	1.51	1.239	88	1.50	1.269
31% - 40%	129	1.60	1.349	119	1.61	1.296
41% - 50%	87	1.77	1.387	88	1.67	1.337
51% - 60%	155	2.01	1.410	151	1.82	1.410
61% - 70%	82	2.18	1.508	81	1.99	1.401
71% - 80%	154	2.17	1.423	151	2.04	1.505
81% - 90%	148	2.36	1.366	144	2.47	1.343
91% - 100%	213	2.41	1.492	207	2.30	1.500

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