
NWRPDP
Northwestern Nevada Regional
Professional Development Program

# 2017-2018 Annual Report
# November 2018

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# NWRPDP

# Northwestern Nevada Regional Professional Development Program

## Introduction

The 70th Session (1999) of the Nevada State Legislature passed Senate Bill 555, which, under Sections 16 and 17, authorized the establishment of four Regional Professional Development Programs (RPDPs) in the state. Since that 1999 session, the four programs have been reduced to three. Their collective charge is to support the state's teachers and administrators in implementing Nevada's academic content standards through regionally determined professional development activities. Although the essential mission has remained unchanged, legislative mandates and the pedagogical needs of teachers continue to broaden the program's scope and responsibilities; the programs' expertise is called upon to assist with district and statewide educational committees and assist in statewide efforts to improve instruction through the Nevada Educator Performance Framework (NEPF).

The planning and implementation of professional development services in each region is overseen by a governing body consisting of superintendents in the respective regions, master teachers appointed by the superintendents, representatives of Nevada's higher education system, and the State Department of Education. A nine-member Statewide Coordinating Council, consisting of members appointed by the Governor or legislators, the Superintendent of Public Instruction, and one member from each of the RPDP governing boards oversees the three regional programs.

As outlined in Standards for Professional Learning (Learning Forward, 2011), there is a relationship between professional learning and student results:

1. When professional learning is standards-based, it has greater potential to change what educators know, are able to do, and believe.

2. When educators' knowledge, skills, and dispositions change, they have a broader repertoire of effective strategies to use to adapt their practices to meet performance expectations and student learning needs.

3. When educator practice improves, students have a greater likelihood of achieving results.

4. When student results improve, the cycle repeats for continuous improvement (p. 16).

Figure 1 below is a visual representation of the relationship between professional learning based on the Professional Learning Standards and improved student learning. (Desimone, 2009).

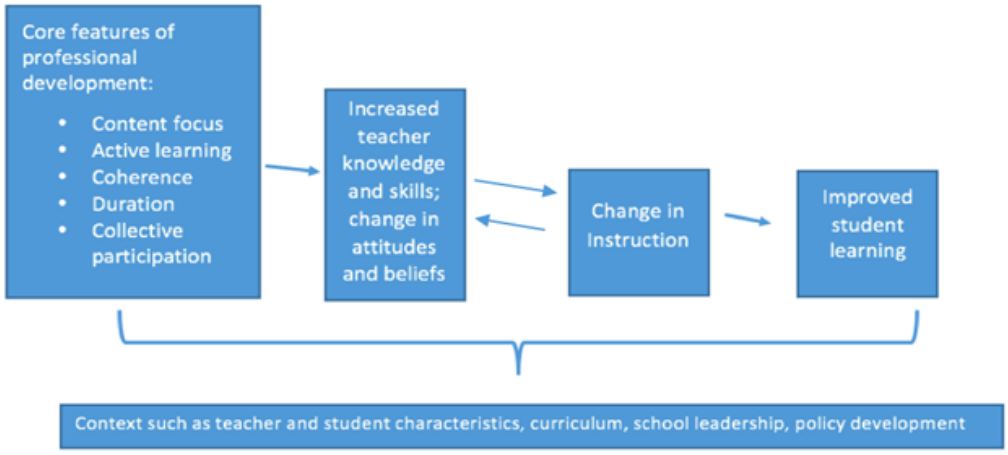


***Figure 1:*** *Conceptual Framework for Studying Effects of Professional Development on Teachers and Students*

The updated Standards for Professional Learning from the national professional development organization, Learning Forward, were adopted by the Regional Professional Development Programs in 2011. In 2017, Nevada included two additional standards to address equity and cultural competency. These nine standards are used synergistically in order to increase educator effectiveness thereby improving students learning. The standards provide a framework for planning and leading professional learning opportunities.

## Part I: NRS 391A.190 1c Evaluation of Regional Training Program

*(1) The priorities for training adopted by the governing body pursuant to* NRS 391A.175 [391A.175 (a) *Adopt a Training Model, taking into consideration other model programs, including, without limitation, the program used by the Geographic Alliance in Nevada.]*

After conversations with our service requestor to establish the outcome(s) of the professional learning and alignment with the standards for professional development adopted by the State Board, a training model that is best matched to the work is chosen. Training models may include, without limitation, action research, critical friends/professional learning communities, personal learning networks, coaching, mentoring, instructional rounds, lesson study, and educational courses.

391A.175 (b) *Assess the training needs of teachers and administrators who are employed by the school districts within the primary jurisdiction of the regional training program and adopt priorities of training for the program based upon the assessment of needs. The board of trustees*

*of each school district may submit recommendations to the appropriate governing body for the types of training that should be offered by the regional training program.*

391A.175 (c) *In making the assessment required by paragraph (b) and as deemed necessary by the governing body, review the plans to improve the achievement of pupils prepared pursuant to NRS 385A.650 for individual schools within the primary jurisdiction of the regional training program.*

The assessment of training needs of teachers and administrators is determined through a request for service model. This model takes into consideration the needs of our districts and includes a combination of planning tools and strategies, including but not limited to the following:

- Request for services from district personnel or principals based on School Performance Plans (SPP) and needs of teachers on staff;
- Collaborative meetings with superintendents and/or key district personnel to identify priorities and needs on an annual basis guided by District Performance Plans (DPP);
- Collaborative planning meetings with principals and leadership teams to determine goals and objectives for designing a professional development plan;
- Formal and informal needs assessments as needed with districts, departments, and/or schools;
- Input from the RPDP Governing Boards; and/or
- Collaborative work with the Nevada Department of Education on initiatives to design and implement support or roll-out plans for the NVACS as well as other state initiatives.

Table 1. 391A.190 1c (8) *An evaluation of the effectiveness of the regional training program, including, without limitation, the Nevada Early Literacy Intervention Program, in accordance with the method established pursuant to paragraph (a), and (10) An evaluation of the effectiveness of training on improving the quality of instruction and the achievement of pupils:*

***Table 1:*** *RPDP State Approved Evaluation*

| **RPDP State Approved Evaluation (5-point scale)** | **2017-18** |
|---|---|
| 1. The training matched my needs. | 4.74 |
| 2. The training provided opportunities for interactions and reflections. | 4.83 |
| 3. The presenter's/facilitator's experience and expertise enhanced the quality of the training. | 4.87 |
| 4. The presenter/facilitator efficiently managed time and pacing of activities. | 4.81 |
| 5. The presenter/facilitator modeled effective teaching strategies. | 4.79 |

| RPDP State Approved Evaluation (5-point scale) | 2017-18 |
|---|---|
| 6: This training added to my knowledge of standards and/or my subject matter content. | 4.73 |
| 7. This training will improve my teaching skills. | 4.74 |
| 8. I will use the knowledge and skills from this training in my classroom or professional duties. | 4.80 |
| 9. This training will help me meet the needs of diverse student populations. | 4.66 |

*Table 2. 391A.190 1c (2) Type of training offered through the regional training program in the immediately preceding year.*

Table 2: Type of Training by Number and Percentage

| | *Aggregate* | *Carson* | *Churchill* | *Douglas* | *Lyon* | *Storey* | *Washoe* |
|---|---|---|---|---|---|---|---|
| ***Total Trainings*** | **194** | **41** | **39** | **37** | **32** | **6** | **81** |
| *Instructional* | 88% | 85% | 69% | 97% | 100% | 100% | 89% |
| *Observation and Mentoring* | 7% | 5% | 15% | 3% | 0% | 0% | 5% |
| *Consulting* | 5% | 12% | 3% | 0% | 0% | 0% | 6% |

Note: Aggregate total trainings equals the total of all 2017-2018 NWRPDP trainings. Because educators from different districts often attend the same trainings, totals by district will exceed the aggregate total.

Table 3. 391A.190 1c (3) *The number of teachers and administrators who received training through the regional training program in the immediately preceding year.*

***Table 3:*** *Number of Teachers and Administrators Who Received Training*

| | *Aggregate* | *Carson* | *Churchill* | *Douglas* | *Lyon* | *Storey* | *Washoe* |
|---|---|---|---|---|---|---|---|
| ***Total Regional Teachers*** | **4220** | **470** | **183** | **410** | **549** | **28** | **2580** |
| *Unduplicated Teachers* | 2223 | 260 | 142 | 231 | 193 | 9 | 1388 |
| *Duplicated Teachers* | 3732 | 538 | 338 | 476 | 262 | 12 | 2106 |
| ***Total Regional Administrators*** | **541** | **32** | **14** | **31** | **50** | **4** | **410** |
| *Unduplicated Administrators* | 96 | 39 | 6 | 18 | 11 | 3 | 19 |
| *Duplicated Administrators* | 141 | 63 | 10 | 26 | 15 | 3 | 24 |

Table 4. 391A.190 1c (4) *The number of administrators who received training pursuant to [NEPF] in the immediately preceding year.*

***Table 4:*** *Number of Administrators Receiving Training*

| | *Aggregate* | *Carson* | *Churchill* | *Douglas* | *Lyon* | *Storey* | *Washoe* |
|---|---|---|---|---|---|---|---|
| *Unduplicated Administrators* | 96 | 39 | 6 | 18 | 11 | 3 | 19 |
| *Duplicated Administrators* | 141 | 63 | 10 | 26 | 15 | 3 | 24 |

Table 5. 391A.190 1c (5) *The number of teachers, administrators, and OLEP who received training [specific to correct deficiencies in performance identified per NEPF evaluation] in the immediately preceding year.*

***Table 5:*** *Number of Teachers, Administrators, and OLEP*

| | *Aggregate* | *Carson* | *Churchill* | *Douglas* | *Lyon* | *Storey* | *Washoe* |
|---|---|---|---|---|---|---|---|
| *Teachers, Admin, OLEP* | 0 | 0 | 0 | 0 | 0 | 0 | 0 |

Table 6. 391A.190 1c (6) *The number of teachers who received training in [family engagement] in the immediately preceding year.*

***Table 6:*** *Teacher Training in Family Engagement*

| | *Aggregate* | *Carson* | *Churchill* | *Douglas* | *Lyon* | *Storey* | *Washoe* |
|---|---|---|---|---|---|---|---|
| *Unduplicated Teachers* | 45 | 0 | 0 | 0 | 30 | 0 | 15 |
| *Duplicated Teachers* | 0 | 0 | 0 | 0 | 0 | 0 | 0 |

Table 7. 391A.190 1c (7) *The number of paraprofessionals, if any, who received training in the immediately preceding year.*

***Table 7:*** *Paraprofessional Training*

| | *Aggregate* | *Carson* | *Churchill* | *Douglas* | *Lyon* | *Storey* | *Washoe* |
|---|---|---|---|---|---|---|---|
| *Para-professionals* | 21 | 9 | 0 | 4 | 0 | 0 | 8 |

Table 8. 391A.190 1c (9) I & II *Trainings that included NVACS in the immediately preceding year;* III *Trainings that included NEPF in the immediately preceding year;* IV *Trainings that included culturally relevant pedagogy in the immediately preceding year.*

***Table 8:*** *NVACS, NEPF, and Culturally Relevant Pedagogy Trainings*

| | *Aggregate* | *Carson* | *Churchill* | *Douglas* | *Lyon* | *Storey* | *Washoe* |
|---|---|---|---|---|---|---|---|
| ***Total Trainings*** | **194** | **41** | **39** | **37** | **32** | **6** | **81** |
| *NVACS* | 69% | 66% | 64% | 62% | 67% | 83% | 79% |
| *NEPF* | 12% | 15% | 21% | 8% | 6% | 17% | 1% |
| *Culturally Relevant Pedagogy* | <1% | 2% | 0% | 3% | 0% | 0% | 1% |

Note: Aggregate total trainings equals the total of all 2017-2018 NWRPDP trainings. Because educators from different districts often attend the same trainings, totals by district will exceed the aggregate total. The proportions of NVACS, NEPF, and Culturally Relevant Pedagogy will not add to 100% because there were other types of trainings included in the total.

391A.190 1c (12) *The 5-year plan for the regional training program prepared pursuant to NRS 391A.175 and any revisions to the plan made by the governing body in the immediately preceding year.*

**NWRPDP**

**Northwestern Nevada Regional**

**Professional Development Program**

# Five Year Plan

## Establishment

The Northwestern Nevada Regional Professional Development Program (NWRPDP) is one of three state-funded professional development programs in the state. The 70th Session (1999) of the Nevada State Legislature passed Senate Bill 555, which, under Sections 16 and 17, authorized the establishment of four Regional Professional Development Programs (RPDPs) in the state; since that 1999 session, the four programs have been reduced to three. Their collective charge is to support the state's teachers and administrators in implementing Nevada's academic standards through regionally determined professional development activities. The planning and implementation of professional development services in each region must be overseen by a governing body consisting of superintendents in the respective regions, master teachers appointed by the superintendents, and representatives of Nevada's higher education system and the State Department of Education (Section 16.1-16.8).

The NWRPDP work targets three broad categories: 1) Meeting district requests for services (e.g., NVACS, differentiation, student engagement), 2) Fulfilling legislated mandates (e.g., NVACS, NEPF, Parent Engagement), and 3) Supporting individual teachers and schools (e.g., coaching, credit classes, modeling, instructional rounds).

The NWRPDP Five-Year Plan is a living document and is routinely examined and revised according to changing needs and focus within the region as well as changes in personnel.

## Service Area

The NWRPDP serves over 4,760 teachers and administrators in schools across six counties in Northwestern Nevada. The NWRPDP services Carson City, Churchill, Douglas, Lyon, Storey, and Washoe County School Districts. Among districts there is considerable disparity in the number of students, ranging from approximately 425 in Storey County to 64,000 in Washoe County.

## Measurement

In order to measure progress of the plan, multiple measures will be used. First, the statewide evaluation form will continue to be collected and reported. Second, the five-level evaluation of professional development framework (Guskey, 2002; Desimone, 2009) will guide the assessment of the professional development provided in our region. Third, qualitative documentation of stakeholders and specifically created as-needed surveys will provide measures of progress and success.

The Statewide Coordinating Council approved an outline structure for RPDP evaluation purposes to include the number of teachers and administrators affected by professional development in the region according to requirements set forth in NRS 391A.190.

# Northwest Regional Professional Development Five-Year Plan

# 2017-22

**Northwestern Nevada's Regional Program Development Program services the following school districts: Carson City, Churchill, Douglas, Lyon, Storey, and Washoe.**

## Vision and Mission

Our Vision: Nevada's Northwest Regional Professional Development Program, in accordance with the Nevada Revised statutes, is committed to elevating teaching and learning by providing sustained professional development and building regional partnerships.

Our Mission: Nevada's Northwest Regional Professional Development Program (NWRPDP) collaborates with stakeholders to provide high quality learning opportunities that are aligned with

the Nevada Professional Learning Standards and the Nevada Academic Content Standards. NWRPDP offers diverse professional learning opportunities and support based on current empirical research on effective instruction for student learning. We are committed to increasing communication between regional members and families in order to develop capacity among all partnerships and to increase student achievement.

## Professional Development Standards

The goals, strategies, and outcomes in this five-year plan are guided by the professional learning standards outlined by the Learning Forward organization and two standards legislated in 2017. When professional learning is standards-based, educator effectiveness has greater potential for change.

### Goals

The mission and vision of the NWRPDP guide the goals of the organization by providing a framework around which services are provided. An important aspect of the goals is to meet our organization's charges while continuing to honor and respect the individual regional districts' initiatives, strategic plans, and identities. Ultimately, there are four major goals to improve our performance and meet the needs of our region along with bulleted strategies identified to meet these goals:

**Goal 1:**

**Accelerate and deepen professional learning for *teachers* that increases their content knowledge of the Nevada Academic Content Standards, maximizes their implementation of empirically research-based instructional strategies, and ensures their ability to understand and use a variety of classroom assessments to make instructional decisions and changes based on data.**

- Provide ongoing leadership and support for understanding the Nevada Academic Content Standards.
- Create robust PD and implementation plans with specific outcomes in collaboration with stakeholders.
- Provide professional development that improves teaching and learning through the Standards.
- Provide and communicate professional development choices for teachers.
- Develop and provide professional development training to teachers on how to use data effectively to change and/or enhance student instruction.
- Provide professional development in the uses of technology integration for the purposes of teaching, learning, and college and career readiness.

- Provide professional development that has an immediate and sustained impact on teacher effectiveness and student achievement.
- Provide professional development that will increase the knowledge and understanding of evaluation and supervision expectations.
- Provide professional development opportunities for the NWRPDP Facilitators in order to stay current in their areas of expertise and to meet the needs of the region.

**Goal 2:**

**Accelerate and deepen professional learning for *school administrators* by increasing their instructional leadership skills, improving their ability to ensure teacher effectiveness, and maximizing their ability to make sure all classrooms are based on the Nevada Academic Content Standards.**

- Partner with administrators in order to develop positive relationships and trust.
- Provide ongoing leadership and support for understanding the Nevada Academic Content Standards.
- Encourage administrators to participate actively with teachers in content specific professional development.
- Provide professional development that improves teaching and learning through the Standards.
- Provide professional development on instructional leadership that has an immediate and sustained impact on teacher effectiveness and student achievement.
- Develop and provide professional development that trains administrators on how to use data effectively to change and/or enhance student instruction.
- Provide professional development in the uses of technology integration for the purposes of teaching, learning, and college and career readiness.
- Provide professional development that will increase the knowledge and understanding of evaluation and supervision skills.
- Provide professional development opportunities for the NWRPDP Facilitators in order to stay current with meeting the needs of administrators in the region.

**Goal 3:**

**Measure the impact of professional development work on teacher effectiveness and student learning.**

- Strategically collect and use data to provide direction for and assess professional development effectiveness.
- Apply appropriate models of measurement required for evidence, which may include but are not limited to: the State RPDP evaluation, case studies, post-reflective surveys, and other formative assessments and surveys.

- Continue to update data management systems to analyze evaluation data for decision-making for future services (Access, Google, work with UNR, etc).
- Design professional development goals for the NWRPDP Facilitators that are based on assessment and meet the needs of the region.
- Communicate findings to stakeholders.

**Goal 4:**

**Develop partnerships and enhance our public profile to support the expanded work of the NWRPDP.**

- Solicit partnerships to enhance the resources and services of the NWRPDP with teacher and administrator support.
- Identify common services, actions, and practices of the six districts in Northwestern Nevada as well as with the remaining districts and RPDPs across the state.
- Continue collaboration with systems of higher education and the Nevada Department of Education.
- Where appropriate, develop partnerships to secure financial resources to support expanded work of the NWRPDP.

**A Two-Year Focus (2017-19)**
**NRS 391A.175 section 1**

**(d) (1) An assessment of the training needs of teachers and administrators who are employed by the school districts within the primary jurisdiction of the regional training program;**

The assessment of training needs of teachers and administrators is determined through a request for service model. This model takes into consideration the needs of our districts and includes a combination of planning tools and strategies, including but not limited to the following:

- Request for services from district personnel based on School Performance Plans (SPP) and needs of teachers on staff;
- Collaborative meetings with superintendents and/or key district personnel to identify priorities and needs on an annual basis guided by District Performance Plans (DPP);
- Collaborative planning meetings with principals and leadership teams to determine goals and objectives for designing a professional development plan;
- Formal and informal needs assessments as needed with districts, departments, and/or schools;
- Input from the RPDP Governing Boards; and/or

- Collaborative work with the Nevada Department of Education on initiatives to design and implement support or roll-out plans for the NVACS as well as other state initiatives.

**(d) (2) Specific details of the training that will be offered by the regional training program for the first 2 years covered by the plan including, without limitation, the biennial budget of the regional training program for those 2 years.**

**Biennial Budget for the NWRPDP for 2017-19**: $2,233,856.00

## NWRPDP Sponsored Training Programs

The Northwest Regional Professional Development Program (NWRPDP) is a service organization providing professional learning opportunities to districts and schools within our region. Training programs offered each year vary depending upon the needs and requests of the districts we serve; the NWRPDP does not solely determine those training programs without significant input from our stakeholders. In addition to serving the requests of our districts and schools, the NWRPDP has developed and will provide the training listed below for teachers and administrators during the 2017-19 biennium.

- NVACS K-12 Computer Science Standards implementation with support from SB200
  Face to face classes to include teacher practice with and use of Code.org and other computer science materials, teacher planning and materials development
- NVACS Social Studies implementation and instructional resource support
  Teachers attend face to face training and participate in standards study, lesson planning, and materials development K-12
- (NELIP) Early Literacy Cadre/Literacy Cohort continuation
  Offerings through five levels of cadres focused on face to face collaborative learning for PreK-third grade teachers. Classroom observation and feedback, peer observation, lesson study, and video self-analysis are included. Content to include: strategies for teaching and learning in reading and writing, guided reading, running records, choice of literature, speaking and listening, assessment
- Deepening Writing Instruction at the secondary level
  Teachers engage in face to face workshops with self-guided practice in the classroom in between meetings. Content to include: Advanced strategies for literacy, Notice and Note, Expository writing, Thinking Maps, assessment
- Writers Workshop model
  Teachers will participate in face to face workshops and collaborate in Professional Learning Communities to assess student work, plan lessons based on assessment, and investigate resources. Content to include use of Lucy Calkins Units of Study

materials or Being A Writer materials. Lesson modeling and lesson study, classroom observation, and/or peer observation will be included.

- Math professional learning opportunities
    - Math support will include a variety of models
        - Site-based supports through a 6-week intensive on-site math team geared to supporting specific grade levels
        - Math leaders in each grade level attend professional development opportunities to increase their knowledge and gain leadership skills through a professional learning community model. Math leaders lead the on-demand professional learning at their individual sites. Classroom observation, collaborative lesson planning, materials development are included.
        - Attendance at the regional Middle School Math conference, as possible
        - High school math supported through on-site collaboration with school administration and math departments to include study of standards, math discourse, and high-level collaborative problem solving.
        - Math manipulative strategies for K-8 classrooms to include teacher practice with the manipulatives and math concepts, lesson planning for use of manipulatives in each teacher's classroom, assessment using math manipulatives
- STEM Program continuation – focus on primary grades
    - Teachers engage in expanding knowledge of STEM strategies by using computer science concepts in a face to face year-long workshop. Teachers use BeeBots (programmable robots) to develop expertise with coding. Teachers develop lesson plans, materials, and assessment techniques to use with students. Student data is collected by the teachers and analyzed with colleagues during the face to face workshops
- Teacher Leadership Cohort (TLC) – continuation
    - Teachers engage in a two-year program based on teacher leadership competencies. Teachers engage in workshops to learn the competencies and to develop action research plans. By developing and acting upon action research, teachers practice the competencies and self-assess their efficacy. A professional learning community model is practiced and teachers learn to give and receive highly effective feedback. Content includes but is not limited to: Reflective practice, personal effectiveness, interpersonal effectiveness, communication, continuing learning and education, group processes, adult learning, technological facility, coaching, resistance, research, and assessment, among others.
- National Board Certification (NBC)
    - Teachers meet throughout the year in a cohort model to learn the NBC process, work on submissions, receive feedback from facilitators and colleagues, as well as

provide feedback and support to other candidates. Teachers are responsible for practicing the NBC expectations in their classrooms and bringing student samples to share and analyze. Classroom observation, peer observation, and video analysis are included.

- NVACS Science training for three content areas: Life, Earth, and Physical
    - Physical science is the focus area for 2017-18. Teachers receive training in physical science standards, cross-cutting concepts, science and engineering practices, and disciplinary core ideas. Hands-on science will be practiced through three to five days of face to face workshops using FOSS standards-based materials. Teachers will have the opportunity to check out FOSS materials to use in the classroom. Student samples will be collected.
    - Supports for all areas of science standards are provided on an ongoing basis. Integrated opportunities will be provided as follow up in the 2018-19 school year

**Professional Development Standards Recommendations**

**Nevada State Board of Education Adopted 7/19/18**

**Recommendation 1(a):**

The Legislature should direct the State Board of Education (SBE) to adopt (either by regulation or policy) professional development standards to be used by all school districts and Regional Professional Development Programs (RPDPs).

**Recommendation 1(b):**

When adopting standards, the SBE should consider the nine standards below. These mirror the Seven Learning Forward Standards and include two additional standards, which have been adopted as is or with modifications by many other states. Two additional standards, Equity and Cultural Competency, are modeled after those adopted in California and Connecticut, respectively.

**Standard #1 (Learning Communities):**

Professional learning that increases educator effectiveness and results for all students occurs within learning communities committed to continuous improvement, collective responsibility, and goal alignment.

**Standard #2 (Leadership):**

Professional learning that increases educator effectiveness and results for all students requires skillful leaders who develop capacity, advocate, and create support systems for professional learning.

**Standard #3 (Resources):**

Professional learning that increases educator effectiveness and results for all students requires prioritizing, monitoring, and coordinating resources for educator learning.

**Standard #4 (Data):**

Professional learning that increases educator effectiveness and results for all students uses a variety of sources and types of student, educator, and system data to plan, assess, and evaluate professional learning.

**Standard #5 (Learning Designs):**

Professional learning that increases educator effectiveness and results for all students integrates theories, research, and models of human learning to achieve its intended outcomes.

**Standard #6 (Implementation):**

Professional learning that increases educator effectiveness and results for all students applies research on change and sustains support for implementation of professional learning for long-term change.

**Standard #7 (Outcomes):**

Professional learning that increases educator effectiveness and results for all students aligns its outcomes with educator performance and student curriculum standards.

**Standard #8 (Equity):**

Professional learning that increases educator effectiveness and results for all students focuses on equitable access, opportunities and outcomes with an emphasis on addressing achievement and opportunity disparities between student groups.

**Standard #9 (Cultural Competency):**

Professional learning that increases educator effectiveness and results for all students facilitates educator's self-examination of their awareness, knowledge, skills, and actions that pertain to culture and how they can develop culturally-responsive strategies to enrich educational experiences for all students.

## Part Two: Individual RPDP Information

391A.190 1c (11) *A description of the gifts and grants, if any, received by the governing body in the immediately preceding year and the gifts and grants, if any, received by the Statewide Council during the immediately preceding year on behalf of the regional training program. The description must include the manner in which the gifts and grants were expended.*

For the 2017-18 school year, NWRPDP was awarded Great Teaching and Leading Fund (GTLF) grant funds for the third year in a row. In the first round, $107,510.00 was granted in the area of Teacher Leader development and National Board Certification (NBC) that served a total of 127 teachers across the region. The Teacher Leader Cohort (TLC) program is a two-year program, so two cohorts were in progress simultaneously. Funds were used to provide books, subscriptions to research journals, training supplies, and substitutes for teachers to plan and develop action research projects. In addition, a national consultant in Culturally Responsive Teaching was engaged to provide a two-day workshop with follow up for participants as well as educators outside of the program. The NBC program also supported two cohorts running simultaneously. Funds were used to provide reimbursement to candidates who submitted one or two NBC components. Additionally, funds were dispensed for training supplies, books for participants, stipends for the readers and leaders of the cohorts to provide feedback and guidance, and travel for the NWRPDP leader/facilitator to attend the National NBC conference.

In the fall of 2017, a second round of GTLF funding came available and the NWRPDP was granted $225,576.50 in support of developing Teacher Leaders in social studies and in furthering teacher competency in science. With the release of the new social studies standards, there appeared a need to train teacher leaders in the field who would be able to serve as resources at school sites in the 2018-19 school year when implementation is expected. Approximately 475 teachers from across the NW region participated in a deeper dive with the new social studies standards. Funds supported training materials, substitutes for the teachers to attend training, stipends to teachers who developed curriculum and pacing guides, and standards documents were printed. The GTLF funds for science were particularly important because, though the previous two years of funding allowed for regional training in two major content areas of the new Nevada Academic Standards (NVACS) in science, Life Science and Earth Science, the third area, Physical Science, had not yet been addressed in a systematic fashion. The third round of GTLF funding made it possible to reach 135 teachers K-8 from across the region for training in Physical Science standards, materials, and content. Funds were used to support 3 to 5 days of substitutes for teachers to attend face to face training; FOSS kits in Physical Science were purchased to provide hands-on, high-quality, standards-based materials for checkout by teachers as well as access to online supports; and a middle school content expert from the University of Nevada, Reno, was engaged to provide targeted assistance to middle school teachers.

# Regional Projects: NWRPDP Case Studies

## Self-Evaluation Procedures

As outlined in NRS 391A.190, Director Kirsten Gleissner, Ph.D., directs the in-house evaluation, assisted by support staff who coordinate data collection and compilation. The Director and an outside consultant, Dr. Bill Evans from UNR, provide support for the rest of the team as they develop logic models, design instruments to gather and analyze data, and create, implement, and write their evaluative case studies. The case studies, based on the Killion (2002) staff development evaluation model, and aligned with recent teacher professional development frameworks (Desimone, 2009; Guskey, 2002), provide in-depth analysis of specific professional development projects, while showcasing the diversity and scope of the support provided by the NWRPDP to schools and educators in the region. These evaluation projects employ both qualitative and quantitative designs and incorporate mixed-methods data collection strategies to assess training outcomes. Collectively, they help to 'tell the story' and document the impacts of the diverse NWRPDP professional development activities this past year. An inclusive logic model depicting NWRPDP activities is shown in Figure 2. This conceptual model presents the overall professional development resources (inputs) and activities (outputs), and links them to the short, medium, and long-term outcome objectives of the NWRPDP.

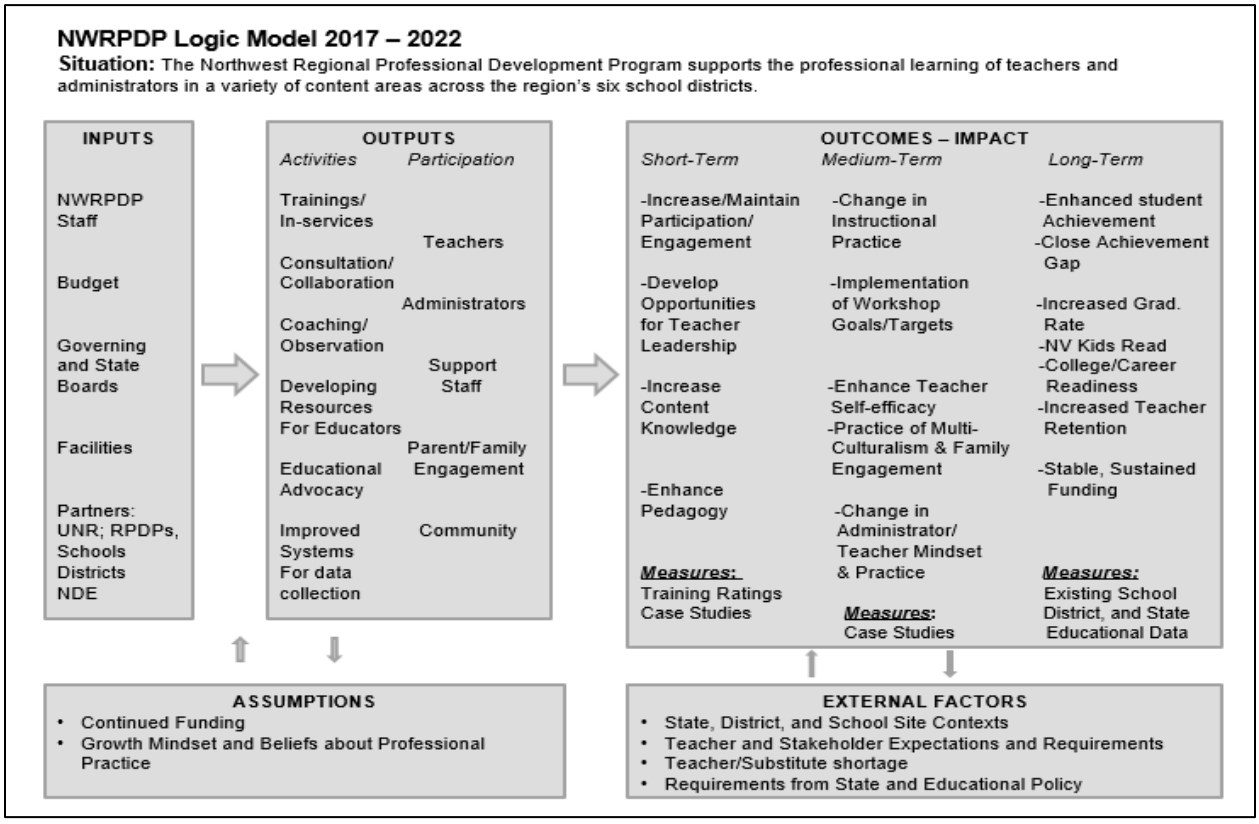


*Figure 2: NWRPDP Logic Model*

# Key Findings from 2017-18 NWRPDP Evaluation Activities:

- Professional development services were conducted in all six districts that comprise NWRPDP, reaching a total of 2,529 unique educators during 2017-18. Because professional development covers varied training topics and consulting services, and educators often attend multiple trainings, the total number of duplicated educators receiving services was 4,141. Elementary teachers (unique total served = 1,653) again were the largest educator group served this past year, followed by Middle school teachers (285), High school teachers (285), Others, which include substitutes, counselors and district personnel (210), and Administrators (96). Overall, 53% of the approximate 4,761educators employed in the region (as reported by each district) participated in programs provided by the NWRPDP during 2017-18.

- Case study evaluation data reveal a variety of positive outcomes across the 11 NWRPDP 2017-18 case study projects. Foci of case studies this past year were on writing development, teacher leader competencies, NVACSS trainings in STEM and Social Studies, and enhancing ARL candidate competencies in mathematics. Example results include significant increases in K-6$^{th}$ grade teacher knowledge and implementation of writing instruction (<.001); significant improvements in NVACS physical science knowledge, pedagogy, and student/family engagement strategies among teachers in four districts (<.001); significant increases in the implementation of NVACS social studies standards in the classrooms of participating teachers from rural and urban regional schools (<.01); significant gains among teacher participants in knowledge, teaching strategies, and ideas for parent and student engagement for NVACS computer science standards (<.001); significant increases among ARI candidate's conceptual knowledge of mathematics (<.001); and significant increases among administrators in the knowledge, implementation, and application of NEPF Teacher Instructional Standards (<.001).

- Participant ratings of the quality of professional development trainings performed by NWRPDP staff reveal consistent and very high satisfaction ratings over the past several years (all mean ratings of trainings are between 4 and 5, on a 5-point scale, and ratings in every category have increased each of the past three years). During 2017-18, this included high mean ratings from educator participants regarding the expertise of the facilitators and the quality of the delivery of instruction during trainings (4.87), particularly in providing opportunities for interaction and reflection (4.83). In addition, educator participants again indicated overwhelmingly that they will use the knowledge and skills learned from NWRPDP trainings in their classrooms (4.8).

- Results indicated that 79.5% of this past year's training participants had attended previous NWRPDP professional development activities, and of those, most indicated that their participation had markedly changed their teaching instruction or administrator responsibilities (4.40 mean on a 5-point scale, with 1 specifying 'Not at all' and 5 'To a great extent'). This was an increase from 2016-17, where the mean for this rating was 4.28.

- Professional services this past year were predominately delivered at school sites or professional learning sites in the form of in-service classes and workshops. Content focused mainly on the Nevada Academic Content Standards (NVACS) in the areas of Literacy/English, Mathematics, Science, Social Studies, and general STEM. The remaining areas of focus were diverse, and included training of the Nevada Educator Performace Framework (NEPF), Computer Science, PreK-Third Grade support, Computer Education and Tech, Leadership Development, and Parent/Family Engagement.

## The Case Study Model

Over several years, the NWRPDP has used the case study model to document its professional development activities. The NW regional program has as its practice an internal evaluation model, which incorporates case studies from projects throughout the region to document not only the diversity and wide-ranging impact of the work, but also, in some cases, to document the long-term effects of the support provided to teachers in the region. Evaluative case studies facilitate exploration of complex phenomena within their contexts—in this case, professional development (PD) within schools and districts--using a variety of data sources. This ensures that PD is not explored through one lens, but rather through a variety of lenses, which allows training effectiveness to be revealed and understood more fully (Desimone, 2009; Guskey, 2002; Killion, 2002; Yin, 2003). NWRPDP staff actively design and implement each evaluative case study that seeks to illustrate changes in teacher practice and student learning as a result of the diverse professional learning activities employed over the past year. Thus, the following case studies are focused evaluation investigations that incorporate mixed-method research designs to illustrate the breadth of training, variety of topics, and depth of consultation employed by NWRPDP staff over the past year. Each case study also has a logic model attached that was developed to guide the evaluation of the case study and illustrates the short, medium, and long-term outcomes expected from the professional development project.

# NWRPDP Case Studies

## Case Study 1: Improving Social Studies Teachers' Understanding and Effectiveness Teaching the New NVACS-SS

### Introduction

Beginning in the 2018-19 school year, social studies teachers throughout Nevada will be required to implement newly revised Nevada Academic Standards for Social Studies (NVACS-SS). These standards were approved by the standards board in the Fall of 2017 which has given district leaders a very short amount of time to train teachers and develop new curriculum materials to facilitate the implementation of these standards by August of 2018. The new NVACS-SS require social studies teachers to adapt their instructional practices to reflect inquiry learning, emphasize disciplinary skills, and include focus on new content areas including multicultural themes. These shifts represent significant changes for social studies teachers. Many will be required to dramatically modify their instructional practices and the content they teach at the same time. Teachers across northern Nevada expressed reticence and anxiety at the pace and amount of change. As a result, one of our northern Nevada school districts requested a strategic plan to familiarize teachers with the new standards, develop new scope & sequence documents and curriculum materials to support the implementation of these new standards for grades six through twelve. The goal of this case study was for participants to have an improved understanding of the new NVACS-SS and inquiry learning in order to create scope and sequence documents and align curriculum materials to the new standards. The guiding logic model developed for this case study can be found at the conclusion of the study.

### Instructional Context

NWRPDP and the Washoe County School District (WCSD) reached out to all social studies teachers in August of 2017 and invited anyone interested in joining the cohort to apply. All teachers who applied were accepted into the cohort and represented the majority of secondary schools in the district. The 29 participants in this group teach at 18 middle and high schools from the Washoe County School District. Demographics for students enrolled in the district demonstrate there is significant ethnic diversity and percentages of students in special populations including 16% English Learners, 14% IEP students, and 30% eligible for free and reduced lunch. However, demographics can be significantly different at various sites.

The schools represented in the cohort included four urban high schools, four suburban high schools, four urban middle schools, four suburban middle schools, and two urban elementary schools (K-6). Teachers representing a variety of social studies subjects participated including; American Government, World History, U.S. History, Sixth-Grade Social Studies, and a variety of Advanced Placement courses. Teachers had a wide range of classroom experience.

## Initial Data and Planning

In partnership with the district, a nine-month professional learning cohort for 6th-12th grade social studies teachers was developed. Two NWRPDP trainers collaborated with the district social studies coordinator, district literacy facilitator, a member of the district Student Learning Objective department, and a district Implementation Specialist to develop the learning model and process to guide the development of the scope and sequence documents. The cohort was designed around the seven core Standards for Professional Learning (Learning Forward, 2011). Over the course of the nine-months, formative assessments were implemented which allowed us to gather qualitative data to shift and modify the process as necessary. In addition to strategies and activities aimed at providing feedback that led to immediate shifts or changes, grade-level team leaders also met with the development team at the conclusion of each training day to guide planning and restructure the scope and sequence design process as needed.

## Delivery of Services

The 29 teachers were divided into grade-level teams. One team member was selected to serve as the grade-level team leader. Grade-level team leaders would be instrumental in facilitating the development of scope and sequence documents in their grade-level groups, communicating and disseminating information, and fielding questions regarding the process. Each of the grade-level team leaders met for preliminary training prior to a whole group training. During this preliminary meeting, the grade-level leaders were exposed to content related to increasing their understanding of inquiry learning and engaged in activities to explore and learn about the new standards. They then offered feedback to the development team regarding the trainings and processes for the rest of the whole group.

Training content for the first whole group meeting was designed to support understanding of the shift toward inquiry learning and changes in content within the new standards. During the subsequent four training days, participants worked collaboratively within their grade-level teams to build scope and sequence documents to serve as district-wide curriculum guides (Table 1).

**Table 1: Concepts and Strategies Modeled in Monthly Trainings**

| Month | Purpose |
|---|---|
| August: Grade-Level Lead Meeting | Understanding Standards & Inquiry Learning |
| September: Whole-Group | Understanding Standards & Unit Development |
| October: Whole-Group | Standards Alignment, Relevant Content |
| December: Whole-Group | Standards Alignment, Essential Questions |
| January: Grade-Level Team Meetings | Editing |
| February: Whole-Group | Essential Questions Editing & Resource Alignment |
| March: Whole-Group | SNOW DAY CANCELATION |
| May: Whole-Group | Inquiry |

**Results and Reflection**

At the final class in May, teachers completed a retrospective survey. Using a Lickert scale rating of 1 to 5, teachers assessed their knowledge and confidence before and after the cohort trainings on the following six questions; 1) structure of the NVACS-SS, 2) understanding of the Inquiry Arc and the Disciplinary Skills, 3) knowledge of the five content theme standards, 4) alignment of content theme standards to units of study, 5) alignment of resources to the new standards, 6) implementation of inquiry lessons in my classroom. Results indicate the average gains in the group's understanding of the new NVACS-SS and confidence aligning the standards to content and inquiry-based learning strategies. The results from the post-reflective assessment are displayed in Table 2. All areas showed increases in teachers' knowledge after attending the training. Paired samples *t*-tests showed that there were statistically significant gains in knowledge at the $p < .05$ level in understanding of the new Inquiry Arc and the Disciplinary Skills, alignment of content themes standards to units of study, alignment of resources to new standards, and implementation of inquiry lessons in their classrooms. Unfortunately, the final day of training was rescheduled due to a snow day cancelation and only 10 members could attend the make-up day. This low attendance greatly reduced the number of survey responses and therefore possibly impacted the data.

**Table 2. Pre- and Post-Training Results (Rating scale of 1 to 5 where 1 is Poor and 5 is Excellent)**

| Question | Pre-Training Average | Post-Training Average | Average Change | *t* score | *p* value |
|---|---|---|---|---|---|
| Structure of the new NVACS Standards in Social Studies. | 3.78 | 4.67 | +0.89 | 2.10 | .07 |
| Understanding of the Inquiry Arc and the Disciplinary Skills. | 2.89 | 4.44 | +1.56 | 3.78 | .01* |
| Knowledge of the five content theme standards. | 3.33 | 4.22 | +0.89 | 2.10 | .07 |
| Alignment of content theme standards to units of study. | 3.33 | 4.33 | +1.00 | 3.00 | .02* |
| Alignment of resources to the new standards. | 3.56 | 4.67 | +1.11 | 2.29 | .05* |
| Implementation of inquiry lessons in my classroom. | 2.56 | 4.44 | +1.89 | 4.15 | < .01* |

Note. $n = 9$.
*Indicates significant positive gains from the pre-training to the post-training at the $p < .05$ level.

Teachers were also encouraged to provide reflective comments on their participation in the cohort. Below are several of the comments in response to the following question: What did you like best about this year's training?

- Working with a diverse group of teachers to tackle awesome new standards.
- The exchange of ideas and materials with grade level colleagues.
- Working with colleagues across the district.
- Meaningful work.
- It was hands on with standards and resources.
- Having agency over constructing units.
- Collaboration and application.
- Basically everything!

Teachers also provided constructive feedback to improve the training. Several teachers indicated that they wished that we had been able to provide even more time to collaborate and have discussions around alignment of the standards. Two teachers mentioned the need to continue to find and vet more aligned resources for each of the units of study in some of the courses. As a result, the development team will consider extending the work of this group by offering continued learning and time to find, vet, and develop curriculum resources to address gaps in materials identified on the scope and sequence documents.

In addition to the retrospective survey, participants completed the standard NWRPDP end of training evaluation. Using a Lickert scale rating of 1 to 5, teachers evaluated the characteristics of the trainings (Table 3). Ratings revealed that teachers were positively impacted by the trainings and that the trainings provided valuable learning leading to improvement of teacher effectiveness.

**Table 3. NWRPDP Training Evaluation Averages. Scale 1 - 5. (1 = Not at all, 5 = To a great extent)**

| Characteristics of Activity | Average Rating |
|---|---|
| 1. The activity matched my needs. | 4.88 |
| 2. The activity provided opportunities for interactions and reflections. | 5.0 |
| 3. The presenter/facilitator's experience and expertise enhanced the quality of the activity. | 5.0 |
| 4. The presenter/facilitator efficiently managed time and pacing of activities. | 5.0 |
| 5. The presenter/facilitator modeled effective teaching strategies. | 5.0 |
| 6. This activity added to my knowledge of standards and/or subject matter content. | 4.66 |
| 7. The activity will improve my teaching skills. | 5.0 |
| 8. I will use the knowledge and skills from his activity in my classroom or professional duties. | 5.0 |
| 9. This activity will help me meet the needs of diverse student populations (e.g., gifted and talented, ELL, special ed., at-risk students). | 4.88 |

## Conclusion

It is imperative that all social studies teachers in the Washoe County School District have curriculum materials prepared and accessible to assist them in the implementation of the new NVACS-SS. Significant shifts in the scope of content and skills required by students to meet the standards will mean that teachers have to make many modifications to their current social studies curriculum. The intent of this training was to develop an opportunity for a small group of teachers to have time to examine the new standards and to develop appropriate curriculum materials to be provided to the entire district in order to increase student achievement in meeting the new NVACS-SS. This training provided valuable exposure and practice with the standards to allow participants to align them to their content and begin developing additional resources for classroom implementation. One participant indicated, "I have learned so much this year and have grown as a teacher in so many ways."

By creating a collaborative cohort, led by experienced trainers, teachers were able to explore and engage with the standards deeply. The group successfully produced new scope and sequence documents aligned to the new standards that include essential questions, relevant content, and disciplinary aligned resources for grades six through twelve. Work will continue into the next year as this cohort of teachers works to develop methods to train teachers throughout the district.

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**Case Study 1: ____Inquiry Design Fellow____ Logic Model**

**Situation:** Social studies teachers in the Washoe County School District need training on the new NVACS-SS to support the creation of new scope and sequence documents to guide implementation.

| Inputs | Outputs | | Outcomes -- Impact | | |
|---|---|---|---|---|---|
| | Activities | Participation | Short | Medium | Long |
| NWRPDP Trainer (2)<br><br>WCSD SS Curriculum Coordinator<br><br>WCSD SS Literacy Trainer<br><br>IDF Grade Level Teacher Leaders<br><br>Grade Level Teacher Groups<br><br>NVACS-SS (CCSS)<br><br>C3 Inquiry Arc<br><br>Budget<br><br>Access to facilities | Evaluate the major shifts in the standards(inquiry, DOK, scope of content)<br><br>Create new content scope and units that align vertically<br><br>Align new stan dards with new units by prioritizing standards<br><br>Determine significant content/concepts that align to the units of study<br><br>Design essential questions to guide unit development<br><br>Locate and vet materials as suggested resources to support units<br><br>Format new sco pe & sequence documents (peer review & feedback)<br><br>Determine a plan to share scope & sequence documents with all WCSD SS teachers.<br><br>Inquiry learning training | 31 members of the IDF<br>• Voluntary<br>• 3 elem. schools<br>• 8 middle schools<br>• 8 high schools<br>• 14 6th-8th teachers<br>• 18 10th – 12th teachers | Improved understanding of the new NVACS-SS and inquiry learning.<br><br>Improved ability to locate & identify additional resources to support inquiry learning.<br><br>Increased understanding of inquiry learning model.<br><br>Increased confidence aligning new standards to content and units of study may come after understanding.<br><br>Measures:<br>Training Ratings<br>Post-Reflective Survey | Creation of Scope & Sequence documents for secondary grades.<br><br>Plan to share scope & sequence with other WCSD teachers.<br><br>Development of units of study aligned to the new scope & sequence.<br><br>Improved inquiry instruction and aligned materials.<br><br>Measures:<br>Post-Reflective Survey<br>Lesson Rubric<br>NNCSS Conference Survey | Improved ACT scores that reflect increases in literacy/critical thinking.<br><br>Improved graduation rates that reflect increased student engagement.<br><br>Increase in civic engagement and taking informed action within communities.<br><br>Measures:<br>NV Report Card<br>ACT<br>Teacher Surveys |

**Assumptions**

Increased understanding of the new NVACS-SS will lead to increased confidence in aligning new standards with content. Since IDF members are voluntary, they will be more receptive to the shifts in the new standards.

**External Factors**

Limited district resources & materials for the implementation of new scope & sequence; Limited availability of inquiry focused materials/models; WCSD proposed timeline for the completion of documents.

# Case Study 2: Implementing *Being a Writer* School-Wide

## Introduction

Timothy Shanahan (2015) tells us there is much to be learned about writing that can only come from writing instruction and writing practice. He urges educators to make sure there is room in the literacy block for writing instruction. This case study describes how a school staff came together around the common goal of incorporating Writers Workshop at their school site. With the support of administration and funding from the Northwest Regional Development Program (NWRPDP), the staff was able to implement the *Being A Writer* a program. This program is recognized by The National Writing Project because it marries a writing process approach with guided instruction, providing a clear scope and sequence to assist students in learning important elements of writing at their grade level. Lessons also specifically address the Nevada Academic Content Standards. Not only does the curriculum emphasize the development of students as writers, it also embeds social-emotional learning into the lessons. This dual focus is based on two beliefs: that students' academic learning flourishes when social learning is integrated into the curriculum and that we are called on as educators to help students develop as whole people-academically and socially.

Two trainers partnered with a representative of the district's Student Learning Objectives (SLO) Department and a member of the English Language Learner (ELL), World Language department to develop a year-long plan of support. Initial training, grade level lesson study, ongoing coaching, and monthly-facilitated PLCs were offered resulting in a strong implementation and many positive outcomes. Though the project incorporated K-5 teachers, this case study focuses on the results in grades 2 and 3. The guiding logic model developed for this case study can be found at the conclusion of the case study.

## Instructional Context

Located in Washoe County School District, this elementary school serves mostly a middle to upper middle-class population of 571 students. Only 12% percent of the students are FRL eligible. The majority of students (62%) are white, 14% are Hispanic, 12% are Asian, and 9% are two or more races. A small percentage (6%) receive ELL services. Over the past few years the principal and staff have worked hard to increase the school's star rating from 3 stars to 5 with ELA proficiency currently at 75 percent. While the school has made gains, a gap in instruction was identified in the area of writing with little consistency in how instruction was delivered across grades. Although the staff received considerable training such as Guided Language Acquisition Design (GLAD) and Core Knowledge, they had not been trained in the use of a Writers Workshop curriculum. A total of 28 teachers participated in this professional learning opportunity.

## Initial Data and Planning

A primary goal for the principal centered on the need to strengthen the school's Professional Learning Communities (PLCs) in order to best implement *Being a Writer*. To address this goal, the trainers partnered with the Center for the Collaborative Classroom and Regional Educational Laboratory (REL West) to learn about their use of teacher "learning huddles". Trainers attended a summer institute where they participated in a learning huddle protocol. The learning huddles are thirty minutes long, guided by grade level team members with specific roles (facilitator, time-keeper, note-taker, process observer), focused on a topic, and grounded in reflecting on practice with evidence. The backbone of all the huddle protocols is the Plan-Do-Study-Act cycle, the core mechanism and sequence for improvement. In order to determine the topics that would become the focus of each learning huddle, REL West collaborated with the Center for the Collaborative Classroom (CCC) to identify the most common challenges to curriculum implementation in the first year of using the *Being a Writer* curriculum.

Trainers also planned for facilitating lesson study at each grade level. Lesson study involves examining a lesson to determine its primary goals and anticipate where students will excel and possibly struggle. While the lesson is being taught, teachers have an opportunity to watch for student learning and thinking. After the lesson study, a facilitated debrief is held to reflect on the objectives of the lesson. To prepare for this process, the trainers invited the Vice President of Collaborative Classroom to model a 3rd grade lesson study. Trainers then planned to replicate the process at the other grade levels.

## Delivery of Services

In August, each teacher received a grade level writing kit containing mentor texts, teacher manuals, assessments, and skill practice guides. Participants engaged in a full day of learning that started with grounding the group in research on best practices in teaching writing (Zemelman, Daniels & Hyde 2012). Trainers then modeled a lesson and provided an overview of the program's structure.

**Table 1. Being a Writer Units of Study**

| Grades K-2 | Grades 3-6 |
|---|---|
| The Writing Community | The Writing Community |
| Personal Narrative | The Writing Process |
| Fiction- Grade 2 | Personal Narrative |
| Expository Nonfiction | Fiction |
| Letter Writing-Grade 2 | Expository Nonfiction |
| Poems | Functional Writing |
| Opinion Writing | Opinion/Argumentative Writing |
| | Poetry |

Training also centered on the collaborative approach to writing instruction. Beginning with the first lessons, *Being a Writer* provides structures for teachers to set up purposeful interactions among students, teaching them social and problem-solving skills, and helping them to integrate values like responsibility, respect, fairness, caring, and helpfulness into their lives.

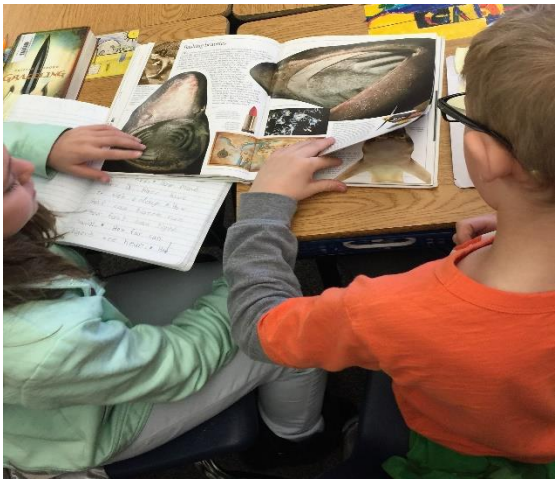

**Figure 1: This picture shows two students sitting side by side looking through a non-fiction picture book together.**

After receiving monthly trainings on the topic of conferring, grade level PLCs participated in two learning huddles. The design of the learning huddles is grounded in teacher leadership and agency. In January, they considered the topic of making time for conferring. In cross grade level PLCs, teachers shared writing samples in February and identified a teaching point for each sample. In March, grade level PLCs revisited the learning huddle with attention to the topic of facilitating writing conferences.

**Figure 2. This picture depicts a 2nd grade PLC examining writing samples.**

In order to further foster understanding of the program's design and to discuss implications for planning and instruction, each grade level was subbed out for a full day to participate in the lesson study process. Participants observed a lesson taught by one of the trainers, took focused notes on the instruction, and debriefed the experience. Participants reflected on the impact of the lesson study experience and on their own implementation of *Being a Writer*. They also engaged in future planning.

**Results and Reflection**

Nevada Revised Statute (NRS) 391 requires the use of student data as a component in determining educator effectiveness. WCSD has implemented Student Learning Objectives (SLOs) as a means for gathering class-level data. SLOs require teachers to be explicit about their instructional practice and tie it to student growth measures through the collaborative development of long-term student goals driven by data and grounded in standards-based instruction.

Second and third grade teachers (N=6) focused on writing instruction for their SLO implementation. A pre and post assessment from the program was administered to a total of 66 second graders and 58 third graders. A grade level specific rubric based on the target standards shown below was developed with support and coaching from the SLO Specialist:

- W.2.3: Student writes a narrative in which they recount a well-elaborated event or short sequence of events, include details to describe actions, thoughts, and feelings; use temporal words to signal event order, and provide a sense of closure.
- W.3.3b: Use dialogue and descriptions of actions, thoughts, and feelings to develop experiences and events or show the response of characters to situations.
- W.3.3c: Use temporal words and phrases to signal event order.

Rubric scores were translated to the WCSD 8-level scale used to report growth for students. The eight levels fall into the four State assessment categories as follow: Emerging (levels 1 and 2), Approaching (levels 3 and 4), Meets (levels 5 and 6), and Exceeds (levels 7 and 8). A pre-test in writing was administered to 66 second grade students. Of the 66 second graders, 35 scored at the Emergent level on the pre-test. After 6 weeks of instruction, 22 students from the original Emergent group scored at Meeting grade level expectations for the standards while 5 Exceeded standards.

**Table 2. Grade 2 Post-test Scores Emergent Group**

| Emergent (1,2) | Approaching (3,4) | Meeting (5,6) | Exceeding (7,8) |
|---|---|---|---|
| 1 | 7 | 22 | 5 |

The remaining 31 second graders scored at the Approaching level on the pre-test. The majority of these students (22) moved into the Exceeded standards category according to posttest scores.

**Table 3. Grade 2: Post-test Scores Approaching Group**

| Emergent (1,2) | Approaching (3,4) | Meeting (5,6) | Exceeding (7,8) |
|---|---|---|---|
| 0 | 0 | 9 | 22 |

In third grade, 56 students were administered a pre-test. Of the 56 third grade students, 55 scored at the Emergent level on the pre-test. The majority (43) Met or Exceeded standards on the post-test. Only one student scored in the Met standards category on the pre-test and moved to Exceeded on the post-test.

**Table 4. Grade 3 Post-test Scores Emergent Group**

| Emergent (1,2) | Approaching (3,4) | Meeting (5,6) | Exceeding (7,8) |
|---|---|---|---|
| 0 | 12 | 27 | 16 |

The trainers sought to know if these gains were statistically significant. Therefore, a Paired Samples *t*-test was conducted. Results from the pre- and post-assessments for 2nd and 3rd grade are displayed in Table 5. Paired Samples *t*-tests showed that there were statistically significant gains at the $p < .001$ level for both 2nd and 3rd grades, with an average increase in +3.73 points for 2nd grade and +4.22 points for 3rd grade.

**Table 5. Pre- and Post-Results (Rating scale of 1 to 8)**

| Grade Level | Pre-Average | Post-Average | Average Change | *t* score | *p* value |
|---|---|---|---|---|---|
| 2nd Grade | 2.30 | 6.03 | +3.73 | 28.56 | < .001* |
| 3rd Grade | 1.41 | 5.64 | +4.22 | 27.84 | < .001* |

Note. $n = 66$ for 2nd grade; $n = 58$ for 3rd grade.
*Indicates significant positive gains from the pre to the post at the $p < .001$ level.

Second grade teachers also set the goal of having students self-reflect in relation to speaking and listening standards:

- SL.2.1 Participate in in collaborative conversations with diverse partners about grade 2 topics and texts with peers and adults in small and larger groups.
- SL.2.1. A Follow agreed upon rules for discussions (e.g., gaining the floor in respectful ways, listening to others with care, speaking one at a time about the topics and texts under discussion).

In order to collect reflection information from students, the teachers developed and implemented the self-assessment pictured below. Students were asked to circle one of three emoji faces: sad, neutral, or smiling to represent their self rating of the following areas: speaking clearly, listening to others, and providing full attention to the person speaking.

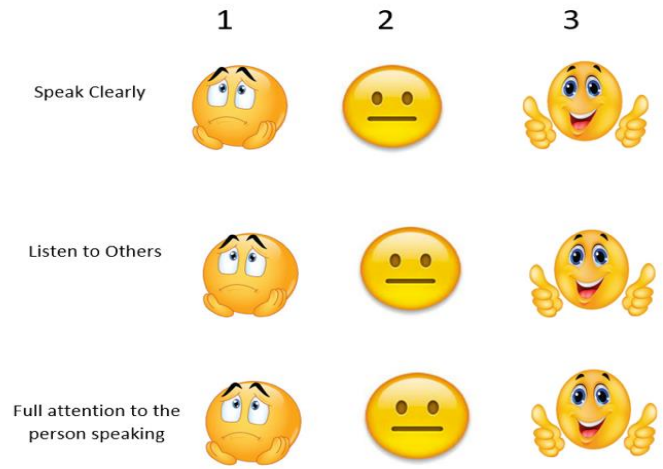


**Figure 3. Speaking and Listening Self-Assessment**

Though the facilitators did not collect information from teachers on this aspect of the project, teachers themselves reportedly used the information in planning and executing writing lessons in the classroom.

**Figure 4. This picture shows a teacher/student conference. The teacher is kneeling next to the student's desk.**

Teacher reflection data were collected throughout the year to gather feedback for the facilitators. In February, participants were asked to respond in writing to the following question: What are the positive results of your implementation of *Being a Writer*? A few teachers mentioned the PLC process as a positive: "Great ideas from other teachers," "Great ideas from my teammates to strengthen instruction." As shown below, the majority of comments related to student engagement.

Responses Related to Student Engagement:

- I have students who now love to write!
- The students enjoy writing time.
- My kids enjoy doing writing every single day!
- Students seem to have a better attitude toward writing.
- The children love the writing.
- Writing is fun! Kids love it.
- Students don't want to stop writing.
- High student engagement
- Students are enjoying working with partners.

Following each lesson study experience, participants were asked to respond in writing to the following question: What aspects of the lesson study experience were most helpful? The representative sample of reflections below validate that the time was well spent.

- Watching and debriefing is very powerful.
- I will try to be more mindful about the questions I ask to reflect the primary objective of the lesson.
- Analyzing the lesson was very powerful. Sometimes day to day teaching doesn't allow for true reflection.
- I truly enjoyed observing an entire lesson. It was nice to actually see how it all falls into place with the pacing.
- I saw the value of conferencing which now doesn't feel overwhelming.

In May, teachers completed a survey to reflect on overall successes and challenges in their implementation of *Being a Writer.* The most noted challenge was finding enough time in the day for writing instruction. Several participants remarked about their success in providing more teacher/student conferences. See a sample of additional comments below.

- It is very important to have a P.D. that spans the year for continued improvement.
- Kids are improving rapidly and excited by it!
- I have noticed my students writing more daily and with a purpose. There is always a focus each week, and my students love to write. They do not want writing time to end. It keeps them writing more.
- Some ELL students scored higher overall on ACCESS testing than the previous year.
- EL students are now performing at grade level.
- I have a lot of experience and success in teaching writing and I believe that Being a Writer incorporates the best aspects of all my learning from Lucy Calkins and Northern Nevada Writing Project. I have also enjoyed sharing writing pacing and genres with my grade level colleagues. I got some really good ideas and collaboration hints from my teaching peers.
- For me, I feel a lot has been released to students, and they provide great input for each other.

- I feel like the nonfiction writing was the most successful. The kids loved the mentor texts and the opportunity to really research something. I enjoyed reading their final reports. They were surprisingly good and in 3rd grade language, so I know they didn't just copy. I was delighted when they used transitional phrases correctly. There is something magical when you are reading 3rd grade writing and they throw in a "furthermore" in the right place.

## Conclusion:

Writing instruction should begin in the earliest grades and requires frequent, supportive practice (Nagin, 2012). *Being a Writer* provided a consistent writing curriculum for school-wide implementation based on the Writers Workshop model. Significant improvement in student writing was indicated through pre- and post-assessment. Additionally, it allowed teachers to build a community of writers steeped in rich literature and high-quality trade books and sparked both social and writing development. The facilitators look forward to the possibility of extending this work next year.

## References and Resources:


Center for the Collaborative Classroom (2017). https://www.collaborativeclassroom.org/

Nagin, C. (2012). *Because writing matters: Improving student writing in our schools*. John Wiley & Sons

National Writing Project (2015).*Being a writer: Curriculum to build a community of writers.* Retreived from https://www.nwp.org/cs/public/print/resource/4214.

Shanahan, T. (2015) *Why we need to teach reading and writing*. (http://www.shanahanonliteracy.com/blog). Retrieved from http://www.shanahanonliteracy.com/blog/why-we-need-to-teach-reading-and-writing#sthash.t0V09NoD.dpbs.

Zemelman, Daniels, Hyde (2012). *Best practice: Bringing standards to life in America's classrooms*, (4th ed.). Portsmouth, NH. Heinemann.

**Case Study 2: Being a Writer Implementation Logic Model**

**Situation:** K-5 Administrator selected writing as an instructional focus. The use of Being a Writer kits in site-wide implementation was suggested to support teachers and students at the site. This case study follows the first year of implementation of the writer's workshop model in K-5 classes with an emphasis on grades 2 and 3.

| Inputs | Outputs | | Outcomes -- Impact | | |
|---|---|---|---|---|---|
| | Activities | Participation | Short | Medium | Long |
| Resources:<br>Being a Writer Kit for each teacher<br>Binders/dividers<br>Individual writing journals<br>Substitutes<br><br>2 RPDP Facilitators:<br>One primary support<br>One intermediate support<br><br>Collaborative Partners:<br>SLO Specialist<br>ELL Program Consultant<br><br>Consultants:<br>West Ed<br>Collaborative Classroom<br>Site Administrator<br><br>School Site for Training | One Full Day Training (Fall)<br>Monthly facilitated PLC Meetings,<br>Grade Level Lesson Study<br>Learning Walks (Spring)<br><br>Writers Workshop Instruction weekly | 25 Site-Based Teachers<br><br>ELL Teacher<br><br>Resource Teacher | Increased knowledge of the writer's workshop model of instruction<br><br>Increased Writing Instruction<br><br>Measures:<br>Student Baseline Writing Survey | Increased use of WW Model<br>Mentor Texts<br>Silent Sustained Writing<br>Editing/Revision<br>Conferencing<br>Publishing Writing<br><br>Increased Confidence in Teaching Writing<br><br>Measures:<br>Teacher Reflection | Increase in Student Writing Across Disciplines<br><br>Increased Student Achievement in Writing<br><br>Measures:<br>End of Year Writing Sample<br>Student Writing Scores, from Smarter Balance |

**Assumptions** Direct instruction in writing will result in student writers having more writing skill. Teachers will incorporate writing instruction into their instructional day effectively with professional learning, practice and support.

**External Factors** Availability of substitutes, district initiative fatigue, student transiency, Advanced Academic Placement Classes separate students by achievement.

# Case Study 3: Writers Workshop Teacher Knowledge and Implementation

## Introduction

This case study focused on kindergarten to sixth grade teachers who participated in professional learning to implement the grade level *Units of Study in Opinion, Information, and Narrative Writing* by Lucy Calkins and her Teachers College colleagues. The focus was on teachers who attended Writers Workshop professional learning classes and who dedicated planning and instructional time to implementing the writers workshop model of teaching writing into their daily classroom lives. This write up is a celebration of that journey.

## Instructional Context

Until the next textbook adoption in Washoe County School District (WCSD), there is no district-wide Nevada Academic Content Standards (NVACS) aligned writing curriculum nor standard resources for the teaching of writing available for teachers. As a result, teachers and principals seek out professional learning that is standards aligned to support writing instruction in schools and classrooms. In response to that need, NWRPDP offered professional learning that included some resources to support teachers and students until the adoption of a writing curriculum. The guiding logic model developed for this case study can be found at the conclusion of the study.

The focus teachers for this case study attended a three-day Writers Workshop Institute designed to support teachers in implementing the Units of Study. The teachers teach grades K-6 across schools in Washoe County. There was variability in the amount of follow up that teachers received. The first group of teachers had no follow up after the initial three-day training (Group 1). The second group of teachers attended an additional in-service course focused on extending and deepening their understanding of the resources (Group 2). The third group of teachers had site-based professional learning and individual classroom coaching follow up (Group 3). There were seven teachers in Group 1, five teachers in Group 2, and six teachers in Group 3. There was a 30% return rate on the post reflective survey that was given four months after the initial three-day training.

## Initial Data and Planning

Since the 2015-16 school year, the trainer has worked with staff at four different schools to implement the writing Units of Study. At each site, teachers gave a pre on-demand writing assessment. The results indicated that most students were writing two to three grade levels below grade level writing according to the standards based rubric that was used to evaluate the writing. In addition, there were requests from individual teachers to provide more professional learning opportunities for the teaching of writing. Based on both teacher informal evaluation of student writing and the pre on-demand writing samples, multiple opportunities for professional learning for the teaching of writing were offered for the 2017-18 school year.

Because three groups of teachers with a variable level of follow up to the initial training naturally emerged, it was an opportunity to have teachers self-assess both their knowledge and implementation levels of Writers Workshop to see if there was a significant difference between them. This information would help teachers make decisions for the 2018-19 school year in the type and level of follow up to Writers Workshop professional learning. In November 2017, a post-reflective survey was sent to all 50 participants in the Three-Day Summer Institute asking them to evaluate their level of knowledge about the components of Writers Workshop and their level of implementation for the components of Writers Workshop. The purpose of the survey was to determine if there was growth in teacher perception about knowledge and implementation of Writers Workshop or if there might be differences in perception of growth among the groups.

## Delivery of Services

Each of the three groups of teachers had different amounts of professional learning and classroom coaching. Group 1 only attended the three-day Writers Workshop Summer Institute. Group 2 attended the three-day institute and attended a 15-hour follow up in-service course. Group 3 attended the three-day institute, participated in site-based professional learning follow up for 12 hours, and received at least at least two hours of follow up services.

The Three-Day Writers Workshop Summer Institute was offered for any teacher in the district including teachers at schools who were implementing the Units of Study and teachers at schools that did not have school-wide writing curriculum. The focus for the three days of learning was Writers Workshop essentials and getting ready to launch the workshop in classrooms.

The Year One Writers Workshop In-service course was also open to any teacher in the district who was implementing the writing Units of Study. It focused on the essentials of implementing the workshop model and extending understanding of each of the aspects of the model. The two hours of follow up services included model lessons, observation and feedback, and lesson plan consulting.

## Results and Reflection

The results of the post-reflective survey clearly indicated that all of the teachers felt that they had increased both their level of knowledge and level of implementation. (See Table 1: Knowledge and Implementation of Writers Workshop Survey.) Each Domain focused on an aspect of knowledge of the writer's workshop structure and level of implementation. There was a highly significant difference between the pre and post survey results for all groups of teachers. Teacher perception was that they learned not only the different aspects of Writers Workshop, but that they were also implementing them consistently. There was little to no difference between groups, so results are shown in the aggregate.

**Table 1. Knowledge and Implementation of Writers Workshop Survey**

| Domain | Pre | Post | *t* score | *p* value |
|---|---|---|---|---|
| **WWS structure** | 1.61 | 4.17 | 15.384 | < .001* |
| **Mini lesson structure** | 1.72 | 4.22 | 10.766 | < .001* |
| **Conference structure** | 1.44 | 3.89 | 13.231 | < .001* |
| **Small groups** | 1.67 | 3.94 | 12.852 | < .001* |
| **Structure followed** | 1.56 | 3.89 | 14.431 | < .001* |
| **Mini lesson has parts** | 1.72 | 4.06 | 10.204 | < .001* |
| **Conferring happens** | 1.39 | 3.72 | 12.907 | < .001* |
| **Small group** | 1.50 | 3.89 | 14.524 | < .001* |

*Indicates significant positive gains from the pre to the post at the $p < .001$ level.

## Conclusion

Teachers clearly felt as though the professional learning helped them to grow in knowledge of Writers Workshop and facilitated their implementation of the model. As can be seen in one of the teacher's survey reflection questions, "Writers Workshop class has provided me the necessary tools in creating a positive and supportive experience for my students. I now feel confident enough to teach the Units of Study in the classroom." In their reflections, teachers also focused on the value of peer support, feedback, and classroom follow up. The following quotes are typical of teacher feedback in situations where schools or grade levels have implemented the resources:

- My 1st grade team is great in supporting each other. What one person doesn't know or isn't sure of, another teacher may and we take from her.
- I like how we were broke into grade levels. Able to ask teachers questions who have already participated in the curriculum.
- Everything was really helpful, but the fact that we were able to look through the upcoming units together and get a plan in place was especially helpful to me.

Teachers also indicated the value of feedback and classroom follow up as can be seen in the following quotes:

- I was observed and it was very helpful.
- Diana, honestly you are great! You are very supportive, kind, and patient and have led us through each step of the Writer's Workshop process. I think just to be there for support and to help us "strugglers" as we continue to learn this and improve our own skills.
- What worked? Follow-up with teachers at our school with Walker throughout the year and classroom demonstration and observation.

Teachers who took the classes but did not receive classroom follow up indicated that they would like to have follow up and suggested it be included in further professional learning as can be seen in the following comments:

- I would love to have some coaching guidance to help me improve my conferencing and small group lessons.
- It would probably be good to do a brush up and some ongoing classroom visits next year as well.

Other teachers sought out additional support through suggested online groups. As one teacher wrote, “I enjoy the Facebook group. This allows me to check in with where others teachers are, as well as learn about successes and challenges that they have had.“

The teachers showcased in this case study dedicated time in the summer, after school, and during school hours to deeply learn about a set of comprehensive writing resources. They both learned and implemented high-quality content pedagogy. In addition, the teachers who had follow-up support valued it.

## References and Resources

Calkins, L. et al, (2014).The Units of Study for Writing in Opinion, Information, and Narrative Writing, Heinemann, Portsmouth, NH.

Anderson, Carl. (2000). how’s it going? A practical guide to conferring with student writers. Heinemann, Portsmouth, NH.

Cruz, Colleen. (2015). The Unstoppable Writing Teacher. Heinemann, Portsmouth, NH.

**Case Study 3: Writer's Workshop Logic Model**

**Situation:** A 3-day teaching of writing institute was provided for teachers who wanted to implement the Writers Workshop Model using the Lucy Calkins resources. Three groups of teachers attended the institute: teachers who took the course and had no formal professional learning follow up, teachers who would follow up with in-service courses, and teachers who were part of a school that was implementing the workshop model. The focus of this case study is to determine if there was a difference in level of implementation between the three groups of teachers.

| Inputs | Outputs | | Outcomes -- Impact | | |
|---|---|---|---|---|---|
| | Activities | Participation | Short | Medium | Long |
| Substitute Teachers<br><br>Facilitator/Coach<br><br>Writer's Workshop (WS) Resources (Units of Study, How's it Going?, One to One)<br>Sites for training | Writers Workshop 3 Day Institute<br><br>In-service Course<br><br>Site based professional learning<br><br>Observation/Feedback For in-service and school site teachers<br><br>WW time is scheduled 3-5 times a week. | K-6th Grade teachers<br>Group 1 – summer only<br>Group 2 – summer & in-service<br>Group 3-summer & school support | Increased Direct Writing Instruction<br><br>WW time is taught 3-5 times a week<br><br>Increased use of Resources<br><br>WS structure is used as a guideline to structure writing time<br>Mini-lessons begin each WS time<br>Teachers confer with students<br>Teachers work with small group based on predictable problems<br>Observation/Feedback is scheduled at least 2X's per teacher between PD sessions<br><br>**Measures:**<br>Teacher Post-reflective Survey<br>Observation/Coaching | Documented Increase in:<br><br>WS time is maintained 3-5X's per week<br>WS structure is fully used<br>Mini-lessons are 10-12 minutes consistently.<br>Mini-lessons include all parts.<br>Conferring architecture is used consistently in conferences<br>All students participate in conferences<br>Teachers work with small groups based on student writing needs<br>Observation/Feedback indicates teacher practice includes WS strategies<br><br>Increased positive attitude for PL<br>Observation/Feedback is positively viewed by teachers<br>**Measures:**<br>Student writing pre/post tests<br>Observation/Coaching | Increased student writing skills that can be applied in multiple contexts for multiple audiences<br><br>Increased student achievement in writing<br><br>Increased graduation rates<br><br>**Measures:**<br>Student writing<br>Smarter Balance<br>MAP |

**Assumptions:** Direct instruction in writing will result in student writers having more writing skill. Teachers will incorporate writing instruction into their instructional day effectively with professional learning, practice and support.

**External Factors:** multiple district initiatives including SLO's. Low district reading and writing scores.

# Case Study 4: Advanced Writing Cohort

## Introduction

The first and foremost objective of professional learning for teachers is to create college and career ready students who are successful thinkers, problem solvers, decision makers, and ultimately, lifelong readers and writers. In order to accomplish this goal, students need to be able to read and write effectively across different genres.

The primary goal of this study was to provide teachers the opportunity to improve reading and writing instruction by addressing real world text, mentor texts, and offering choice in reading. In addition, teachers participated in professional development that required them to look at grade level mentor texts and plan lessons that focus on the Nevada Academic Writing Standards. Best teaching practices were explored and implemented to meet the needs of students with varied reading levels, cultures, and linguistic backgrounds. Collaboration time emphasized modeled writing and mentor texts as well as preparation for state assessments in English Language Arts (ELA)/Literacy.

In addition to face-to-face instruction, teachers studied the books, *Disrupting Thinking* by Kylene Beers and Robert Probst, *Read, Write, Teach* by Linda Reif and *Awakening Brilliance in the Writer's Workshop* by Lisa Morris. The first half of the course (four sessions) focused on the urgency of teaching students to be critical readers and writers by exploring new strategies and ideas for creating engagement and relevance, encouraging both responsive and responsible reading, and developing lifelong literacy habits. The second half of the course examined the framework of Writer's Workshop and implementing practical mini-lessons and quick-writes during their literacy block. A common theme in both professional books is that reading and writing instruction needs to include more than teacher-created questions and short answer responses. The guiding logic model developed for this case study can be found at the conclusion of the study.

## Instructional Context

Teachers who participated in the case study were from Carson School District. Teaching experience ranged from first year teachers to veteran teachers. There were 9 certified teachers total who attended all sessions. Teachers came from a variety of grade levels and schools. There were eight elementary teachers and one middle school teacher (ELA and U.S. History). Most of the participants knew each other but came from different schools.

## Initial Data and Planning

The initial planning of the class came as a response to requests from previous workshop participants who came from schools with school-wide literacy goals. They took an interest/needs inventory and indicated need in several areas of writing, specifically narrative writing, quick-writes, writers' notebooks, and mini-lessons. Choosing mentor texts for writing was also an area of interest.

## Delivery of Services

Teachers participated in a 30-hour in-service class focused on student reading and writing through real world and mentor texts. Student artifacts also were discussed and reviewed. Connections were made to the Nevada Evaluation Performance Framework (NEPF) and parent engagement initiatives. Dates of service were: 9/12, 10/17, 11/7, 12/5, 1/9, 2/20, 3/6, 4/10, 5/18.

## Results and Reflection

Data were collected in the form of survey ratings and annotations. Participants were asked to provide feedback on the effectiveness of the training on a 1-5 scale. The teacher survey results in Table 1 indicate a high level of satisfaction with the effectiveness of the workshop. All areas had a 4.9 out of 5 rating.

**Table 1. Evaluation of the Effectiveness of the Training (1- Not Effective, 5- Very Effective)**

| | | |
|---|---|---|
| A. | Organization and preparation | 4.9 |
| B. | Style and Delivery | 4.9 |
| C. | Responsiveness to Participants | 4.9 |
| D. | Creating a Learning Environment | 4.9 |
| E. | Content of the Trainings | 4.9 |

Table 2 displays results from post-reflective feedback about specific learning around the Nevada Academic Reading Standards. The greatest areas of growth were shown in *developing and strengthening writing as needed by planning, revising, editing, rewriting, or trying a new approach* **and** *incorporating reading and writing into the District Instructional Units*. Questions were also asked about specific areas of writing and individual writing topics such as quick writes and the writing process.

**Table 2. Post-reflective Feedback (Participants rated their knowledge before and after based on a 1-5 scale.)**

| Question<br>NVACS in Writing (Standards) | Knowledge Before | Knowledge After | Change | *t* score | *p* value |
|---|---|---|---|---|---|
| **1.** Write narratives to develop real or imagined experiences or events using effective technique, well-chosen details, and well-structured event sequences. | 2 | 4.1 | +2.1 | 8.49 | <.001* |
| **2.** Produce clear and coherent writing in which the development, organization, and style are appropriate to task, purpose, and audience. | 2.4 | 4.1 | +1.7 | 12.10 | <.001* |
| **3.** Develop and strengthen writing as needed by planning, revising, editing, rewriting, or trying a new approach. | 2.2 | 4.4 | +2.2 | 10.00 | <.001* |
| **4.** Write routinely over extended time frames (time for research, reflection, and revision) and shorter time frames (a single sitting or a day or two) for a range of tasks, purposes, and audiences. | 1.8 | 3.9 | +2.1 | 8.10 | <.001* |
| **5.** Activities to support implementing curricula for NVACS in ELA Writing Standards. | 2.1 | 4.2 | +2.1 | 6.83 | <.001* |
| **6.** I feel confident in my **ability to** use mentor texts for writing instruction. | 2.0 | 4.1 | +2.1 | 10.54 | <.001* |
| **7.** I feel confident in my **ability to** model effective writing strategies. | 2.0 | 3.8 | +1.8 | 8.00 | <.001* |
| **8.** I feel confident in my **ability to** incorporate reading and writing into the District Instructional Units. | 2.0 | 4.2 | +2.2 | 10.00 | <.001* |

*Indicates significant positive gains from the pre to the post at the $p < .001$ level.

Qualitative data was also collected in the form of annotations. Additional questions allowed participants to give feedback:

***Which strategy, idea, example or practice helped you increase student understanding of narrative writing and writing and the writing process/workshop?***

- *I really enjoyed the quick writes. It was fun to write with my students and share with them my own writing. It showed them that we are all writers.*
- *I've not seen myself as a writer- especially of poetry. However; through the activities we have done, I have become more comfortable with writing and I feel that will help me to transform my ability to teach my students.*
- *I really enjoyed learning how to use infographics. The ideas and resources for teaching infographics and nonfiction helped me teach RI 3.1 and RI 3.7.*
- *I have enjoyed the texts that speak to things like timing--- How much time should be given to the mini-lesson in writer's workshop? Should read-alouds be done as a whole class, Yes? Why? Because they create a sense of community and things for students to discuss. I also liked the many additional resources that were shared like the websites and the TED talks. These will provide especially helpful options for my students who are visual learners.*

Additionally, he teachers were asked to rate each of the following statements on a Likert scale of 1= Very unlikely to 5= Very likely on the following statements and questions.

1. I intend to use the information from this training now and in the future within my classroom. 4.9
2. Do you feel this training was valuable to you? 4.9
3. Do you feel your students enjoyed and gained quality conceptual understanding from the strategies learned? 4.0

Responses on the survey indicate that teachers found the instructional and material valuable and that they intend to continue using the information with future instruction. Teachers wrote the following comments about the quality of the class:

- *There are things in a teacher's schedule that drain you and feel like wasted time. This training was the exact opposite. It always filled me with ideas and made me excited about implementing what I learned. The book talks activities have introduced me to a lot of new books and authors that I want to explore such as the Eve Bunting author study books.*
- *What I liked best about the trainings was being able to implement ideas with my students and then come back to class and share how things went.*

- *I always enjoy classes taught by this facilitator because you can see the passion she has for literacy. The activities and resources are fantastic!*
- *The trainer was marvelous as always and shared such great information. I will definitely use the information that I learned to improve my teaching practice.*

## Conclusion

It is evident from the data collected that learning and practicing writing strategies, exploring the idea of quick writes and writer's workshop, and selecting and discussing mentor texts through collaborating with others had a significant impact on teacher implementation. Teachers felt that strategies supported students' ability to successfully write routinely over extended time frames and to multiple audiences. Participants appreciated resources and time to work with their peers. Written responses indicated that teachers intended to use the information from the trainings within their classrooms and that students gained quality conceptual understanding from the strategies. Teachers requested further training in the areas of selecting mentor texts, creating more writing pieces to share and model for students, and time for planning and collaborating on their literacy blocks.

## References and Resources

Beers, K. and Probst, R. (2017). *Disrupting thinking: Why how we read matters.* NY: Scholastic.

Morris, L. (2012). *Awakening brilliance in the writer's workshop: Using notebooks, mentor texts, and the writing process.* NY: Eye on Education.

Reif, L. (2014). *Read, write, teach: Choice and challenge in the Readers-Writer's workshop.* NH: Heinemann.

**Case Study 4: Advanced Literacy Cohort Logic Model**

**Situation:** Advanced Literacy Cohort Carson City

Book study will focus on teaching informational text, considering literacy related reading issues, reading for purpose and with an appropriate stance, learning specific "close reading" techniques and teaching strategies.

| Inputs | Outputs | | Outcomes -- Impact | | |
|---|---|---|---|---|---|
| | Activities | Participation | Short | Medium | Long |
| • Notebook with Dividers<br>• Use of Padlet on-line forum for discussion<br>• *Disrupting Thinking* by Kylene Beers and Robert Probst<br>• *Read Write Think* by Linda Reif<br>• 32 hours of instructional time and $540 stipend | • Teachers discuss assigned text<br>• Teachers practice 1-2 strategies/ideas and 1-2 literacy/ engagement strategies during the collaboration<br>• Teachers brainstorm and have dialogue about implementation<br>• Teachers may opt to work with content area to plan implementation<br>• Teachers use content area text to develop lesson plans<br>• Assessment of Teacher Growth and Understanding | • Teachers Carson School District<br>• K-12 grade teachers and Implementation Specialists<br>• Librarians<br>• Substitute Teachers | Learning<br>• Increased Pedagogical Knowledge Emphasizing literacy and the connection between reading and writing<br>• Increased Teacher Confidence and Efficacy<br>Measures:<br>• Case Study<br>• Workshop Ratings | Action<br>• Increased use of Writers-Readers Workshop Practices<br>• Increased Teacher Collaboration/ Development of Mentor Text Lessons<br>• Phase 3 Case Study- creating instructional materials<br>Measures:<br>• Coaching<br>• Case Studies | • Increased Student Achievement in Writing and Reading.<br>• Increased Graduation rates<br>• Increased Teacher Retention<br>Measures:<br>• Existing Data |

**Assumptions:** Training will increase student achievement and be evident to the administration during the evaluation process; Continued Funding

**External Factors State, District, and Social Site:** Time and student ability; Administrator Expectations; State, District, and Social Site Contexts

# Case Study 5: Action Research for Teacher Leaders

## Introduction

Nevada's continued concerns regarding recruitment and retention of effective teachers was the impetus for this project. Research reveals that the mounting issues related to recruitment and retention has multiple contributing factors, such as insufficient pre-service programs, assessment and accountability concerns, and the lack of career lattice systems that support teacher growth. This concern is not just a "Nevada" issue, enrollment in pre-service teacher programs has dropped 10% nationally, over 50% in California, and state colleges in Nevada report a 30% decrease in College of Education pre-service programs (Sawchuck, 2014). A national conversation regarding re-professionalizing the teaching profession has launched a number of diverse efforts, including revisions of licensing requirements, extended internships, and career lattice options for Teacher Leadership (Thorpe, 2014). This project focused on impacting teachers' self-efficacy regarding the development of Teacher Leader competencies through the lens of action research. Teacher Leadership has been defined as educators that lead within and beyond the classroom, influencing others toward improved educational practice, and accepting responsibility for achieving the outcomes of their leadership (Katzenmeyer & Moller, 2001).

## Instructional Context

The professional learning featured in this case study is from the course Action Research for Teacher Leaders. Launched in August 2017, the 15 participants in this professional development opportunity represent a wide-array of diverse educational roles, including ten classroom teachers, two administrators, one teacher on special assignment, one resource teacher, and a counselor from one mid-sized school district. These diverse educators work in very different socio-economic contexts, ranging from 100% free and reduced lunch elementary and middle schools, to upper middle class high-performing middle and high schools. The diverse educational contexts of the participants offered opportunities for rich discussions with varied perspectives regarding resources, equity, social emotional learning, and collective educational capacities across the schools. The participants met once a month for nine months. Each meeting was 2.5 hours with the expectation that the cohort leaders would guide the group through a book study and support their design of site/district embedded action research projects. The participants were asked to design an action research project that would address an identified need within their school, district, or state. The course was designed to offer the resources and support necessary for capacity building and implementation of the action plans.

The curriculum for this class was initially designed to narrowly focus on the inquiry process of action research. Framed by the book *The Reflective Educator's Guide to Classroom Research: Learning to Teach and Teaching to Learn Through Practitioner Inquiry*, the course was developed in response to an identified need from educators who were interested in participating

in action research projects originally introduced through the NWRPDP *Teachers Leading Change* course, a two-year Teacher Leadership cohort initiated three years ago. The *Teachers Leading Change* cohort is a more exhaustive commitment and embeds significant practice regarding coaching, mentoring, resistance, observation, and feedback. The logic behind offering coursework for action research was to extend the structured learning outside of the *Teachers Leading Change* cohort for graduates and other experienced Teacher Leaders looking to extend their learning. The guiding logic model developed for this case study can be found at the conclusion of the study.

## Initial Data and Planning

A needs assessment was completed by NWRPDP in the fall of 2016. The results from this needs assessment indicated that there were not enough advanced professional learning opportunities for experienced Teacher Leaders. Respondents indicated that they would welcome opportunities to engage in professional learning designed to advance the collective capacity of individuals within the district who had already completed all Teacher Leadership professional learning and/or had already assumed roles where they were applying these professional concepts. A committee of leaders from across the district was formed to identify possible new offerings that would meet this need. The committee identified gaps within current professional development opportunities and four new professional learning courses were designed: Leading Collaborative Teams, Leading during a Culture of Change, Leading from the Classroom, and Action Research for Teacher Leaders. Along with these four new advanced courses, the curriculum of existing trainings was updated to reflect the Teacher Leader Competencies recommended by the Center for Teaching Quality, National Board for Professional Teaching Standards & National Education Association (2014), the framework used to guide this Teacher Leadership professional development.

The pre-assessments used for this case study were a Teacher Self-Efficacy Survey (TSES) from Tschannen-Moran & Woolfolk Hoy (2001); and a Teacher Leader Competencies (TLC) self-assessment from the Center for Teaching Quality (2014). The purpose of each tool was to collect data regarding teachers' perception of self-efficacy in the instructional setting as well as in the Teacher Leadership role. The results of the TSES were mixed, indicating that all participants saw themselves as efficacious instructional leaders; however, all the educators indicated that they did not feel empowered in the area of their current roles in terms of impacting others. In particular, their ability to engage parents in their children's learning ranked as the lowest overall score for all participants. The results from the TLC self-assessment were similar to other Teacher Leadership groups that have responded to this particular instrument. There were a few areas (reflective practice, communication, or continued learning) where all the teachers consistently indicated they were able to provide evidence of understanding. In the rest of the areas, teachers ranked themselves in the emerging category. In particular, participants identified group processes and adult learning as their lowest areas of competency. While the results were consistent with

other previous groups, they offered an interesting perspective for the course developers; that is, the participants all were assumed to be advanced Teacher Leaders, yet the data did not reflect that they perceived themselves as such.

## Delivery of Services

The initial class was designed as a "next step" for Teacher Leaders who had already engaged in professional learning around the Teacher Leader Competencies and were interested doing in additional action research with like-minded colleagues. While there were not specific 'pre-requisites' identified within the course description, it was framed as a course for individuals with advanced experience. What the facilitators found was that all of the participants inaccurately identified their competencies. This finding is relevant because the curriculum for the course was designed at a higher level, assuming basic understandings of coaching, resistance, and action research design. Due to this assumption, the entire curriculum needed to be redesigned. While the initial curriculum was essentially a book study of *The Reflective Educator's Guide to Classroom Research: Learning to Teach and Teaching to Learn Through Practitioner Inquiry (*Fitchman Dana & Yendol-Hoppey, 2014*),* the class turned into an abbreviated version of the two-year Teachers Leading Change cohort focusing more on resistance, coaching, and action research design than the action research itself. Recognizing the need for significant knowledge construction and extended application, the Teachers Leading Change cohort is designed for 90 hours versus the 15 hours this course offered.

The Fitchman Dana and Yendol-Hoppey (2014) text was retained from the original plan; however, the learning was largely supplemented with articles from various educational researchers that are used in the Teachers Leading Change cohort. This change caused some tension and frustration among the participants, resulting in a larger attrition of participants than average (the year ended with only six enrolled, much more than the average attrition rate of 10-12%). There were, however, positive outcomes from this experience: 1) Significant knowledge gained by the facilitators around supporting Teacher Leaders thrust into positions for which they are not prepared, 2) A steep learning curve embraced by those participants who chose to complete the course, and 3) A more comprehensive understanding of how classroom teachers struggle to assume leadership roles without the necessary competencies to navigate the nuanced relationships between colleagues.

## Results and Reflection

The results of this project were interesting when compared to Teachers Leading Change cohort participants at the end of their first year. Teachers Leading Change--Year One offers participants 45 hours of deep learning, and significant increases were found among teacher participants in perceived self-efficacy on the TSES ($t(18)=9.192$, $p<.001$). Findings from the action research participants were markedly different. Their pre-assessment scores on the TSES indicated that

78% of the participants perceived themselves as having high levels of efficacy. Their post-assessment dropped to 35% with only 43% of the teachers indicating they felt efficacious. It is important to note that the sample size was different in the pre and post- assessments (pre- 15 vs. post- 6); however, the results revealed an overall lack of awareness regarding efficacy prior to taking the class and a lack of acknowledgement that there was still a lot to learn. The qualitative responses collected also were very telling:

- This class has been so challenging, challenging because I learned so much, challenging because I didn't know I needed to learn so much, and most challenging because now I know I have SO much more to learn!- 4th grade teacher
- I learned a lot this year, I am excited to take the regular Teacher Leader class now, I thought I 'had it' so this year was really frustrating, but I am glad I stuck with it. – STEM coach
- I didn't know that action research was going to kick my butt so much! I am feeling invigorated about my project, and I can't believe how much I was able to actually get accomplished.- High School Dean of Students
- I fell in love with my topic, and actually seeing how it is making a difference with students in my school is awesome. – High School instructional coach
- I learned a lot about talking to adults, relationships, and my own abilities. Not saying I'm ready to do this full time, but I feel a lot more confident that I can talk to teachers about how we can improve their math instruction by working together! – 5th grade teacher

## Conclusion

The most impactful results of this work was validation for the structure and design of the Teachers Leading Change cohort. Recognizing that some people do not have enough time in their schedule to commit to a two-year program such as the Teachers Leading Change cohort, the facilitators have discussed adjusting the program to be only one year or comprising fewer overall hours. However, the action research class showed that to achieve the high-level Teacher Leader Cohort results on teachers' self-efficacy that have been demonstrated in the past, it is necessary to ensure fidelity to a proven model. A re-assessment of whether to offer the Action Research course again or not will now be undertaken. A similar approach could be considered, using the same book study strategy as before, but limiting enrollment to educators who have completed the Teachers Leading Change cohort, or who have some other prerequisite learning to ensure they are entering the class with the necessary content. In addition, an aspect of the course that might improve success would be to offer additional coaching and resources (access to databases, educational periodicals and magazines, or relevant educational research books) to enhance the research expectations of the course.

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**Case Study 5: Action Research for Teacher Leaders Logic Model**

**Situation:** Leadership Development (recruitment and retention): Provide professional learning in Teacher Leadership in order to develop sustainable leadership capacity for change and improvement in schools by retaining and supporting excellent teachers and education leaders.
Provide professional learning opportunities for teachers and other education leaders who are interested in Teacher Leadership, and seek a deeper understanding of the action research cycle.

| Inputs | Outputs | | Outcomes – Impact | | |
|---|---|---|---|---|---|
| | Activities | Participation | Short | Medium | Long |
| Staff<br>- Funding<br>- Partnerships<br>- Facilities | Action Research for Teacher Leaders Course<br><br>Design of Action Research for Teacher Leaders curriculum | Nevada K-12 teachers<br><br>Department of Professional Learning (WCSD)<br><br>Northwest Regional Professional Development Program<br><br>WCSD Curriculum and Instruction<br><br>Learning Forward Nevada | - Increased self-efficacy of Teacher Leaders.<br>- Enhanced understanding of the roles and hybrid opportunities for Teacher Leadership inside and outside of the classroom.<br>- Enriched understanding of action research cycle<br>- Increased knowledge of the Teacher Leader Competencies and how they frame Teacher Leadership, roles, and dispositions in Nevada.<br><br>These competencies include 60 hours of learning and practical application in:<br>- Group Processes<br>- Personal Effectiveness<br>- Interpersonal Effectiveness<br>- Communication<br>- Adult learning<br>- Continuing learning and education<br>- Technological facility<br>- Reflective practice | - Increase the use of embedded action research designed to impact teaching and learning.<br>- Develop an infrastructure of Teacher Leaders within each school that enhances a sustainable system of growth and development impacting teaching and learning.<br>- Increase the number of Teacher Leaders in coaching, mentoring, and support roles that have engaged in learning on the Teacher Leader Competencies in Nevada.<br>- Increase the curriculum design and support for Read by Three Learning Strategists in Nevada. | -Develop a statewide Network of Teacher Leaders with enhanced professional capacity to supports teaching and learning for students and colleagues.<br><br>-Increase the statewide alignment of Teacher Leadership curriculum with the Teacher Leader Competencies, roles, and dispositions of Teacher Leaders.<br><br>- Create sustainable infrastructure that increases collaborative discourse about leadership, instruction, and best practices in Nevada.<br><br>- Create a Network of Teacher Leaders across Nevada that enhances advocacy work of teachers to uplift teaching and learning. |

**Assumptions:** This project is a highly collaborative effort between NWRPDP, C&I, DPL, and PGS. If any of those partnerships were to be withdrawn this project may be difficult to implement. It is assumed that all partnerships will continue. This project was heavily funded by grant funds received from GTLF in 2016. There is an assumption that there will be continued support at the state level to continue growing Teacher Leadership work.

**External Factors:** Funding, support, participation/interes

# Case Study 6: Hands-on Physical Science

## Introduction

Introducing and training on the Nevada Academic Content Standards for Science (NVACSS) are of great importance for Nevada teachers. The updated standards are based on the Next Generation Science Standards (NGSS) that the State of Nevada adopted in May of 2014. At that time, teachers took a survey regarding the standards that revealed they understood very little about how to interpret the new standards. Based on this need for understanding, the NWRPDP PreK-12 Science trainer worked together with regional staff to research, author, and submit a request for a third year of funding through the Great Teaching and Learning Fund (GTLF) grant to support K-8 teachers in the Northwest Region of Nevada. The GTLF supported science training for the Northwest region's teachers in 2015-16 in Life Science and in 2016-17 in Earth Science. In November 2017, the GTLF again provided support with a third round of funding for teacher training in Physical Science. With the grant's acceptance, the NWRPDP facilitator worked to design, prepare, and implement grade-level specific trainings for one cohort. The cohort, seven grade-level specific groups, received three to five full days of instruction (Grades K-2 three days, grades 3-5 four days, and grade 8 five days). The Cohort received their training December 2017 through May 2018.

The goal of the trainings was to provide teachers with the training and support required to engage students in quality science instruction that incorporate the NVACSS based on the NGSS. Teachers gained an understanding of what science education is in Physical Science and how they could utilize it in their classrooms. The guiding logic model developed for this case study can be found at the conclusion of the study.

## Instructional Context

Nevada's Northwest Regional Professional Development Program (NWRPDP) serves six Northern Nevada counties: Carson, Churchill, Douglas, Lyon, Storey, and Washoe. NWRPDP provides support with implementing the NVACSS for teachers in the Northwest region of Nevada.

The participants from each county served were: 2 Churchill, 8 Lyon, 3 Storey, 122 Washoe (total participants 135). Of the participants, 124 were K - 5 teachers and 11 were middle school teachers. Experience level of teacher participants ranged from first year novice to veterans with more than 20-years of experience.

The Nevada State Legislature mandated by its adoption of the NVACSS in 2014, and Nevada law requiring adopted standards to be implemented in schools within two years, that teachers receive the professional development necessary to implement the standards in their classrooms. Funding from state grants such as the GTLF grant is intended to help meet this mandate.

## Initial Data and Planning

At the conclusion of 2017 trainings, participants where asked if they would like further training on the NVACSS in the content area of Physical Science. Almost all of the participants indicated that they would be very interested in additional training the following year in the NVACSS Physical Science content area. From this information, the NWRPDP K-12 Science trainer submitted the GTLF grant proposal to train 135 teachers in the NVACCS Physical Science disciplinary core area for the 2017-18 school year.

The grant plan was designed to train 1 cohort of 135 teachers. The cohort consisted of 17 Kindergarten teachers, 24 first grade teachers, 39 second grade teachers, 11 third grade teachers, 20 fourth grade teachers, 13 fifth grade teachers, 11 eighth grade teachers. The trainings took place December 2017 through May 2018.

## Delivery of Services

Each grade level received instruction that consisted of training for the implementation of the NVACSS/NGSS in the domain of Physical Science for their specific grade level. Each grade level received 3 to 5 days of training (grades K-2 three days, grades 3-5 four days, and grade 8 five days) that included a history of how the NVACSS were developed to provide a basic understanding of how the standards are intended to be implemented in the classroom. The 3 dimensions of the standards were also addressed: Science and Engineering Practices, Cross-cutting Concepts, and Disciplinary Core Ideas (DCI).

Participating teachers received access to resources such as science equipment and an online component that includes curriculum aligned to the standards, notebooking, assessments, video collections, fiction and nonfiction literature, and other English language arts and mathematics supports.

## Results and Reflection

A post-reflective survey was administered to the teachers at the conclusion of each class cycle. The first part of the survey dealt with the effectiveness of training. Participants rated aspects of the training on a scale of 1 to 5 where 1 was Not Effective and 5 was Very Effective. Participants rated this training very high, averages falling between 4.73 and 4.89. The highest score was in regards to the content of the training. The results of the Post Evaluation are listed below.

- Organization and preparation = 4.82
- Style and delivery = 4.73
- Responsiveness to participate = 4.88
- Creating a learning environment = 4.87
- Content of the training = 4.89

The second part of the post-reflective survey was based on self-perceived growth in the content of the classes. Teachers rated themselves on their level of understanding before and after the training. The highest areas of gain were in 1) Activities to implement in support of curricula for NVACSS Physical science, and 2) Ideas for parent and family engagement in curriculum and teaching practice that involves the NVACSS in Physical science. A *t*-test for significance was performed on the data and all areas of gain were significant $p < .001$ level.

**Table 1. Post-reflective Survey Results (1 to 5 where 1 is Poor and 5 is Excellent)**

| | **Mean before** | **Mean after** | **Gain** | ***t*-score** | ***p* value** |
|---|---|---|---|---|---|
| NVACSS in Physical science | 2.58 | 4.37 | 1.79 | 22.98 | < .001* |
| How to structure activities/pedagogy and engage students with the NVACSS in Physical science | 2.56 | 4.55 | 1.99 | 22.56 | < .001* |
| Ideas for parent and family engagement in curriculum and teaching practice that involves the NVACSS in Physical science | 2.32 | 4.40 | 2.08 | 21.92 | < .001* |
| Ideas for student engagement with the NVACSS in Physical science | 2.59 | 4.63 | 2.04 | 22.74 | < .001* |
| Activities to implement in support of curricula for NVACSS Physical science | 2.54 | 4.63 | 2.09 | 24.63 | < .001* |
| Positive guidance and discipline techniques in the classroom | 3.26 | 4.58 | 1.32 | 13.19 | < .001* |
| Teaching strategies that are aligned to and assess the NVACSS Physical science | 2.65 | 4.57 | 1.92 | 22.91 | < .001* |

* All pre to post evaluation questions (above table) revealed positive gains and were significant at the $p < .001$ level.

Additionally, participants were asked to respond to the following questions on a scale of 1 to 5 to gauge future use and value of the training. Teachers indicated a high commitment to future use

(4.93) and noticed high-quality learning on the part of their students (4.90). Ninety-nine percent of teachers were interested in additional training in science. Approximately 4,418 students were reached by the teachers.

**Participant Quantitative Mean Responses (Scale 1 to 5, where 1 = least and 5 = most)**

- I intend to use the information from this training in the future within my classroom = 4.93
- Do you feel this training was valuable for you? = 4.87
- Do you feel your students enjoyed and learned quality NVACSS Physical science from using the FOSSNG kits? = 4.90
- Would you be interested in participating in additional professional development trainings and workshops? 99% yes
- Collectively teachers reported that approximately 4,418 students would potentially be affected by this training across the region.

## Conclusion

Having the opportunity to offer a grade level specific program that provided all participating teachers the materials and resources required to implement the new NVACSS in the DCI area of Physical Science, along with follow-up support sessions, was critical to the overall success of this project. The main goal of the GTLF grant was to increase teacher knowledge of the standards and to facilitate the successful implementation of the NVACSS in classrooms. The data and teacher reflections indicate that this goal was met.

**Examples of final comments from participating teachers:**

- Loved the interaction among teachers and the facilitator / updates re FOSS & NGSS
- Great resources
- Liked all the community speakers and talking with other teachers
- Liked interacting with peers and learning how they implement
- Liked the opportunity to experience ways to approach the curriculum and work time
- Thanks for all the support!
- Loved the hands on and collaboration
- Liked working through the activities to explore discussions and avoid pitfalls
- It's awesome!
- Awesome content & 100% relevant!
- Liked the use of online portion and FOSSmap
- Very informative – provides good foundations in FOSS
- Excellent training! Really enjoyed this experience! Thank You
- Extremely worthwhile – so excited to teach this
- Thank you for helping teachers teach science. ☺ **
- Loved it! Thank You!
- Very valuable. My students will get a better education because of this training.

- Great way to structure teacher learning for Science! Having explored with materials in the class, made implementing in my classroom much less Stressful! Thank you!
- These trainings really are one in a million! Thank you for everything. ☺

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How Science Works chart
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**Case Study 6: __Hands-on Physical Science__ Logic Model**

**Situation:** Great Teaching and Leader Fund Grant implementation (GTLF) Physical Science NVACSS/NGSS Grades K – 8

| Inputs | Outputs | | Outcomes -- Impact | | |
|---|---|---|---|---|---|
| | Activities | Participation | Short | Medium | Long |
| Nevada Academic Content Standards in Science (NVACSS) based on the Next Generation Science Standards (NGSS) in the Disciplinary Core Area of Physical Science through the use of Full Option Science Systems Next Generation (FOSSNG) kits Curriculum | Teachers will be guided through the format and background of ***A Framework For K-12 Science Education*** and the NVACSS based on the NGSS<br><br>Teachers will have guided time to prepare science lessons utilizing the provided resources (FOSSNG kits) from the grant<br><br>Introduce teachers to the intent of how and why the NVACSS/NGSS were designed from ***A Framework For K-12 Science Education*** and how to implement them in their classrooms<br><br>Introduce teachers to FOSSNG Physical Science kits curriculum that address the NVACSS | 15 teachers in each of grades Kindergarten – 5th & 10 in 8th (100 teachers) from the NW region of Nevada (Carson, Churchill, Douglas, Lyon, Story, & Washoe Counties) will be trained in the Winter/Spring 2018. Grades K-3 have three sub-out days Feb – June, grades 4, 5 have four sub-out days Feb – June, and grade 8 has five sub-out days Feb – May, 2018 for trainings.<br><br>Teachers participation in discussion and activities based on NVACSS/NGSS | Increase teacher's knowledge of NVACSS/NGSS<br><br>Improve teacher's attitudes toward NVACSS/NGSS instruction<br><br>Increase teacher's access to science resources (FOSSNG kits) curriculum that address the NVACSS/NGSS<br><br>Increase teacher's ability to integrate science instruction into their daily curriculum<br><br>**Measure:**<br>Pre/Post Survey | Increase use of FOSSNG kits that incorporate NVACSS/NGSS in the classroom<br><br>Increase teacher networking resources that promote collaboration in the area of science education<br><br>Increase use of NVACSS/NGSS lessons in classrooms using FOSSNG kits curriculum throughout our region of the state<br><br>**Measure:**<br>Pre/Post Survey | Improve educational, social, economic, civil, and environmental conditions globally<br><br>Increase teacher retention by improving their outlook on the importance and value of science education, providing access to the materials (FOSSNG kits) required to address the NVACSS/NGSS.<br><br>Increase the number of scientifically literate students<br><br>**Measures:**<br>State Science Assessment<br><br>Nevada Report Card Science<br><br>Post HS Science Fields |

**Assumptions:** Continued funding for FOSSNG kits and positive attitudes and beliefs about teaching NVACSS/NGSS

**External Factors:** State, District and school site decisions. Time allowed for NVACSS/NGSS instruction in classrooms, and resources available to teach NVACSS/NGSS

# Case Study 7: Bee-Bots for STEM Learning

## Introduction

Nevada Governor Brian Sandoval in a 2016 speech stated:

> STEM will provide a platform for our students to learn more about the pathways to the most exciting careers in the new Nevada economy. The jobs that will be available when our students graduate from college may not even exist right now, but a strong grasp of core STEM concepts will best prepare them today for the exciting industries of tomorrow. (Nevada Department of Education, 2016)

Steve Jobs, co-founder of Apple Computers famously asserted, "Everybody in the world should learn how to program a computer, should learn a computer language, because it teaches you how to think" (Rosoff, 2011). The NWRPDP Bee-Bot Cadre was created to support teachers and students by providing STEM and computer science opportunities. The NWRPDP facilitator designed, prepared, and facilitated training for 24 Kindergarten, first, and second grade teachers, a school administrator, and an informal educator in utilizing Bee-Bot robots in their classrooms with students. The cadre classes began in November of 2017 and culminated in May of 2018.

The goal of the trainings was to provide teachers with professional development and resources that lead to school-wide shifts in instructional practice in STEM with an emphasis on computer science content by increasing teachers' content knowledge and pedagogical skills through hands-on learning important to STEM technologies for our state.

## Instructional Context

Nevada's Northwest Regional Professional Development Program (NWRPDP) serves six Northern Nevada counties: Carson, Churchill, Douglas, Lyon, Storey, and Washoe. NWRPDP provides support with implementing the Nevada Academic Content Standards in Science (NVACSS) for teachers in the Northwest region of Nevada. Based on information from a pre-survey, participating teachers lacked the training, materials, and expertise in computer programming and Bee-Bot robots to implement the NVACSS in STEM without intervention from specialists.

The participants from each county served were: 3 Churchill, 2 Lyon, 19 Washoe. Of the participants 10 were Kindergarten teachers, 6 were First grade teachers, 6 were second grade teachers, 1 was a school administrator, and 1 was an informal educator (total participants 24). Experience level of teacher participants ranged from first year novice, to more than 20 year veterans.

The Nevada State Legislature mandated by its adoption of the NVACSS in 2014, and Nevada law by requiring adopted standards to be implemented in schools within two years, that teachers

receive the professional development necessary to implement NVACSS in their classrooms. Funding of Nevada's Regional Professional Development Programs is intended to help meet this mandate.

## Initial Data and Planning

Participants were administered a 7-question survey with a 5-point scale where 1 reported a lack of knowledge about computer programming, utilizing Bee-Bots in the classroom, and access to the materials necessary to implement a learning program in those areas. The Pre-survey data scores, between 1.2 and 1.5 out of 5, indicated the need for this professional development.

The NWRPDP STEM Learning facilitator provided a year-long class designed to train Kindergarten through second grade teachers in the region in computer programming utilizing Bee-Bot programmable robots. The guiding logic model developed for this case study can be found at the conclusion of the study.

Teachers were chosen for the cadre by application with preference given to schools with more than one participant so resources could be shared efficiently, more teachers could be trained, and more students included. A total of 9 Bee-Bot "Hives" (6 Bee-Bots per hive) were purchased for the cadre. Each participating school received one hive to share for the school year at their site. Bee-Bots are small programmable robots, resembling bees, designed for use by Preschool through 2$^{nd}$ grade children.

Each school was provided a digital camera to record photos and video of students using the Bee-Bots in their classrooms. These photos were then uploaded to a photo-sharing web site so teachers would have access to them during and after the cadre sessions. Additionally, a wiki web page of Bee-Bot resources and lessons was set up by the RPDP STEM Facilitator with ongoing input from the participating teachers. The website can be accessed at: http://nwrpdp.org/beebot

Participating teachers received 17 hours of instruction and practice in using Bee-Bots and preparing materials for classroom use. Cadre classes included ample time to share ideas and discuss progress, problem-solving issues as they arose. In addition, various sizes of poster size card stock, clear plastic sheeting, markers, meter sticks, and other materials were provided for teachers to make their own Bee-Bot mats used to integrate, math, language arts, social studies, art, and other subjects into computer programming with Bee-Bots.

## Delivery of Services

The NWRPDP trainer facilitated seven 2.5-hour evening sessions as well as multiple classroom visits to mentor teachers and to observe classroom Bee-Bot use. In addition, support was provided through email and phone conversations as needed, and, in some cases, delivery of

material to school sites. Instruction began in November 2017 and ended in May 2018. Classroom visits began in December 2017 and continued through May 2018.

## Results and Reflection

The results from three sets of data are displayed below: results from the Pre/Post Survey, Student Data, and the Program Activity Evaluation. First, the Pre/Post Survey (Table 1) revealed an overall substantial increase in all areas evaluated by the survey. Teachers reported the highest gains in creating materials for use with Beebots (3.4 points gain) and using Beebots with students (3.3 points gain).

**Table 1. Bee-Bot Pre/Post Survey**

Please rate your knowledge of the following topics before attending the Bee-Bot Cadre trainings and follow-ups and after attending using a 1 – 5 scale (1 = Poor, 5 = Excellent)

| Question | Pre | Post | Gain |
|---|---|---|---|
| 1. I feel comfortable in my general knowledge of Bee-Bots. | 1.5 | 4.4 | 2.9 |
| 2. I feel comfortable with my knowledge of using Bee-Bots with my students to promote and learn problem solving strategies. | 1.4 | 4.3 | 2.9 |
| 3. I feel comfortable with my knowledge of using Bee-Bots with my students to promote, learn and practice computer programming / coding. | 1.4 | 4.3 | 2.9 |
| 4. I feel comfortable integrating Bee-Bots in language arts and/or m and/or other curriculum areas. | 1.2 | 3.8 | 2.6 |
| 5. I feel comfortable in my knowledge of making Bee-Bot mats for student use. | 1.2 | 4.6 | 3.4 |
| 6. I feel comfortable in my knowledge of using Bee-Bot mats with students. | 1.2 | 4.5 | 3.3 |
| 7. I have the materials / resources, or access to them, necessary to implement Bee-Bots in my classroom. | 1.3 | 4.1 | 2.8 |

**Student Data**

Teachers collected data on student progress in learning programming skills. Five mazes, progressively more difficult in length and directional changes, were developed and agreed on by the members of the cadre. Participating teachers chose 2 to 3 students in their class to monitor each month on progress in the number of steps (lines of code) they could program through a maze. In addition, the difficulty of the maze and whether students could program the robot concretely were tracked. Teachers observed students moving the robot through the maze by hand as they concretely programmed each step, returned to the start of the maze and pushed "Go," having the robot successfully travel the maze with no mistakes. Students were also observed being able to input the entire program more abstractly, visually from the start position, without moving the robot by hand, and then being able to push "Go," having the robot successfully travel the maze with no mistakes. The Student Data indicates growth in lines of code written (Table 2), with students moving from thinking concretely to abstractly, while programming and difficulty of the maze increased (Table 3).

**Table 2.** Number of Steps Increases by Grade Level

| Number of Steps (Lines of Code) Average by Grade Level | Initial Attempt | Last Attempt |
|---|---|---|
| Kindergarten | 8.1 | 13.8 |
| First Grade | 11.5 | 19.8 |
| Second Grade | 11.3 | 24.1 |

**Table 3.** Increases in Students Showing Abstract Thinking

| Number of Students Working Concretely Versus Abstractly Initially and by Last Attempt | Concrete/Abstract | Concrete/Abstract |
|---|---|---|
| Kindergarten (18 Total Students) | 10 / 8 | 6 / 12 |
| First Grade (15 Total Students) | 10 / 5 | 8 / 7 |
| Second Grade (6 Total Students) | 4 / 2 | 2 / 4 |

Tables 4 and 5 represent the initial and last attempts of students to create programs that would allow the Beebots to successfully complete the mazes. Observationally, Kindergartners had more unsuccessful attempts initially. Almost all students observed in this study were able to successfully complete the mazes and the mazes successfully completed were more complex.

**Table 4.** Initial Attempt of Maze Completion by Grade (Scale of 1 = Easiest and 5 = Most Difficult)

| Initial Attempt | Unsuccessful | 1 | 2 | 3 | 4 | 5 |
|---|---|---|---|---|---|---|
| Kindergarten | 6 | 8 | 3 | 1 | 0 | 0 |
| First Grade | 2 | 3 | 6 | 4 | 0 | 0 |
| Second Grade | 2 | 3 | 0 | 0 | 0 | 1 |

**Table 5.** Last Attempt of Maze Completion by Grade (Scale of 1 = Easiest and 5 = Most Difficult)

| Last Attempt | Unsuccessful | 1 | 2 | 3 | 4 | 5 |
|---|---|---|---|---|---|---|
| Kindergarten | 1 | 4 | 1 | 6 | 4 | 2 |
| First Grade | 0 | 0 | 2 | 3 | 6 | 4 |
| Second Grade | 0 | 0 | 1 | 1 | 3 | 1 |

Finally, participants were asked to complete the State RPDP Program Activity Evaluation (Table 6). Responses were positive, based on a 1-5 scale, with the highest area focused on opportunities for interactions and reflections (4.6). One teacher commented, “What I liked best was interacting with colleagues and problem solving, sharing ideas.”

## Conclusion

Resources, materials, and facilities necessary to train teachers and implement computer programming in Kindergarten, first, and second grades, along with classroom visits, mentoring, and observations were critical to the overall the success of this project. The main goal of the Bee-Bot Cadre was to introduce teachers, and to a greater extent their students, to computer programming, problem solving, and the integration of computer programming into other subject areas. The data indicate that both teachers and students increased their knowledge and facility with computer programming.

**Comments from participating teachers:**

- It took a year to actually understand the value of coding to the students' math skills and I used to be a math trainer. This is a valuable class.
- It was great getting to have Bee-Bots in the classroom and I believe my students benefited from the problem solving and coding.
- I liked the "lid off the box approach" – it can be uncomfortable but the results stretch both me and my students in our learning.
- I loved hearing about what other teachers were doing in their classes. I was also appreciative of the materials provided and the time given to create mats.
- Resources and ideas that were shared during each class were very helpful.
- I liked the responsiveness to questions and adjustments to class to problem solve and the ability to create materials for my classroom.
- I learned a lot about the Bee-Bots and robotic learning through this class.
- It has been a great learning experience for me and my students!

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**Case Study 7: BeeBot STEM Cadre Logic Model**

**Situation:** Need for exposure to innovative computer science / STEAM integration across the curriculum

| Inputs | Outputs | | Outcomes -- Impact | | |
|---|---|---|---|---|---|
| | *Activities* | *Participation* | Short | Medium | Long |
| Pre-K – 2nd grade BeeBot Cadre<br><br>Budget<br><br>9 BeeBot Hives (54 BeeBots total)<br><br>9 Digital cameras.<br><br>Social media supports Wiki, Flickr, blogs, other? as needed.<br><br>NWRPDP Pre-K – 12 STEM Learning Facilitator. | Training in BeeBot care and maintenance, programming, curriculum integration in STEM, ELA, Art.<br><br>8 - 10 Sessions @ 2.5 hours each session (20 – 25 hours). | 9 – 27 Teachers – 20 – 25 hours of training.<br><br>Measures<br><br># of schools<br><br># of districts<br><br># of informal science educators<br><br># of administrators | Increase teacher and student use of BeeBots to learn computer programming, problem solving, ELA, math and art integration (and other STEAM connections).<br><br>Teachers begin implementing Bee-Bots into classroom instruction.<br><br>Increase awareness of Bee-Bots and computer programming.<br><br>Increase knowledge of Bee-Bots implementation in the classroom.<br><br>**Measures**<br><br>Pre/Post Survey | Increase in the number of students' problem-solving skills and interest in computer programming.<br><br>Teachers are more aware of resources available.<br><br>Teachers increase use of Bee-Bots into classroom instruction.<br><br>Cadre sessions focus on feedback, further support in successful implementation towards student learning, and sharing of ideas from participating teachers.<br><br>**Measures**<br><br>Classroom observation of student and teacher implementation and utilization.<br><br>Pre/Post Survey | Teachers and students continue to learn and practice computer programming and problem solving.<br><br>Cadre members continue to support each other as a community of learners.<br><br>Collaborate on Bee-Bot implementation and computer science integration into all content areas.<br><br>Awareness of resources available<br><br>**Measures**<br><br>Pre/Post Survey |

**Assumptions** Funding from NWRPDP Grant; Scheduling of sessions based on availability of training space

**External Factors** Scheduling of sessions based on availability of training space

# Case Study 8: Nevada Computer Science Standards

## Introduction

Maria Klawe, president of Harvey Mudd College and renowned computer scientist, believes that "coding is today's language of creativity. All our children deserve a chance to become creators instead of consumers of computer science" (code.org, 2018). The role of educators is to provide the appropriate skills, training, and support for students to be college and career ready after high school graduation. Careers rapidly change as the world becomes more advanced with the help of technology. Hence, it is imperative that all students are provided equal opportunity and access to skills required of successful college graduates and for those entering the workforce.

State lawmakers passed Senate Bill 200 during the 2017 Nevada Legislative session. This bill requires that all students in grades K-5 receive instruction in computer education and technology, including computer science. High schools are also required to offer a state board approved computer science course and make efforts to increase enrollment of underrepresented minorities in the computer science field. This ground-breaking legislation also required writing Computer Science standards for the state of Nevada.

In August 2017, a large and diverse group of educators from across the state gathered to write Computer Science (CS) standards that span the K-12 grade levels. These standards were approved by the Academic Standards Council January 10, 2018, and the State Board of Education on January 18th. There are now K-12 Computer Science standards for the first time in Nevada.

Adopting new standards in a unique content area is different that revising standards. For some, computer science is foreign, unlike math or reading. All educators can relate to math, reading, science, and social studies because those were requirements in their own K-12 education. Few, however, received computer science education, unless a course was completed in a post-secondary setting. This creates a unique situation for educators in Nevada and requires training in both content and standards.

## Instructional Context

The Nevada Computer Science standards training was offered to all rural counties in the Northwest Region of Nevada. These rural counties included Carson, Churchill, Douglas, Lyon, and Storey. The training focused primarily on K-8 teachers, as those teachers were identified as possibly having the least amount of computer science content knowledge. High School teachers are content specialists and complete extensive post-secondary coursework before entering the education workforce, whereas K-8 teachers may have limited training. Table 1 below shows the number of teachers, by county, who participated in the CS standards training.

**Table 1: Computer Science Training Participants by County**

| County | Elementary School (K-5) Teachers | Middle School (6-8) Teachers |
|---|---|---|
| Carson | 13 | 7 |
| Churchill | 7 | 4 |
| Douglas | 8 | 5 |
| Lyon | 7 | 12 |
| Storey | 0 | 1 |

Table 2 below shows the demographic information for each county. (Nevada Report Card, 2017)

**Table 2: Demographic Data for Participating Counties**

| County | Total Enrollment | Ethnicities other than White | Individualized Education Plans | English Language Learners | Free and Reduced Lunch |
|---|---|---|---|---|---|
| Carson | 7,815 | 47.66% | 14.13% | 15.09% | 51.81% |
| Churchill | 3,196 | 31.6% | 15.18% | 6.76% | 49.41% |
| Douglas | 5,932 | 26.85% | 14.7% | 5.23% | 30.71% |
| Lyon | 8,348 | 32.01% | 11.79% | 5.23% | 55.41% |
| Storey | 425 | 9.18% | 17.18% | 0% | 28.47% |

## Initial Data and Planning

Participants completed a two-day overview training totaling 15 hours. Some trainings included teachers from different counties while others were limited to one specific county. This was strictly due to geography and availability. One focus of the training was identifying the differences between computer literacy and computer science. Computer Science is more than keyboarding, creating spreadsheets or presentations, and writing essays. Computer scientists are creators of the technologies used for computer literacy skills. At the conclusion of the 15 hours, all participants completed a post-reflective survey rating their knowledge before and after attending the training. The rating scale ranged from 1 (poor) to 5 (excellent). Questions ranged from overall knowledge of the Nevada Computer Science standards and concepts to teaching strategies for standards alignment. The guiding logic model developed for this case study can be found at the conclusion of the study.

## Delivery of Services

The 15-hour overview training included an introduction of the new Nevada Computer Science standards, including research supporting the standards, the mission and vision, and the structure of the standards. The standards include five concepts, 16 sub-concepts, and seven practices. Dedicated time to explain, explore, and engage with the standards structure was imperative for understanding. Participants also spent time digging into vertical alignment of the standards, which was necessary in order for teachers to fully understand the scope of standards in each grade level and grade band.

Computer Science content was another focus of the two-day training. Participants engaged in seven different activities focused on overarching computer science concepts that are critical to understanding the standards and teaching the content. Concepts included binary communication, transmitting data and images, protocols, and compression. Participants were asked to reflect on their experiences both as a learner and as a teacher throughout as a means to guide future planning.

Computer Science terminology has been a concern throughout the standards writing and adoption process. Feedback from participants on unknown terms was solicited throughout all trainings. Those terms were defined and explained before the end of the training to ensure understanding.

## Results and Reflection

All participants were asked to complete a post-reflective survey at the conclusion of the two-day training. The following figure visualizes the extent of the learning.

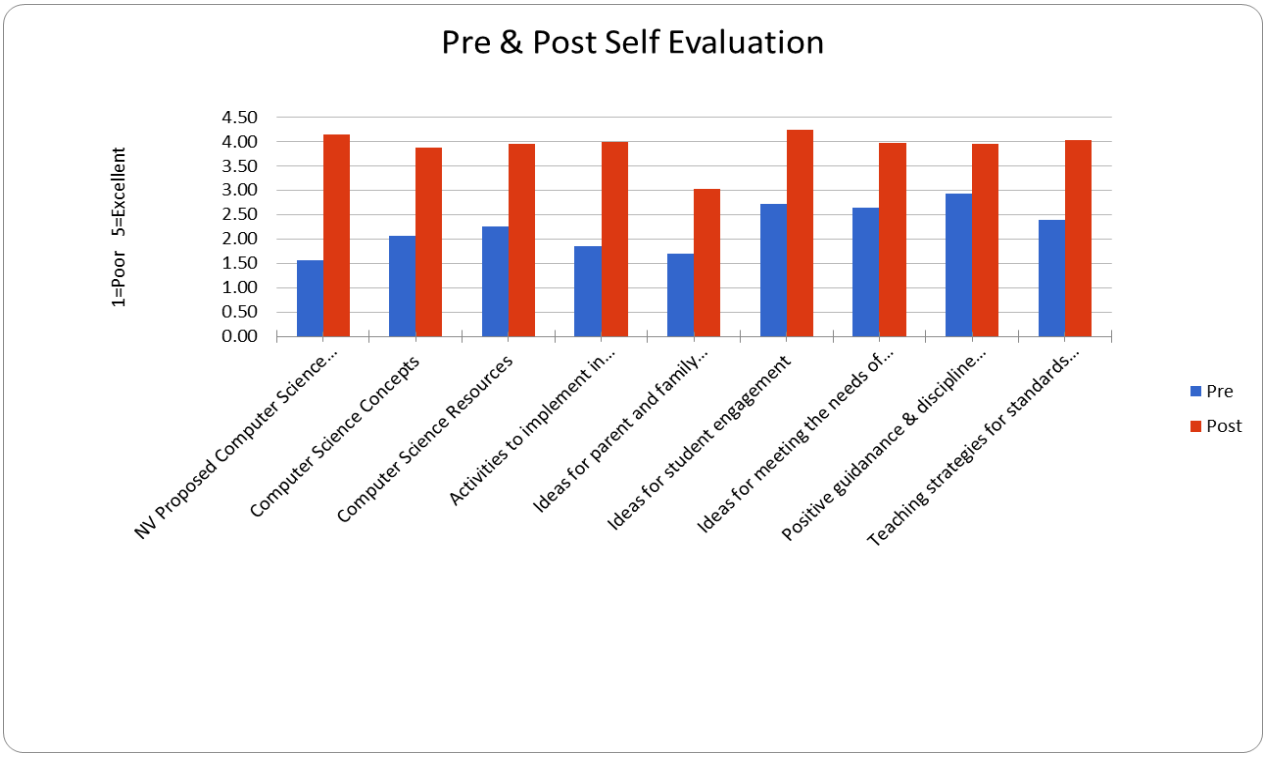


**Figure 1. Pre and Post Self-Evaluation Learning Gains**

Table 3 shows the results from the survey. The greatest gains were in knowledge of the Nevada Computer Science Standards and Activities to Implement in Support of the Standards. A *t*-test for significance was performed on the data and all gains were significant at the < .001 level.

**Table 3: Teacher Post-Reflective Survey Results**

| **Question** | **Before attending** | **After attending** | **Difference** | ***t* score** | ***P* value** |
|---|---|---|---|---|---|
| Nevada Computer Science Standards | 1.56 | 4.15 | +2.58 | 20.65 | < .001* |
| Computer Science Concepts | 2.06 | 3.87 | +1.81 | 14.63 | < .001* |
| Computer Science Resources | 2.26 | 3.95 | +1.69 | 14.56 | < .001* |

| Question | Before attending | After attending | Difference | *t* score | *P* value |
|---|---|---|---|---|---|
| Activities to implement in support of standards | 1.85 | 3.98 | +2.13 | 16.50 | < .001* |
| Ideas for parent and family engagement in curriculum and teaching practice | 1.69 | 3.02 | +1.32 | 8.60 | < .001* |
| Ideas for student engagement | 2.71 | 4.24 | +1.53 | 10.57 | < .001* |
| Ideas for meeting the needs of diverse learners | 2.65 | 3.97 | +1.32 | 9.01 | < .001* |
| Positive guidance and discipline techniques in the classroom | 2.94 | 3.95 | +1.02 | 6.55 | < .001* |
| Teaching strategies for standards alignment and assessment | 2.39 | 4.03 | +1.65 | 10.90 | < .001* |

* All gains were significant at the < .001 level

The positive results in the post-reflective survey indicate a significant increase in computer science content knowledge and standards, which was the primary focus. There is always concern about resources when new standards are written or when standards are revised. As such, participants received additional resources to use in implementation of the standards at the conclusion of the training. The time dedicated to investigating available resources was well spent. Participants indicated growth in having activities to implement in support of the standards, the second self-reported area of high growth.

The main focus for the two-day training was to build teacher competency in computer science concepts so that they could better understand the intent of the standards. Therefore, time was not dedicated to parent and family engagement or classroom management items, such as student

engagement and discipline techniques. As teacher competency increases, trainings will be adjusted to address these needs.

In addition to knowledge gain, participants were also asked to rate themselves on implementation of information received during the two-day training. Teachers ranked themselves on a scale ranging from 1 (very unlikely) to 5 (very likely). Teachers indicated they were very likely to use the information from the training in the future as demonstrated by the 4.31 average rating.

**Table 4: Classroom Implementation - 1 (very unlikely) to 5 (very likely)**

| | |
|---|---|
| I intend to use the information from this training in the future within my classroom | 4.31 |

Senate Bill 200 requires all students in grades K-5 to receive education in computer education and technology, including Computer Science, effective July 1, 2018. While implementation is a state requirement, it was important to know whether or not the information included in the standards training would be useful to teachers during the following school year. The data shows that the information provided to participants was beneficial and may aid implementation during the next school year.

## Conclusion

Computer Science standards training included many challenges. First and foremost, it is a new content area for most K-8 teachers who have not received training in computer science concepts in the past. Many of the teachers entered the training with trepidation and some degree of fear, considering they had had minimal previous exposure to the content. However, after the two-day training, all participants were able to demonstrate increased amount of Computer Science knowledge. For example, at the beginning of day one, teachers did not know what binary code was or how data is transmitted. By early afternoon on day two, teachers were leading each other in lessons that required binary code to complete. One participant commented, “The hands-on learning was the best.” Another commented, “I enjoyed seeing the different activities and seeing how to use them in different ways.” The increase in the participants’ learning was incredible to witness.

Another challenge that existed was different technology courses in the different counties. Some counties have dedicated certified teachers for computer courses. Those individuals were able to focus only on CS material for all K-5 students, whereas teachers in counties without designated computer teachers have multiple content areas to teach.

Access to computing devices for CS lessons was a primary concern of participants as they entered the two-day training. The assumption was that all students needed a device in order to

effectively teach any of the CS standards, essentially a 1:1 technology environment. At the conclusion of the training, however, teachers were able to see that many of the standards do not require a device and can be taught with "unplugged" activities. This "aha" moment may not have been possible if unplugged activities had not been included in the two-day training.

A final challenge was the lack of course alignment at the 6-8 level. Some middle schools in Nevada require all 7th or 8th grade students to complete the ½ credit computer course required for high school graduation, but not all schools do this. Hence, some middle school teachers faced road blocks as they struggled to visualize how the standards would be taught to students at their school site. The passion of the educators showed as they advocated for a required course for all students, but those decisions are in the hands of administrators and at the mercy of budgets and resources. Nevertheless, at the conclusion of the training, all teachers made connections to the CS standards and the courses they currently teach.

Overall, the training was very successful. Participants had a very steep learning curve, but they embraced it, took risks, and ended the training more knowledgeable with increased confidence in CS concepts which will transfer into implementation.

Additional comments from participants indicate their enthusiasm and interest in the content:

- Thanks for making the process really awesome.
- Great interaction with peers from all schools.
- Interactive, great ideas, lots of collaboration.
- Excellent pacing and challenge levels for all.
- I liked being challenged and filling my gaps.
- Highly engaging and challenging.
- Activities were tailored to the diverse needs of the participants.
- Collaboration with colleagues who are like minded [was the best].
- Lots of new information and ideas.
- I loved the hands-on activities and being able to acquire information and then try teaching it.

Training for this group of educators is not over. Pending approval and appropriate funding, this group of educators will participate in additional training during the 2018-19 school year. Future training will focus on unit and lesson design and continued clarification of standards.

Tony Hesieh, CEO of Zappos, once stated, "I think everyone should get a little exposure to computer science because it really forces you to think in a slightly different way, and it's a skill that you can apply in life in general, whether you end up in computer science or not" (code.org, 2018). Although challenges have been presented to the trainers, educators, and district personnel, everyone recognizes the importance and benefit of providing computer science lessons to children of all ages.

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**Case Study 8: Training of New Computer Science Standards Logic Model**

**Situation:** SB200 passed during the last legislative session, which includes the requirement for Computer Science standards. Nevada has never had Computer Science standards. However, a group of experts joined together in August and drafted new K-12 Computer Science standards. SB200 requires all students, grades K-5, receive education in computer science. Additionally, all public schools must make an effort to increase enrollment of underrepresented minorities in the field of computer science, including girls and students with disabilities. None of this can happen without professional development on the standards themselves as well as computer science concepts.

| Inputs | Outputs | | Outcomes -- Impact | | |
|---|---|---|---|---|---|
| | Activities | Participation | Short | Medium | Long |
| Budget<br><br>SB 200 Funds (awarded to districts only)<br><br>NWRPDP Facilitators<br><br>K-12 teachers in the Carson City School District, Douglas County School District, Lyon County School District, Churchill County School District, & Story County School District<br><br>Administration Expectations<br><br>Scheduling | 2-day Standards Training<br><br>1-day resource review training<br><br>Optional Training opportunities | K-12 teachers & Instructional Coaches in:<br>• Carson City School District<br>• Douglas County School District<br>• Churchill County School District<br>• Lyon County School District<br><br>Site and district administrators | Understanding of new NV Computer Science Standards<br><br>Increased understanding of Computer Science concepts<br><br>Increased pedagogical knowledge<br><br>Increased teacher confidence in content knowledge and instructional strategies<br><br>**Measures**:<br>RPDP Feedback Form, Post Reflective | Enhanced instructional practice (e.g., computational artifacts, rigor, collaboration, communication)<br><br>Increased implementation of training goals/objectives<br><br>Increased collaborative matching at school and district level<br><br>Increased teacher efficacy<br><br>Peer Observation<br><br>**Measures**:<br>Observation of implementation level<br>Observation is viewed positively by teachers<br>Post Reflective | Increased student application of concepts<br><br>Increased student enrollment in Computer Science electives<br><br>Increased teacher retention<br><br>**Measures**:<br>Increased participation rates of AP Computer Science Exam<br><br>Increased pass rates of AP Computer Science Exam<br><br>Increased high school graduation rate |

**Assumptions:** Teacher training will lead to teacher efficacy. All participants will be available and attend training. Positive attitudes and beliefs about Professional Practice. All participants will shift instructional practices.

**External Factors:** Competing district initiatives; District resources; Funding; Teacher burn out

# Case Study 9: Developing Alternate Route to Licensure Candidates' Conceptual Knowledge of Mathematics

## Introduction

"Those that know, do. Those that understand, teach" (Aristotle).

In 2015 Washoe County School District became an approved provider of an Alternative Route to Licensure (ARL) program for individuals with a bachelor's degree who were interested in obtaining teacher certification. The ARL program was created in Nevada in response to a statewide teacher shortage. Washoe County School District expects the program will help fill high-need teaching positions such as Elementary Education, Secondary Math, Secondary Science, and Special Education (KOLO, 2017). Candidates in the ARL program must complete 120 hours of professional development training, 120 hours of in–class observation and participation, and pass the Praxis Core Academics Skill for Educators exam. Candidates are then observed teaching and are assigned a mentor. Once candidates have completed these requirements they are eligible for provisional certification.

## Instructional Context

Washoe County School District is an urban school district, with approximately 64,000 students. During the 2017-18 school year, 14% of the students had an Individualized Education Plan, 16.7% were English Language Learners, and 44.9% received Free or Reduced Lunch. During the 2016-17 school year, 46% of elementary students scored proficient on the mathematics portion of the Smarter Balanced assessment. There were 4,073 teachers working in the Washoe County School District; 204 of those were new. There were 61 unfilled teaching positions in the Washoe County School District.

The participants in this study were Alternative Route to Licensure candidates who were pursuing an Elementary Education Certification. All of them had bachelor's degrees in an area other than education. They were currently acquiring the 120 hours of professional development in designated content and educational protocol. Most of them were concurrently acquiring the 120 hours of school-based experience. Some, but not all, of the candidates were licensed as substitute teachers in Nevada when they began the program; however, all must obtain a substitute license before program completion.

## Initial Data and Planning

Fifteen of the 120 hours of professional development hours for those pursuing an Elementary Education certification are spent learning elementary mathematical content and pedagogy. The Nevada Academic Content Standards call for a balance of procedural and conceptual understanding in Mathematics (NVACS, 2010). Teachers must know mathematics well in order

for students to become proficient in mathematics (National Research Council, 2001). Additionally, Ball, Thames, and Phelps (2008) assert that simply taking more math courses is not sufficient for knowing how to teach students well. Ball, Thames, and Phelps (2008) also state that in addition to content knowledge, teachers must have mathematical knowledge for teaching. Specialized content knowledge for teaching mathematics, not typically needed for purposes other than teaching, could include looking for patterns in student errors and determining whether a non-standard approach to solving a problem would work in general. The course in mathematics needed to provide the candidates with this type of knowledge in addition to learning how to read and interpret the Nevada Academic Content Standards and learning about best practices in mathematics instruction. The guiding logic model developed for this case study can be found at the conclusion of the study.

## Delivery of Services

While planning for the ARL math class, developing teacher conceptual understanding of the math content to be taught was a core consideration of the instructors. In addition, developing the ARL candidates' knowledge of learning progressions of mathematical content was another key consideration. The NWRPDP trainer, along with a Curriculum and Instruction math trainer, provided five 3-hour trainings to each of two groups of ARL candidates. The first class focused on changes in math instruction and why those changes are necessary for equitable learning of mathematics. The remaining four classes focused on how students' understandings of mathematics progresses along a continuum from early counting and moving through the four operations of addition, subtraction, multiplication, and division. Candidates had the opportunity to use a wide range of concrete and representational models as well as connections to computation algorithms. Many opportunities for discussion and making connections across ideas were present in each session.

Participants in both the fall and spring classes were given a survey at the end of the course asking them to reflect on how their math content knowledge and mathematical knowledge for teaching had changed due to the information presented in the class. Written feedback from the participants at the end of each session also gave insight to how participants were using their new learning.

## Results and Reflection

At the completion of each of the 15 hours of classwork for the ARL K-5 Mathematics course, participants were given a post-reflective survey regarding how well they felt the facilitators had met the objectives of the course. Teachers rated themselves on their knowledge of the standards and teaching strategies for implementing them before and after the course. Results from the fall section of the course were combined with the results from the spring section since the facilitators, the course objectives, and materials were the same in both cases.

Teachers were asked to rate themselves on a scale of one to five (one = poor, five = excellent) in five categories related to mathematical standards and instruction. The results are shown in the table below and in the narrative following.

**Table 1**. Post-reflective Knowledge Survey Average Results

| **Knowledge of topics before and after trainings** | **Average before training** | **Average after training** | **Amount of change** | ***t* score** | ***p* value** |
|---|---|---|---|---|---|
| **Knowledge and understanding of Nevada Academic Content Standards in Mathematics** | 1.5 | 4.0 | +2.5 | 18.258 | < .001* |
| **Deeper conceptual understanding of the mathematics** | 2.2 | 4.3 | +2.1 | 7.721 | < .001* |
| **Deeper conceptual understanding of the mathematics essential to the NVACS** | 1.8 | 4.0 | +2.2 | 11.153 | < .001* |
| **Knowledge of how students make connections using concrete, representational, and abstract models** | 1.9 | 4.5 | +2.6 | 14.571 | < .001* |
| **Development of an understanding of the learning progression for number concepts and operations** | 2.0 | 4.2 | +2.2 | 14.055 | < .001* |

*n*=23

* All gains were significant at the < .001 level.

For the skill of "Knowledge and understanding of Nevada Academic Content Standards in Mathematics," the average teacher rating before training was 1.5 and the average after training was 4.0 with an average growth of 2.5-points. For the category of "Deeper conceptual understanding of the mathematics," the average before training was 2.2 points while the average after training was 4.3 showing an average growth of 2.1 points. The next category was "Deeper conceptual understanding of the mathematics essential to the NVACS." The average score for before training was 1.8 and the average score after training was 4.0, showing an average growth of 2.2 points. With the next category, "Knowledge of how students make connections using

concrete, representational, and abstract models," the average score before training was 1.9 while the average after training was 4.5, showing a growth of 2.6 points. Finally, with the skill of "Development of an understanding of the learning progression for number concepts and operations," the before-score was 2.0 and the after-score was 4.2, showing a growth of 2.2 points. Survey results show that the ARL candidates had a better understanding in all the topics with an average growth of 2.2 points. It was exciting to see that the greatest growth appeared in the skill of "Knowledge of how students make connections using concrete, representational and abstract models" as much time was spent on modeling addition, subtraction, multiplication, and division with both concrete materials and representations. This is an important skill due to the balance between procedural and conceptual understandings called for by the standards. A *t*-test for significance was run on the responses and all gains were significant at the < .001 level.

Teachers were also surveyed about the effectiveness of the training by rating from 1 (poor) to 5 (excellent) the organization and preparation, style and delivery, responsiveness to participants, creating a learning environment, changes in perception of effective mathematics learning, and influence of the training on future classroom teaching.

**Table 2**. **Training Effectiveness Survey Results**

| **Effectiveness of Training** | **Average Rating 1(poor) 5 (Excellent)** |
|---|---|
| Organization and Preparation | 4.4 |
| Style and Delivery | 4 |
| Responsiveness to Participants | 4.4 |
| Creating a Learning Environment | 4.5 |
| Content of the Training | 4.4 |
| Changed your thinking about effective mathematics learning | 4.3 |
| Influence on future classroom teaching | 4.3 |

The survey results show that participants felt the training was effective as all categories had an average rating of four or greater with the greatest score in the category of "creating a learning environment." Teachers commented on the amount of learning that had occurred with comments

such as, “I’ve learned so much. So many strategies and most of them were new to me. I finally started to make connections,” and, “Very informative class. Thanks for the new knowledge.”

## Conclusion

Results show that teachers who attended this course felt they had gained knowledge of the standards and their ability to teach mathematics. They felt that the strategies they were learning would impact their classrooms when they became teachers. As one participant stated, “I want mathematics in my classroom to be something the students look forward to. Something that if the students are struggling, they know the different ways to figure out the solution.”

Although the candidates who took this class felt they had learned a lot about mathematics instruction and had grown in their knowledge of the concepts related to mathematics, fifteen hours only gives candidates a brief overview of all the mathematical content knowledge needed to become a proficient teacher. Although candidates will take future courses on mathematics instruction to fulfill the requirements for full licensure, some of the candidates themselves recognized the need for more than 15 hours of professional learning. There were comments such as “This was a huge amount of information to process,” “I wish we could have gone over higher levels of math,” and, “More fractions please.”

## References & Resources


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**Case Study 9: K-5 Math Course: Alternative Route to Licensure Logic Model**

**Situation:** Candidates in the Alternative Route to Licensure program receive an introduction to K-5 mathematics standards, mathematics pedagogy, and models for understanding elementary mathematics concepts in five 3-hour sessions.

| Inputs | Outputs | | Outcomes -- Impact | | |
|---|---|---|---|---|---|
| | Activities | Participation | Short | Medium | Long |
| RPDP trainer<br><br>C & I trainer<br><br>Students<br><br>Curriculum<br><br>Administrative Expectations<br><br>Budget<br><br>Training Facilities<br><br>Pre/post Reflective survey<br><br>Observations<br><br>Planning meetings<br><br>Debrief meetings | K-5 five 3-hour trainings<br><br>Work with math concepts and models<br><br>Work with identifying standards connected to mathematical models<br><br>Exit Tickets<br><br>Debriefing meetings and reflective conversations | ARL Candidates<br><br>Selected participants<br><br>C & I trainers | Improved understanding of models students may use<br>Increased understanding of the progression of number concepts and operations<br><br>Student development along a continuum of learning<br><br>Improved teacher content knowledge in math<br><br>**Measures**:<br>Feedback from trainings<br><br>Observations<br><br>Pre/post reflective survey | Teacher enhanced efficacy in teaching elementary math<br><br>Increased use of best practice pedagogy<br><br>Increased use of formative assessment during math instruction<br><br>Student use models/strategies over time.<br><br>**Measures:**<br>Case study<br>Self-reflective survey<br>observation | Improvement in student achievement in math<br><br>Increased passing rates in secondary math courses<br><br>Increased student engagement in mathematics<br><br>Increased graduation rates |

**Assumptions:** Differing levels of teacher content knowledge, differing levels of knowledge of pedagogy

**External Factors:** District math scores, school expectations for math instruction, Disttict expectations for math instruction

# Case Study 10: Improving Curriculum Implementation in Math to Increase Student Achievement

## Introduction

James Suroski, the 2018 Teacher of the Year in Mercer County, West Virginia, is an enthusiastic Eureka Math advocate, having discovered the EngageNY/Eureka Math curriculum online in 2014. He stated, "When we started, our third-grade students didn't have to be fluent with facts. After implementing Eureka Math, average students just blossomed. It made the rest of the year go swimmingly" (greatminds.org, 2018). In addition to seeing great gains in fluency, Suroski's students became better problem solvers, becoming much better at tackling complex, real-world problems. Perhaps most importantly, his students' attitudes about math changed. Suroski noticed, "My students have so much more confidence. They love the Sprints, which give them a chance to compete against themselves. And skip-counting has almost turned into a game of Simon Says that the students really enjoy" (greatminds.org, 2018).

In Douglas County School District, elementary teachers have been implementing the Nevada Academic Content Standards (NVACS), based on Common Core State Standards, in math for the last several years. While teachers have become familiar with the new standards for their grade levels, they have also been developing their own conceptual understanding of mathematics at their grade levels. Douglas County School District is in its third year of implementing Eureka Math as its elementary math curriculum. The focus for the 2017-18 school year was on creating consistent implementation in K-5 classrooms by encouraging and creating opportunities for collaboration. The goal was for student achievement scores in math to improve as this rigorous curriculum was implemented more consistently district-wide.

## Instructional Context

Douglas County School District (DCSD) is a rural school district located in Northern Nevada. DCSD is comprised of 13 schools, including 7 elementary schools, 2 middle schools and 4 high schools. Approximately 5,932 students were enrolled in DCSD during the 2016-17 school year. The student population is comprised of 67.52% white students, 20.74% Hispanic students, 3.38% American Indian students, and 5.89% students who are more than one race. DCSD has an Average Daily Attendance rate of 94.9%. It has a cohort graduation rate of 88.52% as reported in the Nevada Report Card (2017).

According to the Nevada School Performance Framework, Douglas County School District has seven three star schools and three schools rated at four stars. The high schools did not receive star ratings for the 2016-17 school year. Table 1 shows a summary of the standards-based Criterion-Referenced Test (CRT) performance for grades 3-5 based on 2015-16 assessment results compared to the 2016-17 results. Students scoring ED (emerging/developing) and AS

(approaching standard) do not meet proficiency. Students scoring MS (meets standard) and ES (exceeds standard) meet or exceed the standard.

**Table 1: DCSD Standards-based Test Performance Grades 3-5**

| Grade Level | Reading 2015-2016 | Reading 2016-2017 | Mathematics 2015-2016 | Mathematics 2016-2017 |
|---|---|---|---|---|
| 3 | ED 16.7%<br>AS 25.0%<br>MS 31.8%<br>ES 26.5% | ED 17.6%<br>AS 28.3%<br>MS 26.8%<br>ES 27.3% | ED 18.1%<br>AS 24.4%<br>MS 35.8%<br>ES 21.7% | ED 16.9%<br>AS 22.2%<br>MS 39.6%<br>ES 21.3% |
| 4 | ED 18.6%<br>AS 22.9%<br>MS 29.2%<br>ES 29.4% | ED 19.8%<br>AS 25.3%<br>MS 29.8%<br>ES 25.3% | ED 15.2%<br>AS 31.4%<br>MS 35.1%<br>ES 18.3% | ED 17.3%<br>AS 31.5%<br>MS 31.5%<br>ES 19.8% |
| 5 | ED 15.9%<br>AS 23.7%<br>MS 36.5%<br>ES 23.9% | ED 18.7%<br>AS 19.1%<br>MS 35.5%<br>ES 26.7% | ED 24.1%<br>AS 35.5%<br>MS 21.8%<br>ES 18.5% | ED 18.7%<br>AS 19.1%<br>MS 35.5%<br>ES 26.7% |

## Initial Data and Planning

During the 2016-17 school year, teachers reported that they felt more comfortable implementing Eureka Math, having struggled to learn the curriculum layout and the mathematical concepts during the 2015-16 school year. In looking at the gains in the percent of students meeting or exceeding from 2015-16 to 2016-17 in mathematics, both third grade and fifth grade showed improvement, with the fifth graders growing from 40.3 percent meeting or exceeding to 62.2 percent meeting or exceeding standards. However, the CRT results from 2016-17 indicated that 39.1 percent of the students in third grade in DCSD were either emerging/developing (ED) or approaching standard (AS) showing they had not yet mastered important mathematical concepts to the level expected in the standards. Taking this data into consideration, the focus on math instruction and curriculum implementation in third grade became the focus, with the goal of seeing improvement in third grade student achievement data. The guiding logic model developed for this case study can be found at the conclusion of the study.

## Delivery of Services

Teachers were initially asked to implement the math curriculum for the 2015-16 school year and to continue implementation in the 2016-17 school year. The 2017-18 school year was the third year of implementation. Two math leaders were selected at each elementary school site to hold six staff meetings during the school year and to support teachers with continued implementation of the curriculum. All elementary teachers were provided online resources to support their

teaching of the Eureka Math curriculum. Each school site was also able to design their own professional development training schedule so that they could customize training based on grade level needs. Each elementary teacher participated in a half day of professional learning as designed by their site. Further, elementary teachers could choose to attend additional in-service classes offered on varying Eureka Math topics. An NWRPDP professional development trainer at the district level also modeled math lessons in multiple classrooms throughout the district based on teacher request and provided support and guidance for the site-based math leaders.

The NWRPDP professional development trainer and a district office administrator completed one twenty-minute walk-through in each third-grade class to observe the implementation of the elements in the curriculum. During the walk-throughs, a modified Instructional Practice Guide (Achieve the Core, 2017) was used. Data was collected on the element of the lesson being observed in addition to the quality of prompts and discussion, engaging students in the learning, and formative assessment.

Finally, all elementary teachers were given the opportunity to participate in peer observations of and discussions around the math curriculum. Twenty-three elementary teachers participated in observations. There were seven different observation choices ranging from kindergarten through fifth grade. Teacher feedback from these observations indicated a high degree of satisfaction with the observations and debriefing discussions, with 100% of participants stating that the observation provided opportunities for interaction and reflection. When asked about the most important takeaways from the observation, one teacher wrote:

> I liked how the teacher asked students to name math strategies that they thought they might use in the new lesson or problem. Even though some of the strategies were not accurate, it got students thinking about what they already know and that they should be using what they've already learned to build new knowledge. It was great to see how centers could be used efficiently to teach Eureka Math to implement time for small group instruction and problem solving practice!

When asked in what ways the observation would impact student learning in the classroom, another teacher wrote, “More effective math lessons. My higher kids won't have to sit and listen to things that they already know.”

## Results and Reflection

In reviewing the walk-through data from 2016-17 and 2017-18, some trends emerged. In the 2016-17 walk-throughs, it was noted that teachers were spending too much time on fluency activities and were not customizing the lessons so that their pacing allowed them to go deeper with the concept development where they should be spending the bulk of their time. In the 2017-18 walk-throughs, there were important improvements in pacing which allowed multiple components of the lesson to be observed during the twenty-minute observation. Interestingly, as

with the 2016-17 data, no matter what element of the lesson was observed, student engagement with the mathematics was high. It was encouraging to see large gains of more than half a point in student discussion and group work. The use of formative assessment also showed a large increase. The 2017-18 walk-through data showed improvement in all but two of the categories observed. Table 2 shows a summary of the walk-through data for both school years. Observations were scored on a scale from 1 to 4, with 1 being "The teacher does not provide students opportunity and very few students demonstrate the behavior" to 4 being "The teacher provides consistent opportunities and most students demonstrate this behavior."

**Table 2: Third Grade Walk-through Data Averages – 2 Year Comparison**

| | 2016-2017 | 2017-2018 | Gain |
|---|---|---|---|
| Student Discussion | 2.1 | 2.72 | 0.62 |
| Written Justifications | 1.95 | 1.83 | -0.12 |
| High Quality Questions | 2.35 | 2.44 | 0.09 |
| Multiple Methods | 2.25 | 2.56 | 0.31 |
| Student Engagement | 3.25 | 3.5 | 0.25 |
| Problem Variety | 2.4 | 2.61 | 0.21 |
| Perseverance | 2.05 | 2.17 | 0.12 |
| Group Work | 2.4 | 3 | 0.60 |
| Hands-On Activities | 1.95 | 1.67 | -0.28 |
| Formative Assessment | 2.65 | 3 | 0.35 |

All kindergarten through fifth grade teachers were given the opportunity to complete a post-reflective survey at the end of the 2017-18 school year. Sixty-seven teachers responded to the survey. Table 3 summarizes the data collected in the post-reflective survey. In general, the data showed great improvement in teacher knowledge in all categories. A *t*-test for significance was performed and all areas showed significant growth at the .001 level. The greatest gains were seen in knowledge of the Eureka math curriculum and Zearn (the online version of the curriculum), knowledge of the models being used, and how to select which lessons to keep and which to cut in order to complete the curriculum in a school year. The improvement in knowledge of models was important because the models being used support multiple methods of solving problems and provide students with more tools to use when working with challenging problems.

**Table 3: Post-Reflective Survey Data**

| Knowledge of… | 2 years ago | Now | Gain | *t* score | *p* value |
|---|---|---|---|---|---|
| NVACS-Math | 2.96 | 4.92 | 1.96 | 13.126 | < .001* |
| Conceptual Understanding of Grade Level Content | 3.38 | 4.58 | 1.2 | 10.641 | < .001* |
| Eureka Math | 2.18 | 4.37 | 2.19 | 15.689 | < .001* |
| Lesson Customization Process | 2.12 | 4.21 | 2.09 | 14.529 | < .001* |

| Knowledge of… | 2 years ago | Now | Gain | *t* score | *p* value |
|---|---|---|---|---|---|
| Zearn | 1.66 | 4.01 | 2.35 | 18.304 | < .001* |
| Math Models | 2.13 | 4.43 | 2.3 | 16.109 | < .001* |
| Keep and Cut Lessons | 1.85 | 4.15 | 2.3 | 15.933 | < .001* |
| Differentiation using Eureka Math | 1.85 | 3.54 | 1.69 | 13.001 | < .001* |
| Overall Implementation | 2.43 | 4.36 | 1.93 | 13.756 | < .001* |

* Indicates significant growth at the $p < .001$ level.

## Conclusion

The results gathered from the walk-through data, as well as the post-reflective data, showed that not only were teachers feeling more confident in their knowledge of mathematics, but also in their delivery of high-quality, standards-aligned instruction to their students. Improvements on the State CRT in third and fifth grades also seem to indicate that math instruction and student learning of mathematics are improving. It is hoped that these positive trends will continue.

Several themes emerged when teachers were asked, as part of the post-reflective survey, what they wanted to learn more about with regard to Eureka math. Teachers want to learn more about differentiation in mathematics, how to use Zearn more effectively, and how to pace lessons and the year more effectively. They also mentioned that they would like to continue doing peer observations. These needs will remain areas of focus for the 2018-19 school year.

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**Case Study 10: _K-5 Math Curriculum Implementation_ Logic Model**

**Situation:** K-5 implementation of math curriculum in Douglas County School District in order to improve student achievement in math and math pedagogy.

| Inputs | Outputs | | Outcomes -- Impact | | |
|---|---|---|---|---|---|
| | Activities | Participation | Short | Medium | Long |
| RPDP trainer<br><br>Math curriculum teacher's materials, web access, manipulatives<br><br>Teachers<br><br>Students<br><br>Administrative expectations<br><br>Substitutes & stipends for training<br><br>Budget<br><br>Training room facilities<br><br>Support from Douglas County School District<br><br>RPDP trainer attendance at 4 day math training PD in curriculum<br><br>Stipends for math leaders<br><br>Google classroom<br><br>NVACS Math | K-5 math training determined by site needs assessment data<br><br>Pre-k math cohort training- 3 days<br><br>Lesson planning<br><br>Modeling lessons in classrooms<br><br>Classroom observations with feedback<br><br>Classroom walkthroughs in all 3rd grade classrooms<br><br>In-service classes for credit<br><br>2 math leaders per elementary site<br>• Monthly staff meetings at sites<br>• Attendance at math leader meetings<br><br>Access to online teaching resources<br><br>Analysis of 3rd grade math MAP scores in fall and spring | Prek-5 teachers, specialists, administrators | Improved content knowledge in math<br><br>Improved efficiency in scope of content to include all grade level math standards<br><br>Increased awareness and implementation of math curriculum<br><br>**Measures:**<br>Training Ratings<br>Case Study<br>Post-reflective survey<br>Walkthrough data using modified Instructional Practice Guide | Enhanced self-efficacy in teaching elementary math<br><br>Change in instructional practice in math<br>• Increased use of formative assessment in math planning<br>• Increased teaching for mastery over time<br><br>Improved math instruction using math materials<br><br>Increased student engagement during math lessons<br><br>**Measures:**<br>Case study<br>Confidence ratings – perception data in post-reflective survey<br>Walkthrough data using modified Instructional Practice Guide | Improvement in student achievement in math<br><br>Increased passing rates in secondary math courses<br><br>Increased enrollment in upper level math classes<br><br>Increased graduation rate<br><br>**Measures:**<br>School, District, and State data: SBAC, MAP, Nevada Report Card |

**Assumptions:** Site based math trainings based on needs; Differing levels of teacher math content knowledge at the elementary level; Math competency leads to higher student engagement and increased graduation rates

**External Factors:** District math scores lower than ELA scores

# Case Study 11: Leading for Impact: Supporting Administrators with the Nevada Educator Performance Framework

## Introduction

In recent years, national attention has fallen on teacher evaluation as a leverage point to increasing the effectiveness of instruction (Daly & Kim, 2010; Leithwood, Louis, Anderson, & Wahlstrom, 2004; Mathers, Oliva, & Laine, 2008). Nevada's response to examining a statewide, aligned evaluation system for teachers and administrators resulted in the Nevada Educator Performance Framework (NEPF). This framework, including standards and indicators for teacher and administrator performance, was officially adopted for use beginning in the 2015-16 school year. The Nevada Regional Professional Development Programs (RPDPs) have been heavily involved in providing information and support to administrators around the new rubrics for the evaluation of teachers. Special focus has been on the administrators' role in observing teaching through the lens of the NEPF rubrics, identifying evidence of performance, and providing feedback to teachers. This case study provides a glimpse into the new understanding and growth experienced by administrators who participated in targeted learning through the Leading for Impact (LFI) program provided by administrator support personnel in the Northwest Regional Professional Development Program (NWRPDP). The guiding logic model developed for this case study can be found at the conclusion of the study.

## Instructional Context

During the 2017-18 school year, NWRPDP partnered with the Southern RPDP who provided the basic framework and research background for the LFI professional learning series. The purpose of the LFI was to provide deeper understanding of the NEPF through research, examples, calibration with colleagues, and practical application. Taking into consideration the needs of administrators in the northwest region, modules were adapted and developed to provide a series of five classes, each class focused on one of the five Teacher Instructional Practice Standards of the NEPF.

## Initial Data and Planning

The school districts in the NWRPDP who use the NEPF standards and indicators for teacher evaluation are Carson City, Churchill, Douglas, Lyon, and Storey. Input from district-level personnel regarding site administrator needs for additional NEPF support for evaluation indicated that a deeper understanding of the teacher rubrics would be helpful. Site administrators were especially looking for ways to provide specific feedback to teachers to validate or to elaborate their instructional practice. Participating administrators were able to receive State credit hours for their work. The five modules were based on each of the Teacher Instructional Standards:

Module 1 - Standard 1:  New Learning Is Connected to Prior Learning and Experience

Module 2 - Standard 2: Learning Tasks Have High Demand for Diverse Learners

Module 3 - Standard 3: Students Engage in Meaning-Making through Discourse and Other Strategies

Module 4 – Standard 4: Students Engage in Metacognitive Activity to Increase Understanding of and Responsibility for Their Own Learning

Module 5 – Standard 5: Assessment Is Integrated into Instruction

## Delivery of Services

Workshops were held after school from 4:00 – 7:00 p.m. A total of seven workshop series were offered between spring of 2017 and spring of 2018. All levels of administrators were welcome and came from all districts in the northwest region. In several cases, principals attended with their assistant principals as a team. To frame the learning, participants read research articles and information from the original literature review behind the NEPF provided by the National Center for Research on Evaluation, Standards, and Student Testing (CRESST) at the University of California, Los Angeles. Participants discussed in depth how the research applied to their current understanding of the standard and indicator focus for the class. Videos were used to provide vetted examples of each standard. Participants collected "evidence" by scripting examples from the video that represented the expectations of the standard. The evidence was discussed in small groups and compared to the indicators for calibration. The videos were chosen from those vetted by CRESST and had accompanying facilitator guides that were already scored according to the rating levels for the NEPF. The administrators were given the facilitator guides with which to compare their own assessment of the videos. Feedback about learning and next steps was collected from the participants at the end of each session and used to refine subsequent classes. A final evaluation and post-reflective survey were collected at the conclusion of the workshop.

## Results and Reflection

Participants were asked to provide feedback on the quality of the workshop training in the areas of organization and preparation, style and delivery, responsiveness to participants, creating a learning environment, and content of the training. On a five-point scale (1 = not effective, 5 = very effective), all responses averaged between 4.83 and 4.95.

The post-reflective survey completed by the participants was based on a Lickert scale rating of 1 to 5 (poor to excellent). Administrators retrospectively assessed their knowledge and confidence before and after the workshops based on seven questions: 1) Knowledge of NEPF Teacher Instructional Standards and Their Indicators, 2) Knowledge of the research base supporting the

NEPF Standards and Indicators, 3) Knowledge of specific resources to support teachers in effectively meeting the expectations of the NEPF Standards, 4) Use of efficient systems for observing and collecting evidence of the NEPF Standards, 5) How to identify evidence demonstrating effective teacher practice as defined by the NEPF Standards, 6) Accuracy in observing and determining teacher performance levels of the NEPF Standards and Indicators, and 7) How to support teachers so that they can effectively meet the expectations of the NEPF Teacher Instructional Standards. Table 1 below displays the increases in learning identified by the participants on each of the questions. A *t*-test was performed on the responses and all areas showed significant increases in learning at the $p > .001$ level. The greatest gains in learning were in the areas of knowledge of specific resources to support teachers in effectively meeting the expectations of the NEPF standards and the research base supporting the NEPF standards and indicators.

**Table 1. Pre- and Post-Training Results (Rating scale of 1 to 5 where 1 is Poor and 5 is Excellent)**

| **Question** | **Pre-** | **Post-** | **Gain** | ***t* score** | ***p* value** |
|---|---|---|---|---|---|
| Knowledge of the NEPF Teacher Instructional Standards and Their Indicators | 2.96 | 4.12 | 1.16 | 12.904 | < .001* |
| Knowledge of the research base supporting the NEPF Standards and Indicators | 2.39 | 3.85 | 1.46 | 14.959 | < .001* |
| Knowledge of specific resources to support teachers in effectively meeting the expectations of the NEPF Standards | 2.51 | 4.33 | 1.82 | 16.505 | < .001* |
| Use of efficient systems for observing and collecting evidence of the NEPF Standards | 2.85 | 3.94 | 1.09 | 8.169 | < .001* |
| How to identify evidence demonstrating effective teacher practice as defined by the NEPF Standards | 2.88 | 4.10 | 1.22 | 13.685 | < .001* |
| Accuracy in observing and determining teacher performance levels of the NEPF Standards and Indicators | 2.87 | 3.91 | 1.04 | 9.403 | < .001* |
| How to support teachers so that they can effectively meet the expectations of the NEPF Teacher Instructional Standards | 2.82 | 4.18 | 1.36 | 15.334 | < .001* |

* Indicates significant positive gains from the pre-training to the post-training at the < .001 level.

Additionally, administrators were asked to give feedback on the extent to which they had received resources and would use the information at their sites. Administrators indicated that they had received many ideas for supporting effective teacher practice with the NEPF Teacher

Instructional Standards (4.5). Most importantly, administrators confirmed that they intended to use the information from the workshop in the future in the support and supervision of teachers (4.9). Eighty-six (86%) percent of participants responded that they would welcome additional information around the NEPF and teacher evaluation.

Comments on their experience with the LFI workshop showed that administrators appreciated resources and the time to reflect, learn, and collaborate with colleagues. Administrators were positive about using the information with staff and suggested doing some live observations in classrooms to accompany the videos.

- Identified elements that were most helpful: Resources to share with teachers such as videos, handouts, research articles; Videos followed by discussion; Interacting in a small group; Discussion with peers; Scripting and looking for evidence; Practice with scoring.
- I loved the format – good balance between research, application, strategies.
- Metacognition class was my favorite!
- I appreciated your knowledge and expertise.
- Thank you for five weeks of learning at a perfect time for me -
- Maybe take this session on the road to schools so that we could see teachers in action.
- Excellent PD – excited to share with my staff!

## Conclusion

The act of evaluating teachers is a complicated, time-intensive, and personal process. Administrators in the LFI workshops expressed the desire to enhance their expertise to support teachers and students through increased knowledge and facility with the new NEPF evaluation process, focusing on best practices in teaching and learning. Administrators found that the resources provided were useful and that the opportunity for guided reflection with colleagues was beneficial. NWRPDP will continue to offer the LFI workshop, especially as new administrators are added to the region. Based on the feedback received over the course of the LFI sessions, ongoing support for administrators around the evaluation process will remain a priority.

## References and Resources

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Mathers, C., Oliva, M., & Laine, S. W. M., (2008). *Improving instruction through effective teacher evaluation: Options for states and districts.* Retrieved from National Comprehensive Center for Teacher Quality website: http://www.tqsource.org/publications/ February2008Brief.pdf

**Case Study 11: Leading for Impact: Supporting Administrators with the Nevada Educator Performance Framework Logic Model**

**Situation:** Administrators evaluating teachers showed interest in deeper knowledge around the NEPF rubrics. Specific needs were receiving additional resources; practice with observation, analysis of teaching, and giving feedback; and calibrating understanding with colleagues.

| Inputs | Outputs | | Outcomes -- Impact | | |
|---|---|---|---|---|---|
| | Activities | Participation | Short | Medium | Long |
| Resources (Research, videos)<br><br>Facilitators experienced in working with administrators and the NEPF<br><br>Participants<br><br>Regional Training spaces | Five after-school workshop modules<br><br>Read and apply research<br><br>Watch and analyze videos of representative teaching<br><br>Practice with resources and learning in between workshops<br><br>Reflection with colleagues<br><br>Written responses for feedback to facilitators | K-12 Administrators in five districts:<br><br>Carson City<br>Churchill<br>Douglas<br>Lyon<br>Storey<br><br>District-level administrators as possible | Increased research and resources provided to teachers in support of the NEPF expectations<br><br>Increased understanding of the NEPF expectations for teachers and collection of appropriate artifacts.<br><br>Increased use of scheduling to enhance observation and coaching conversations for feedback to teachers<br><br>**Measures**<br><br>Formative feedback during workshop sessions<br><br>Post-reflective survey | Enhanced instructional practices as identified in the NEPF<br><br>Increased demonstration of NEPF- aligned teaching based on evidence<br><br>Increased administrator efficacy with use of NEPF<br><br>Increased facility with writing evaluations (decreased time spent)<br><br>**Measures**<br><br>Formative feedback during workshop sessions<br><br>Post-reflective survey | Increased alignment of teaching to the NEPF Standards and Indicators<br><br>Increased student learning<br><br>Changes in NEPF evaluation results<br><br>**Measures**<br><br>District and State reported mean NEPF ratings |

**Assumptions:** Administrators report accurate needs; Administrators will apply learning to their everyday practice; Teachers will receive new information from administrators

**External Factors:** Competing district initiatives draw on administrator time; Scheduling and time for observations, meetings with teachers; Teacher participation

# Appendices

# Appendix A: Overview of Regional Services 2017-18

Professional development services are reported in two formats: unduplicated counts which show how many teachers, administrators, paraprofessionals, and other educators were served in each county; and duplicated counts which reflect how many educators participated in trainings, many more than once. Tables 1 and 2 show these data in an overview format for the entire northwest region, broken down by elementary, middle, and high school for teachers. Administrator counts also are displayed along with a category of Others.

**Table 1: Unduplicated Number of Educators Trained by the NWRPDP**

| District | ES Teachers | MS Teachers | HS Teachers | Administrators | Others* | Total by District |
|---|---|---|---|---|---|---|
| Carson | 234 | 9 | 17 | 39 | 20 | 319 |
| Churchill | 85 | 27 | 30 | 6 | 18 | 166 |
| Douglas | 131 | 46 | 54 | 18 | 33 | 282 |
| Lyon | 87 | 69 | 37 | 11 | 6 | 210 |
| Storey | 5 | 4 | 0 | 3 | 0 | 12 |
| Washoe | 1111 | 130 | 147 | 19 | 133 | 1540 |
| Totals | 1653 | 285 | 285 | 96 | 210 | 2529 |

**Table 2: Duplicated Number of Educators Trained by the NWRPDP**

| District | ES Teachers | MS Teachers | HS Teachers | Administrators | Others* | Total by District |
|---|---|---|---|---|---|---|
| Carson | 474 | 25 | 39 | 63 | 38 | 639 |
| Churchill | 244 | 51 | 43 | 10 | 23 | 371 |
| Douglas | 283 | 94 | 99 | 26 | 38 | 540 |
| Lyon | 111 | 102 | 49 | 15 | 11 | 288 |
| Storey | 5 | 7 | 0 | 3 | 0 | 15 |
| Washoe | 1669 | 201 | 236 | 24 | 158 | 2288 |
| Totals | 2786 | 480 | 466 | 141 | 268 | 4141 |

*Others in Tables 1 and 2 include certified personnel who did not specify a grade level, substitutes, school counselors, district-level certified positions, and other participants such as paraprofessionals, and community members.

A total of 2,529 educators, or 53% of the approximate 4,761 educators employed in the region (as reported by each district), participated in programs provided by the NWRPDP during 2017-18 (unduplicated count). In terms of how NWRPDP participants are broken down by district, in 2017-18, 13% of participating teachers and administrators were from Carson City, 7% were from Churchill County, 11% were from Douglas County, 8% were from Lyon County, less than 1% from Storey County, and 61% from Washoe County. Many educators attended programs on more than one occasion, resulting in a total of 4,141 contacts between the NWRPDP and educators during the year (duplicated count).

## Type and Focus of Services - Regional Overview

The NWRPDP provides a variety of services for the six counties in the region. Figure 1 shows the breakdown in a visual format of the three broad types of services provided by regional trainers throughout the districts with a significant majority of services being in the form of instructional training and in-service classes for the 2017-18 school year.

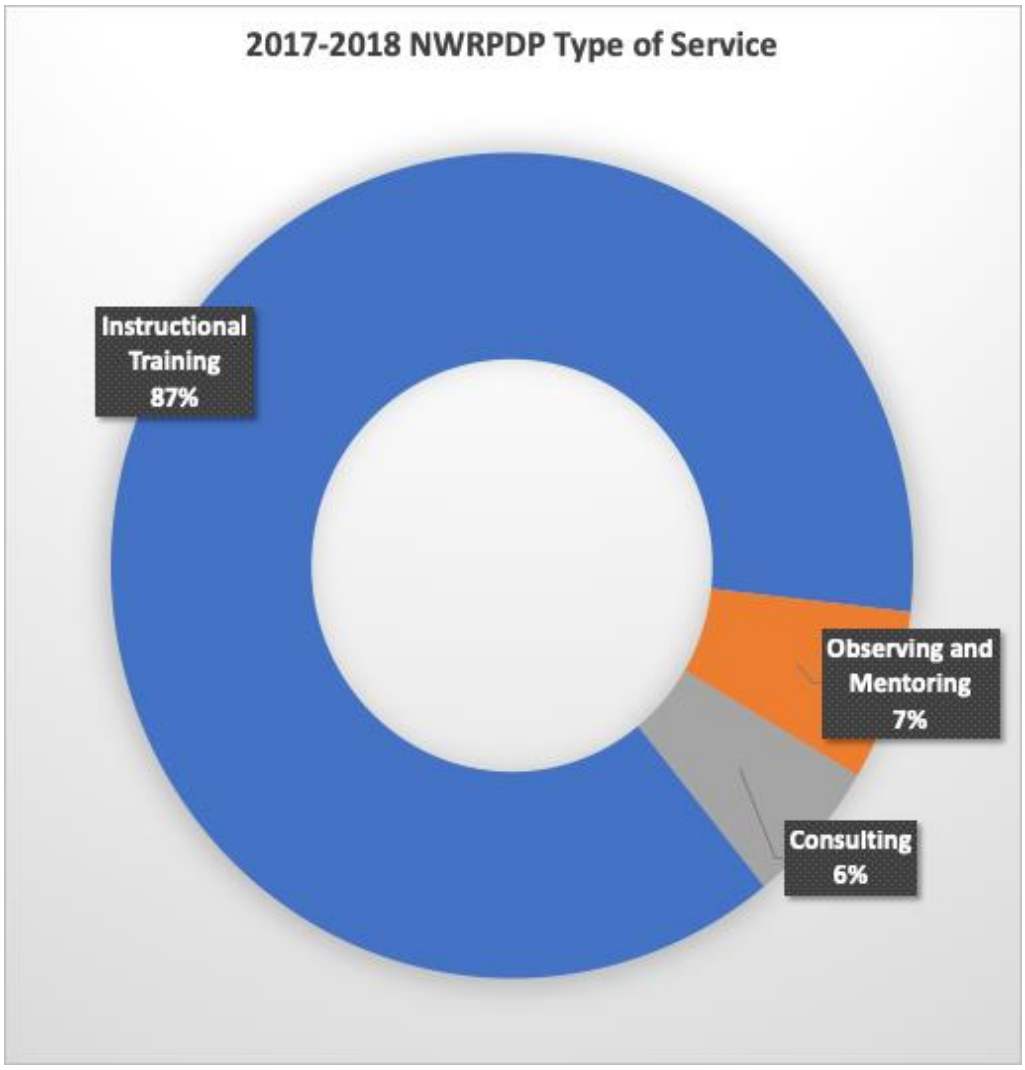


**Figure 1: Types of Services Provided by the NWRPDP**

Another measure of services is the focus of the services provided. This measure looks at the content of the services offered in the region (See Figure 2). The major areas of services provided in the region for the 2017-18 school year were NVACS trainings in areas of Literacy/English, Mathematics, Science, Social Studies, and general STEM. The remaining areas of focus were diverse, and included training of the Nevada Educator Performace Framework (NEPF), Computer Science, PreK-Third Grade support, Computer Education and Tech, Leadership Development, and Parent/Family Engagement.

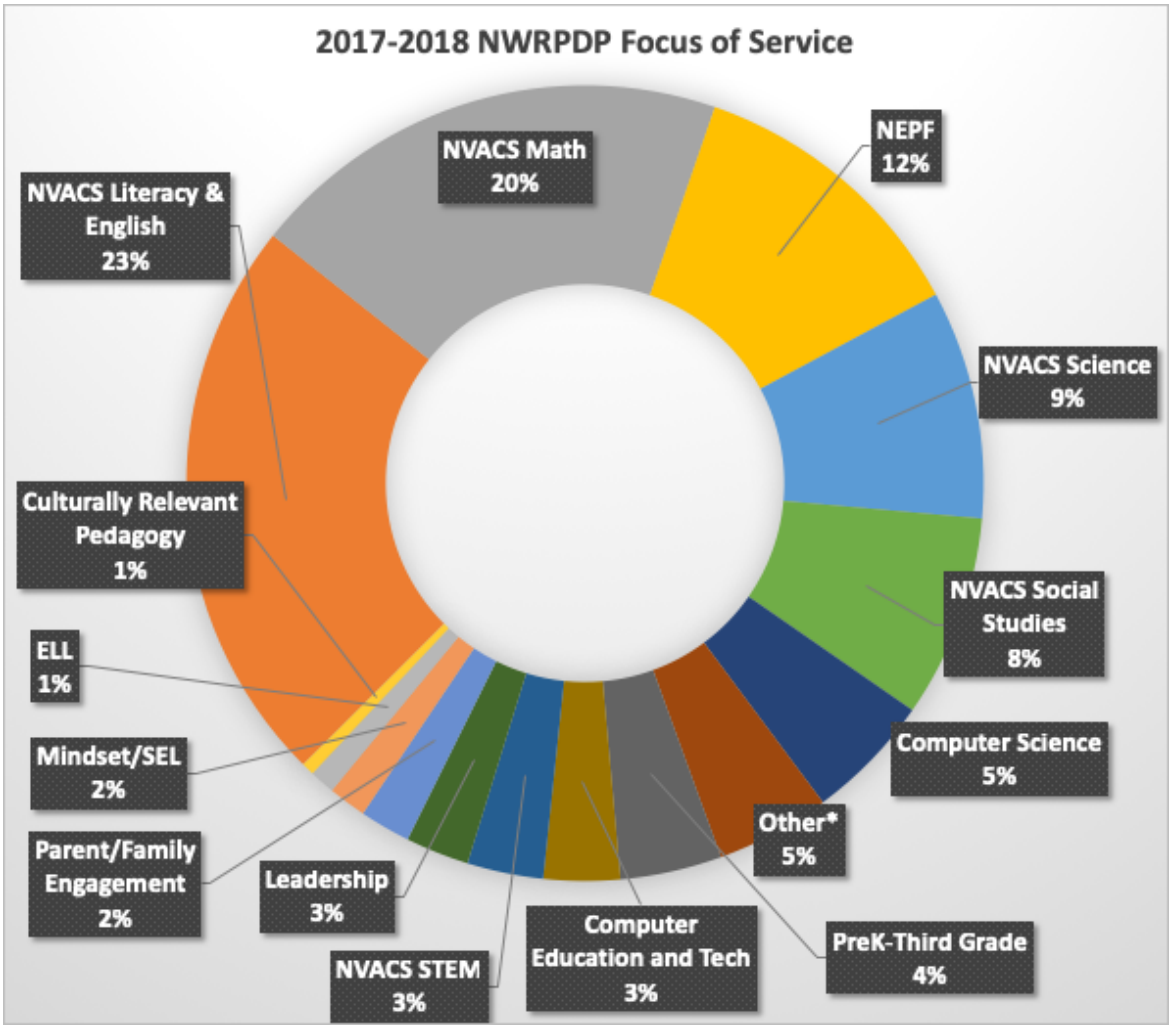


**Figure 2: Focus of Services of the NWRPDP**

# Appendix B: Carson City School District Services Summary 2017-18

**Carson City School District** has 11 schools: six elementary schools, two middle schools, one comprehensive high school, one alternative high school, and one charter school. Carson has 7% of the schools in the NWRPDP Region, which includes 154 schools. Two full-time learning facilitators are housed in Carson.

Training focused mainly on the Nevada Academic Content Standards in Literacy and Math, followed by the Nevada Educator Performance Framework, Computer Education and Tech, Computer Science, and Social Studies.

**Participant Mean Ratings on Quality of RPDP Trainings**

| *(Scale: 1 = not at all, 3 = to some extent, 5 = to a great extent)* | CCSD | Region |
|---|---|---|
| The activity matched my needs | 4.71 | 4.74 |
| The activity provided opportunities for interactions and reflections | 4.85 | 4.83 |
| The presenter/facilitator's experience and expertise enhanced the quality of the activity. | 4.83 | 4.87 |
| The presenter/facilitator efficiently managed time and pacing of activities. | 4.85 | 4.81 |
| The presenter/facilitator modeled effective teaching strategies. | 4.80 | 4.79 |
| This activity added to my knowledge of standards and/or subject matter content. | 4.81 | 4.73 |
| The activity will improve my teaching skills. | 4.76 | 4.74 |
| I will use the knowledge and skills from this activity in my classroom or professional duties. | 4.83 | 4.80 |
| This activity will help me meet the needs of diverse student populations (e.g., gifted and talented, ELL, special education, at-risk students). | 4.60 | 4.66 |

**Number of Educators Trained by NWRPDP**

| | Unduplicated | Duplicated |
|---|---|---|
| ES Teachers | 234 | 474 |
| MS Teachers | 9 | 25 |
| HS Teachers | 17 | 39 |
| Administrators | 39 | 63 |
| Others | 20 | 38 |
| Totals | 319 | 639 |

Carson educators were 13% of the educators served in the region (Using the unduplicated regional count of 2,529 educators).

**Overall Regional Learning Facilitator (LF) Productivity:**

- LFs spent 907 hours planning for CCSD interactions.
  This was 18% of the total planning time (5,086 hours).

- LFs spent 874 hours in interactions with CCSD employees.
  This was 19% of total interaction time (4,570 hours).
- Overall, LFs spent 18% of their time working with educators in CCSD.
- LFs spent approximately 6% of their time working with the Nevada Department of Education and other state committees in support of the Nevada Academic Content Standards and 11% of their time engaged in regional support.

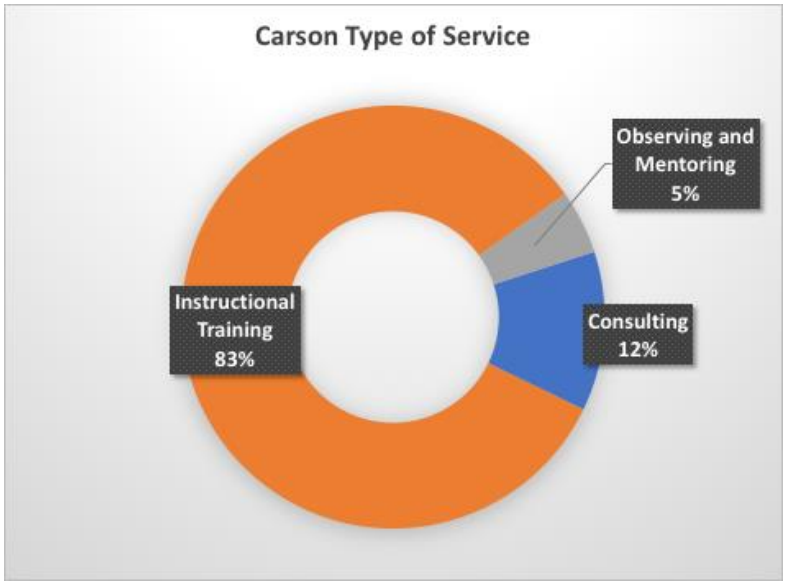


**Figure 1: Types of Services Provided**

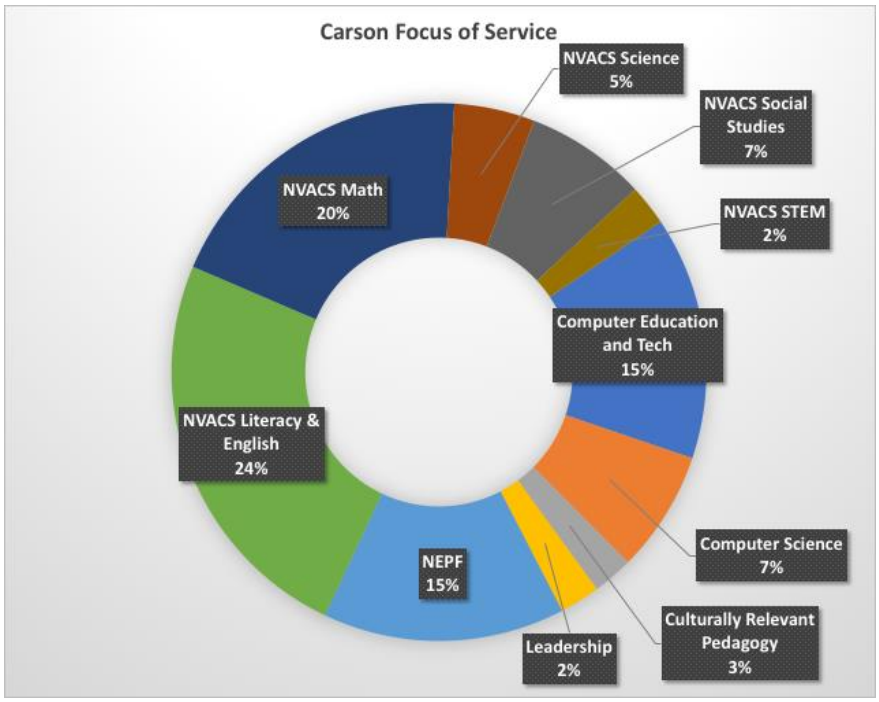


**Figure 2: Focus of Services**

# Appendix C: Churchill County School District Services Summary 2017-18

Churchill County School District has six schools: one Pre-K school, one Kindergarten-First grade school, one school for grades two-three, one school for grades four-five, one middle school, and one comprehensive high school. Churchill has 4% of the schools in the NWRPDP Region, which includes 154 schools.

Primary areas supported by regional learning facilitators this year were the Nevada Academic Content Standards in Literacy and Math, followed by the Nevada Educator Performance Framework and Computer Science and STEM.

**Participant Mean Ratings on Quality of RPDP Trainings**

| *(Scale: 1 = not at all, 3 = to some extent, 5 = to a great extent)* | ChCSD | Region |
|---|---|---|
| The activity matched my needs | 4.67 | 4.74 |
| The activity provided opportunities for interactions and reflections | 4.82 | 4.83 |
| The presenter/facilitator's experience and expertise enhanced the quality of the activity. | 4.82 | 4.87 |
| The presenter/facilitator efficiently managed time and pacing of activities. | 4.83 | 4.81 |
| The presenter/facilitator modeled effective teaching strategies. | 4.81 | 4.79 |
| This activity added to my knowledge of standards and/or subject matter content. | 4.62 | 4.73 |
| The activity will improve my teaching skills. | 4.63 | 4.74 |
| I will use the knowledge and skills from this activity in my classroom or professional duties. | 4.66 | 4.80 |
| This activity will help me meet the needs of diverse student populations (e.g., gifted and talented, ELL, special education, at-risk students). | 4.50 | 4.66 |

**Number of Educators Trained by NWRPDP**

| | Unduplicated | Duplicated |
|---|---|---|
| ES Teachers | 85 | 244 |
| MS Teachers | 27 | 51 |
| HS Teachers | 30 | 43 |
| Administrators | 3 | 10 |
| Others | 18 | 23 |
| Totals | 166 | 371 |

Churchill educators were 7% of the educators trained in the region (Using the Unduplicated regional count of 2,529 educators).

**Overall Regional Learning Facilitator (LF) Productivity:**

- LFs spent 850 hours planning for ChCSD interactions.
  This was 17% of the total planning time (5,086 hours).
- LFs spent 835 hours in interactions with ChCSD employees.
  This was 18% of total interaction time (4,570 hours).

- Overall, LFs spent 17% of their time working with educators in ChCSD.
- LFs spent approximately 6% of their time working with the Nevada Department of Education and other state committees in support of the Nevada Academic Content Standards and 11% of their time engaged in regional support.

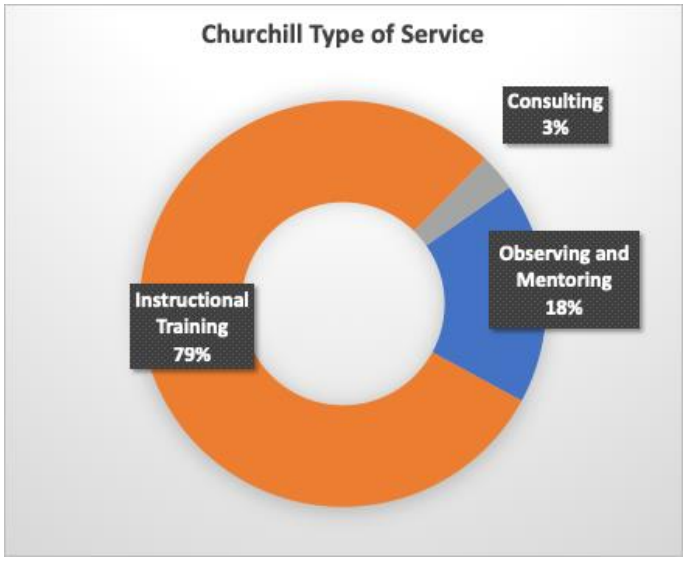


**Figure 1: Types of Services Provided**

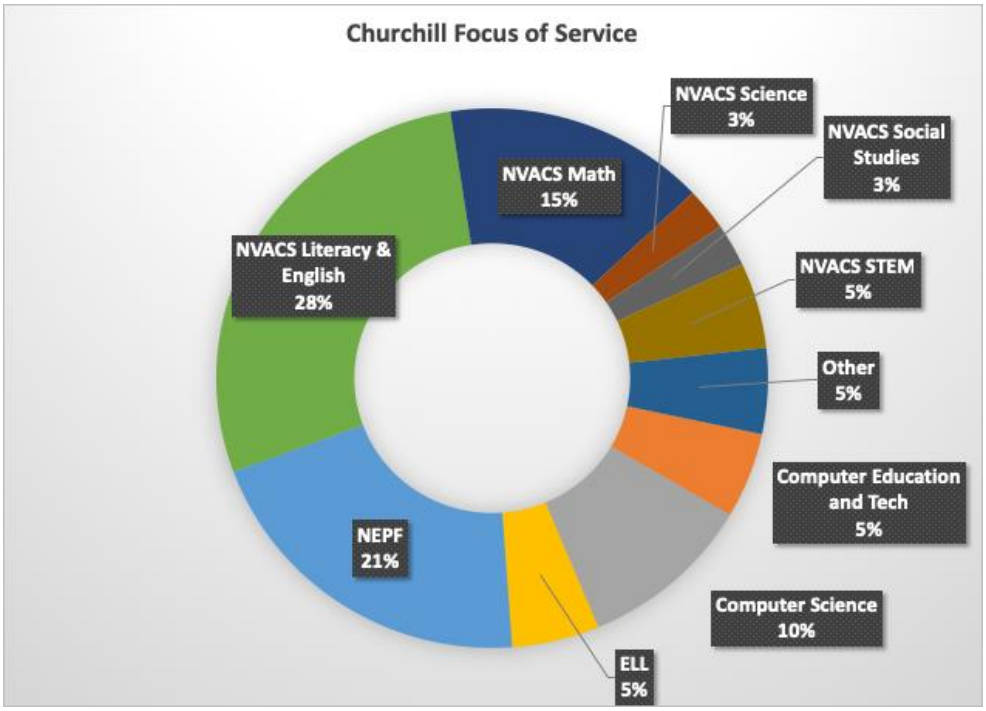


**Figure 2: Focus of Services**

# Appendix D: Douglas County School District Services Summary 2017-18

**Douglas County School District** has 14 schools: seven elementary schools, three middle schools, and four high school schools. Douglas has 9% of the schools in the NWRPDP Region, which includes 154 schools. A full-time Learning Facilitator coordinated services for Douglas County.

The majority of services provided this year were in support of the Nevada Academic Content Standards in Math, followed by Computer Science, Social Studies, STEM, and PreK-3rd Grade supports.

**Participant Mean Ratings on Quality of RPDP Trainings**

| *(Scale: 1 = not at all, 3 = to some extent, 5 = to a great extent)* | DCSD | Region |
|---|---|---|
| The activity matched my needs | 4.63 | 4.74 |
| The activity provided opportunities for interactions and reflections | 4.78 | 4.83 |
| The presenter/facilitator's experience and expertise enhanced the quality of the activity. | 4.99 | 4.87 |
| The presenter/facilitator efficiently managed time and pacing of activities. | 4.80 | 4.81 |
| The presenter/facilitator modeled effective teaching strategies. | 4.74 | 4.79 |
| This activity added to my knowledge of standards and/or subject matter content. | 4.56 | 4.73 |
| The activity will improve my teaching skills. | 4.59 | 4.74 |
| I will use the knowledge and skills from this activity in my classroom or professional duties. | 4.73 | 4.80 |
| This activity will help me meet the needs of diverse student populations (e.g., gifted and talented, ELL, special education, at-risk students). | 4.55 | 4.66 |

**Number of Educators Trained by NWRPDP**

| | Unduplicated | Duplicated |
|---|---|---|
| ES Teachers | 131 | 283 |
| MS Teachers | 46 | 94 |
| HS Teachers | 54 | 99 |
| Administrators | 18 | 26 |
| Others | 33 | 38 |
| Totals | 282 | 540 |

Douglas educators were 11% of the educators trained in the region (Using the Unduplicated regional count of 2,529 educators).

**Overall Regional Learning Facilitator (LF) Productivity:**

- LFs spent 570 hours planning for DCSD interactions.
  This was 11% of the total planning time (5,086 hours).
- LFs spent 810 hours in interactions with DCSD employees.
  This was 18% of total interaction time (4,570 hours).
- Overall, LFs spent 14% of their time working with educators in DCSD.

- LFs spent approximately 6% of their time working with the Nevada Department of Education and other state committees in support of the Nevada Academic Content Standards and 11% of their time engaged in regional support.

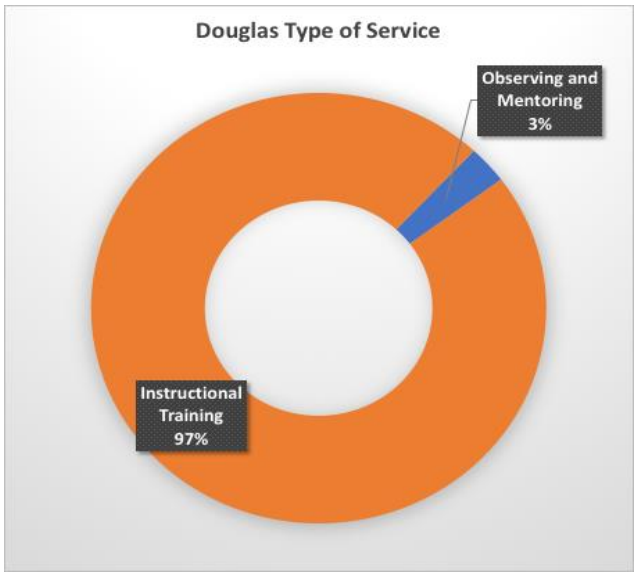


**Figure 1: Types of Services Provided**

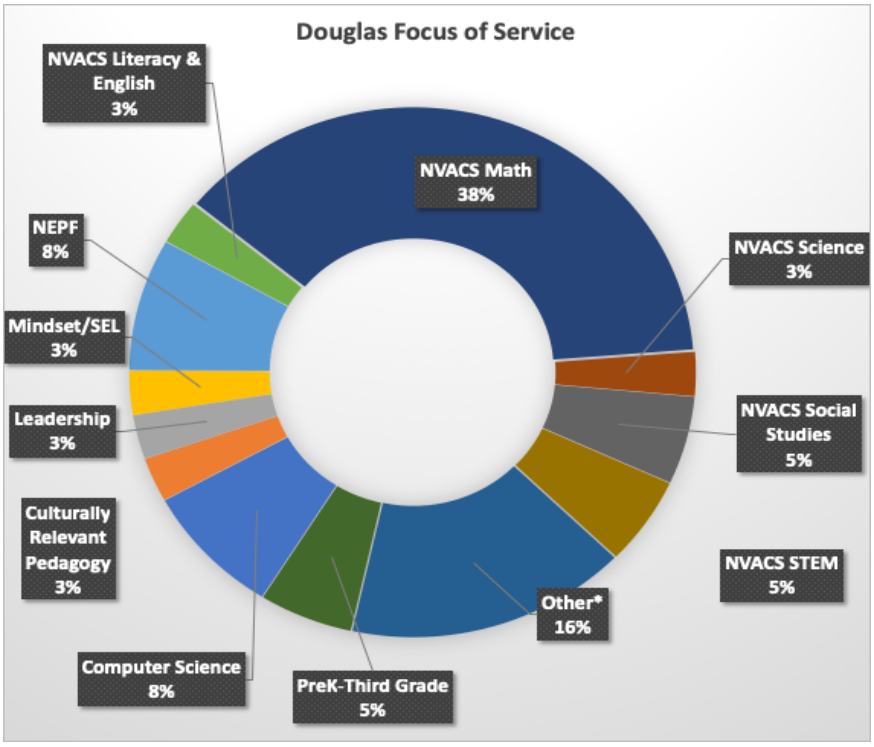


**Figure 2: Focus of Services**

# Appendix E: Lyon County School District Services Summary 2017-18

**Lyon County School District** has 17 schools in five communities (Yerington, Dayton, Fernley, Smith Valley and Silver Springs): eight elementary schools, four intermediate schools, four high schools, one K-8 school, and one K-12 school. Lyon has 11% of the schools in the NWRPDP Region, which includes 154 schools. A full-time facilitator coordinates services for Lyon County.

NWRPDP services were focused this year on the Nevada Academic Content Standards in Science, Literacy, and Computer Science, followed by STEM, Social Studies, Math, and the Nevada Educator Performance Framework.

**Participant Mean Ratings on Quality of RPDP Trainings**

| *(Scale: 1 = not at all, 3 = to some extent, 5 = to a great extent)* | LCSD | Region |
|---|---|---|
| The activity matched my needs | 4.58 | 4.74 |
| The activity provided opportunities for interactions and reflections | 4.71 | 4.83 |
| The presenter/facilitator's experience and expertise enhanced the quality of the activity. | 4.77 | 4.87 |
| The presenter/facilitator efficiently managed time and pacing of activities. | 4.72 | 4.81 |
| The presenter/facilitator modeled effective teaching strategies. | 4.63 | 4.79 |
| This activity added to my knowledge of standards and/or subject matter content. | 4.63 | 4.73 |
| The activity will improve my teaching skills. | 4.62 | 4.74 |
| I will use the knowledge and skills from this activity in my classroom or professional duties. | 4.65 | 4.80 |
| This activity will help me meet the needs of diverse student populations (e.g., gifted and talented, ELL, special education, at-risk students). | 4.58 | 4.66 |

**Number of Educators Trained by NWRPDP**

| | Unduplicated | Duplicated |
|---|---|---|
| ES Teachers | 87 | 111 |
| MS Teachers | 69 | 102 |
| HS Teachers | 37 | 49 |
| Administrators | 11 | 15 |
| Others | 6 | 11 |
| Totals | 210 | 288 |

Lyon educators were 8% of the educators trained in the region (Using the Unduplicated regional count of 2,529 educators).

**Overall Regional Learning Facilitator (LF) Productivity:**

- LFs spent 646 hours planning for LCSD interactions.

This was 13% of the total planning time (5,086 hours).

- LFs spent 468 hours in interactions with LCSD employees.
  This was 10% of total interaction time (4,570 hours).
- Overall, LFs spent 12% of their time working with educators in LCSD.
- LFs spent approximately 6% of their time working with the Nevada Department of Education and other state committees in support of the Nevada Academic Content Standards and 11% of their time engaged in regional support.

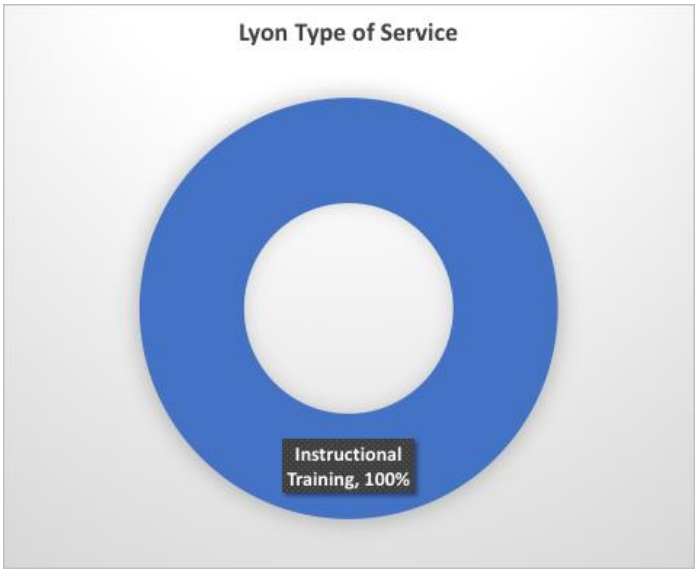


**Figure 1: Types of Services Provided**

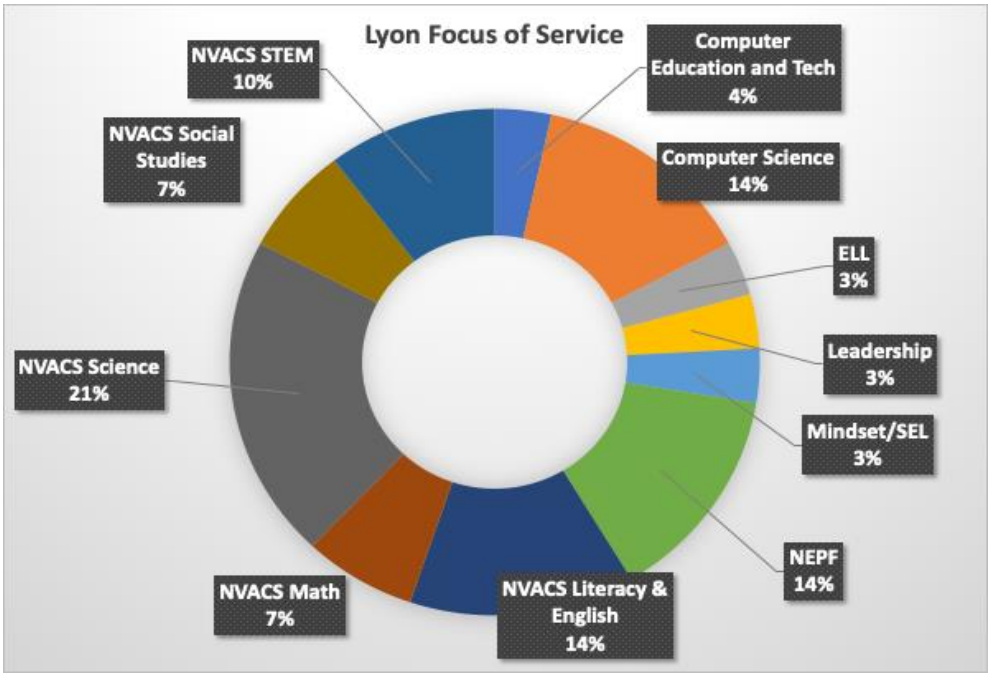


**Figure 2: Focus of Services**

# Appendix F: Storey County School District Services Summary 2017-18

**Storey County School District** has four schools and one administrator dedicated to organizing professional development. It offers two elementary schools, one middle school, and one high school. Storey County has 2.6% of the schools in the NWRPDP Region, which includes 154 schools.

Storey County mainly received services in implementing the Nevada Academic Content Standards in Science, followed by Computer Science, the Nevada Educator Performance Framework, and Math.

**Participant Mean Ratings on Quality of RPDP Trainings**

| *(Scale: 1 = not at all, 3 = to some extent, 5 = to a great extent)* | SCSD | Region |
|---|---|---|
| The activity matched my needs | 4.33 | 4.74 |
| The activity provided opportunities for interactions and reflections | 5.00 | 4.83 |
| The presenter/facilitator's experience and expertise enhanced the quality of the activity. | 5.00 | 4.87 |
| The presenter/facilitator efficiently managed time and pacing of activities. | 4.33 | 4.81 |
| The presenter/facilitator modeled effective teaching strategies. | 5.00 | 4.79 |
| This activity added to my knowledge of standards and/or subject matter content. | 5.00 | 4.73 |
| The activity will improve my teaching skills. | 4.67 | 4.74 |
| I will use the knowledge and skills from this activity in my classroom or professional duties. | 4.67 | 4.80 |
| This activity will help me meet the needs of diverse student populations (e.g., gifted and talented, ELL, special education, at-risk students). | 4.00 | 4.66 |

**Number of Educators Trained by NWRPDP**

| | Unduplicated | Duplicated |
|---|---|---|
| ES Teachers | 5 | 5 |
| MS Teachers | 4 | 7 |
| HS Teachers | 0 | 0 |
| Administrators | 3 | 3 |
| Others | 0 | 0 |
| Totals | 12 | 15 |

Storey educators were <1% of the educators trained in the region (Using the Unduplicated regional count of 2,529 educators).

**Overall Regional Learning Facilitator (LF) Productivity:**

- LFs spent 284 hours planning for SCSD interactions.
  This was 6% of the total planning time (5,086 hours).
- LFs spent 125 hours in interactions with SCSD employees.
  This was 3% of total interaction time (4,570 hours).
- Overall, LFs spent 4% of their time working with educators in SCSD.

- LFs spent approximately 6% of their time working with the Nevada Department of Education and other state committees in support of the Nevada Academic Content Standards and 11% of their time engaged in regional support.

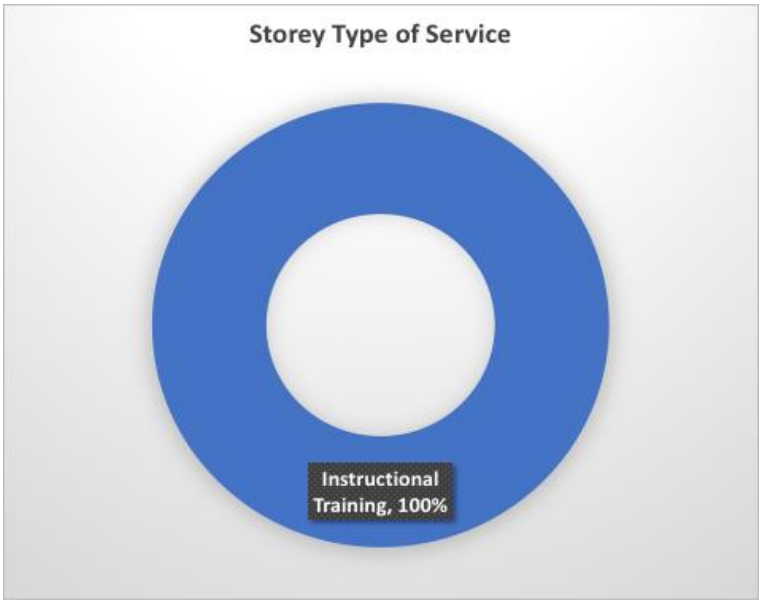


**Figure 1: Types of Services Provided**

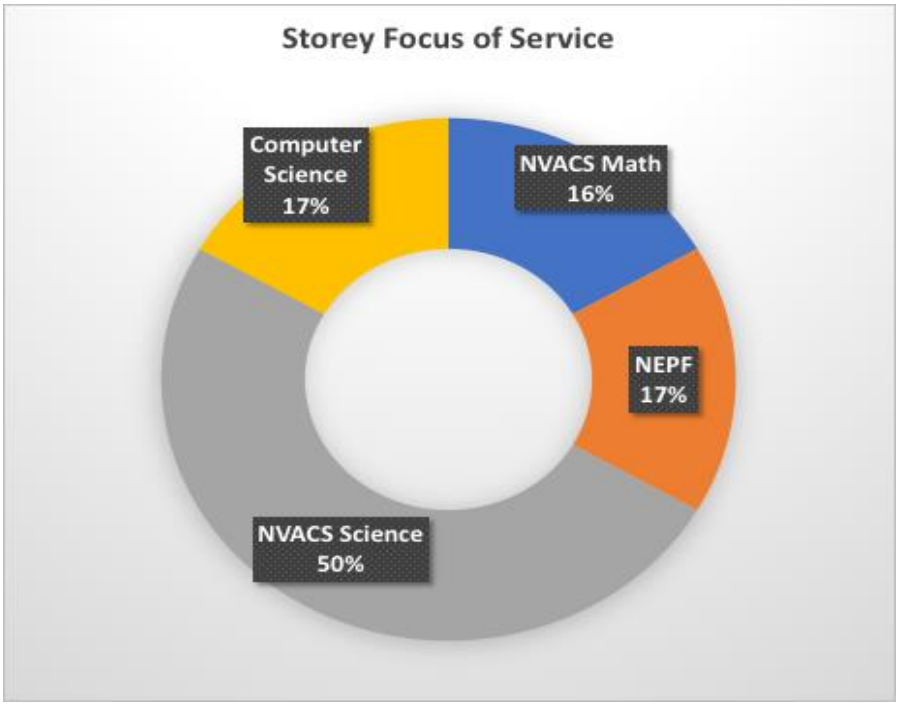


**Figure 2: Focus of Services**

# Appendix G: Washoe County School District Services Summary 2017-18

**Washoe County School District** is the largest school district in the region with 102 schools: 62 elementary schools, 15 middle schools, 15 high schools, two schools for special populations, and eight charter schools. Washoe has 66% of the schools in the NWRPDP Region, which includes 154 schools.

Nevada Academic Content Standards in Literacy (including writing) was the main focus of training, followed by Science, Math, Social Studies, and PreK-3rd Grade supports, STEM, and Teacher Leadership.

**Participant Mean Ratings on Quality of RPDP Trainings**

| *(Scale: 1 = not at all, 3 = to some extent, 5 = to a great extent)* | WCSD | Region |
|---|---|---|
| The activity matched my needs | 4.82 | 4.74 |
| The activity provided opportunities for interactions and reflections | 4.86 | 4.83 |
| The presenter/facilitator's experience and expertise enhanced the quality of the activity. | 4.86 | 4.87 |
| The presenter/facilitator efficiently managed time and pacing of activities. | 4.81 | 4.81 |
| The presenter/facilitator modeled effective teaching strategies. | 4.81 | 4.79 |
| This activity added to my knowledge of standards and/or subject matter content. | 4.80 | 4.73 |
| The activity will improve my teaching skills. | 4.81 | 4.74 |
| I will use the knowledge and skills from this activity in my classroom or professional duties. | 4.86 | 4.80 |
| This activity will help me meet the needs of diverse student populations (e.g., gifted and talented, ELL, special education, at-risk students). | 4.74 | 4.66 |

**Number of Educators Trained by NWRPDP**

| | Unduplicated | Duplicated |
|---|---|---|
| ES Teachers | 1111 | 1669 |
| MS Teachers | 130 | 201 |
| HS Teachers | 147 | 236 |
| Administrators | 19 | 24 |
| Others | 133 | 158 |
| Totals | 1540 | 2288 |

Washoe educators were 61% of the educators trained in the region (Using the Unduplicated regional count of 2,529 educators).

**Overall Regional Learning Facilitator (LF) Productivity:**

- LFs spent 2029 hours planning for WCSD interactions.
  This was 40% of the total planning time (5,086 hours).
- LFs spent 1637 hours in interactions with WCSD employees.
  This was 38% of total interaction time (4,570 hours).
- Overall, LFs spent 38% of their time working with educators in WCSD.

- LFs spent approximately 6% of their time working with the Nevada Department of Education and other state committees in support of the Nevada Academic Content Standards and 11% of their time engaged in regional support.

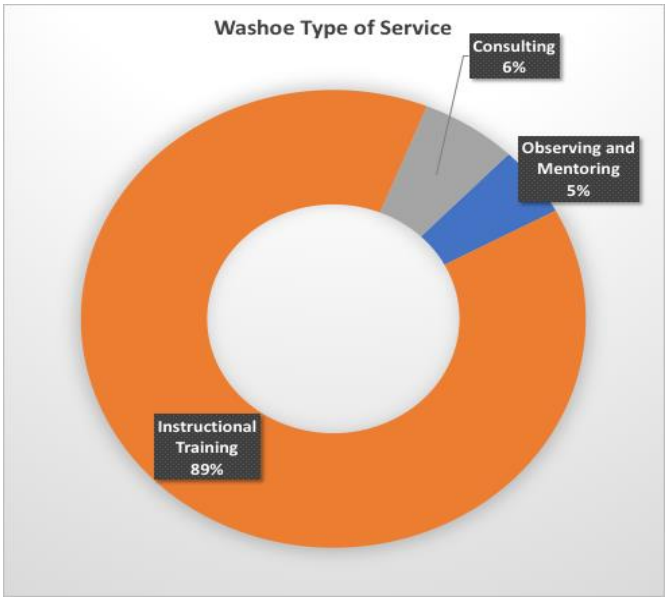


**Figure 1: Types of Services Provided**

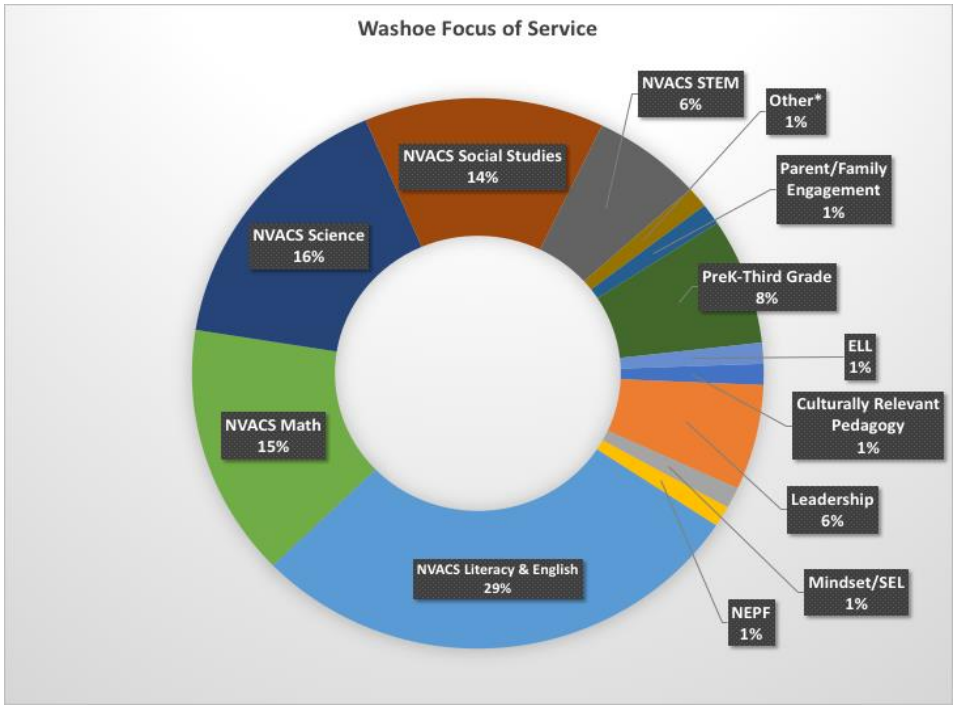


**Figure 2: Focus of Services**