NWRPDP

Northwestern Nevada Regional Professional Development Program

2020-2021 Annual Report

August 2021

Sara Cunningham

Program Director

TABLE OF CONTENTS

Contents

TABLE OF FIGURES

TABLE OF TABLES

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 (NVACS) 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).
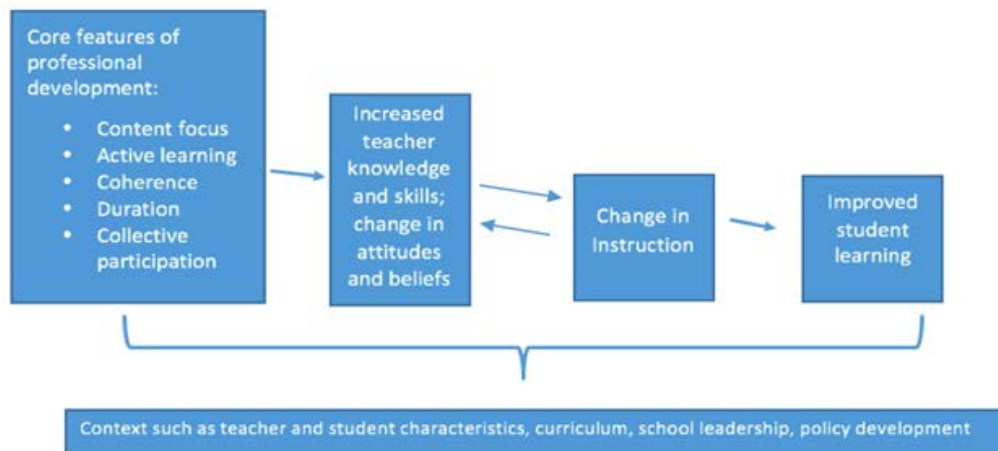
Figure 1: Conceptual Framework for Studying Effects for Professional Development on Teachers and Students

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 to become the Nevada Professional Development Standards. 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)	2020-21
1. The training matched my needs.	4.60
2. The training provided opportunities for interactions and reflections.	4.76
3. The presenter's/facilitator's experience and expertise enhanced the quality of the training.	4.79
4. The presenter/facilitator efficiently managed time and pacing of activities.	4.77
5. The presenter/facilitator modeled effective teaching strategies.	4.74
6: This training added to my knowledge of standards and/or my subject matter content.	4.59
7. This training will improve my teaching skills.	4.63
8. I will use the knowledge and skills from this training in my classroom or professional duties.	4.70
9. This training will help me meet the needs of diverse student populations.	4.63

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*

	Aggregate	*Carson*	*Churchill*	*Douglas*	*Lyon*	*Storey*	*Washoe*
Total Trainings	**184**	**25**	**33**	**42**	**10**	**15**	**42**
Instructional	152	20	28	36	7	14	33
Observation and Mentoring	14	2	0	4	1	1	5

| Consulting | 17 | 3 | 5 | 2 | 2 | 0 | 4 |

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	**5,751**	**494**	**200**	**362**	**637**	**34**	**4,024**
Unduplicated Teachers	1,660	234	189	236	192	35	711
Duplicated Teachers	3,064	471	543	573	328	77	990
Total Regional Administrators	**596**	**33**	**13**	**42**	**47**	**4**	**457**
Unduplicated Administrators	156	31	11	21	15	2	67
Duplicated Administrators	284	56	24	46	31	5	111

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	156	31	11	21	15	2	67
Duplicated Administrators	284	56	24	46	31	5	111

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	126	7	7	8	19	0	79
Duplicated Teachers	127	7	7	8	19	0	80

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	140	70	36	1	0	0	31

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	**184**	**25**	**33**	**42**	**10**	**15**	**42**
NVACS	232	17	28	33	9	11	40
NEPF	134	9	12	15	8	2	24
Culturally Relevant Pedagogy	149	10	12	19	8	2	27

Note: Aggregate total trainings equals the total of all 2020-21 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.

 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 Content Standards (NVACS) 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 5,751 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 445 in Storey County to 63,000 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 Nevada Professional Learning Standards (based on the Learning Forward Standards for Professional Learning). 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 professional development 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 and with 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 (2019-21)

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 2019-21: $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 provided the training listed below for teachers and administrators during the 2019-21 biennium.

- NVACS K-12 Computer Science Standards implementation to include: Computer Science Endorsement courses, Botball training, and Code.org courses.
- Technology Integration
  - Google Level 1 and Level 2 certification courses
  - Educators across the region and state participated in several workshops on how to use Google tools during distance learning throughout the school year, including regular office hours for support as needed.
- NVACS Social Studies implementation and instructional resource support. Various book clubs were facilitated with a focus on content and lesson development as a support in social studies classrooms.
- (NELIP) Early Literacy Cadre/Literacy Cohort restart:
  - The first virtual cohort of Early Literacy Cadre was held for PreK-third grade teachers. Virtual 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.
- Math professional learning opportunities
  - Math support will include a variety of models
    - A three-credit SUU course focused in the eight mathematical practices.
    - Site support for novice math teachers focuses on lesson design, standards, and assessment of student learning.
    - 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.
    - Use of virtual math tools for K-8 classroom teacher teaching virtually or at a distance.
- STEM Program
  - Teachers across the region participated in an Introduction to STEM course held virtually.
  - AWIM kit training was provided for schools that requested. Each teacher participating received an instructional kit
- 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) - continuation
  - 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
  - Teachers receive training in science standards, cross-cutting concepts, science and engineering practices, and disciplinary core ideas.
  - Supports for all areas of science standards were provided on an ongoing basis. Integrated opportunities will be provided as follow up.

  - Support for engagement science lessons for students learning in various instructional models during the COVID-10 pandemic.

- Parent and Family Engagement
  - SUU three-credit course was offered three times during the 2020-21 school year. This course focuses on strategies for educators to engage families in their child's educational experience.
  - Family literacy club are designed to support teacher leaders in planning and implementing 2-4 literacy events at their individual school sites.
- Multicultural Education
  - Educators receive training on the foundations of multicultural education and culturally responsive teaching practices.

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.*

The Nevada Regional Professional Development Programs revised two gifts and grants in the 2020-2021 academic year: 1) TESLA (Computer Science) and 2) Great Teaching and Leading Fund (GTLF). The Southern RPDP served as the fiscal agent for the TESLA award and the Northwest served as the fiscal agent for the GTLF grant.

TESLA

Seventy-seven teachers received a stipend or a 0.5 in-service credit for participating to attend a one=day workshop with emphasis on code.org computer science curriculum. The workshop was offered on weekends by a certified code.org computer science trainer.

GTLF

Funds from the Great Teaching and Leading grant award were used to support the Teachers Leading Change Summer Institute. This grant supported the purchase of materials for the two-day event, as well as stipends for the facilitators to plan and run the event. Thirty-nine educators participated in this summer institute.

Regional Projects: NWRPDP Case Studies

Self-Evaluation Procedures

As outlined in NRS 391A.190, Director Sara Cunningham, 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 prominent 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 training activities (outputs), and links them to the short, medium, and long-term outcome objectives of the NWRPDP.

NWRPDP Logic Model 2017 – 2022

Situation: The Northwest Regional Professional Development Program supports the professional learning of teachers and administrators in a variety of content areas across the region's six school districts. *Updated 4.11.19*

INPUTS	OUTPUTS		OUTCOMES – IMPACT		
	Activities	*Participation*	*Short-Term*	*Medium-Term*	*Long-Term*
NWRPDP Staff	Trainings/ In-services		-Increase/Maintain Participation/ Engagement	-Change in Instructional Practice	-Enhanced student Achievement -Close Achievement Gap
		Teachers			
Budget	Consultation/ Collaboration		-Develop Opportunities for Teacher Leadership	-Implementation of Workshop Goals/Targets	-Increased Grad. Rate
		Administrators			-NV Kids Read
Governing and State Boards	Coaching/ Observation				-College/Career Readiness
		Support	-Increase Content Knowledge	-Enhance Teacher Self-efficacy	-Increased Teacher Retention
	Developing Resources For Educators	Staff		-Practice of Multi-Culturalism & Family Engagement	
Facilities					-Stable, Sustained Funding
	Educational Advocacy	Parent/Family Engagement	-Enhance Pedagogy		
				-Change in Administrator/ Teacher Mindset & Practice	
Partners: RPDPs, NDE, Districts, Schools, UNR	Improved Systems for Data Collection	Community	***Measures:*** Training Ratings Case Studies	***Measures:*** Case Studies	***Measures:*** Existing School District, and State Educational Data

ASSUMPTIONS
- Continued Funding
- Growth Mindset and Beliefs about Professional Practice
- Professional Learning leads to improved student achievement outcomes

EXTERNAL FACTORS
- State, District, and School Site Contexts
- Teacher and Stakeholder Expectations and Requirements
- Teacher/Substitute shortage
- Requirements from State and Educational Policy

Figure 2: NWRPDP Logic Model

Key Findings from 2020-21 NWRPDP Evaluation Activities:

- Professional development services were conducted in all six districts that comprise the NWRPDP, reaching a total of 1,816 unique educators during 2020-21. 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 6,347. Elementary teachers (*unique* total served = 971) again were the largest educator group served this past year; followed by High school teachers (427); Others, which include substitutes, counselors, paraprofessionals and district personnel (289); Middle school teachers (271); and Administrators (147). Overall, 32% of the approximate 5,751 educators employed in the region (as reported by each district) participated in programs provided by the NWRPDP during 2020-21. Remarkably, these numbers are only slightly lower than 2019-20 participant numbers despite the entire 2020-21 academic year impacts of the COVID-19 pandemic.
- Case study evaluation data reveal a variety of positive outcomes across the 12 NWRPDP 2020-21 case study projects. The diverse foci of case studies this past year included helping teachers develop new Nevada centric resources to meet NVACS-S Science standards; improving culturally responsive teacher pedagogy and parent communication practices; fostering teacher retention through enhancing the student teaching experience; improving teacher civic efficacy through NVACSS trainings in Social Studies; enhancing parent involvement and family engagement through the development of a 3-credit graduate course for teachers; and boosting teacher retention and efficacy through National Board Certification. Evaluation results revealed that general education teachers who participated in five courses to earn their ELAD (English Language Acquisition and Development) endorsement reported significant increases in how second languages are acquired ($<.001$), and teaching and assessment strategies of student language development ($<.001$); improvements in NVACSS computer science knowledge, pedagogy, and student engagement strategies among teachers in six districts ($<.002$); increased self-efficacy regarding National Board Certification and knowledge of research-based pedagogy among members of the National Board Certification training cohort; and improved teacher deep content matter math understanding, knowledge of math standards, and integration of NVACS math standards into classroom pedagogy ($<.001$). The ongoing COVID-19 pandemic continued to disrupt all public educational activities throughout the 2020-21 school year—including NWRPDP professional development and trainings. NWRPDP facilitators, however, flexibly completed their ongoing case study and training activities. Specific pandemic related adjustments to professional development projects and evaluation activities can be found in the case study section of this report.
- Due to the pandemic, professional services this past year were predominately delivered virtually through web-based meeting platforms in the form of in-service classes and workshops. Eighty-four percent of NWRPDP activities were delivered as instructional training opportunities, 10% provided via consultation, and 6% within an

observation/mentoring format. Content focused primarily on the Nevada Academic Content Standards (NVACS) in the areas of Computer Education and Technology (20%), Mathematics (14%), Science (12%), Literacy/English (8%), Computer Science, Social Studies, Science, and STEM. The remaining areas of focus were diverse, and included PreK-Third Grade support, Administrative Support, Teacher Leadership Development, Mindset/SEL, and Family Engagement.

The Case Study Model

Over several years, the NWRPDP has employed a case study model to document professional development training. The NW regional program engages in an ongoing internal evaluation for all training activities, which incorporates case studies from projects throughout the region to document the diversity and wide-ranging impact of professional development activities. Evaluation results are then used to inform practice and help 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—often using a variety of data sources. This ensures that PD is not explored through one lens, but rather through a variety of perspectives, 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 is guided by a logic model framework--developed to link the case study training activities to the short, medium, and long-term outcomes expected from the professional development project.

NWRPDP Case Studies

Case Study 1: The Learning Project

Introduction

"Dan Shareski, who teaches preservice teachers at the University of Regina, wanted to shift the thinking of his students who had mostly experienced a system he refers to as "mind-your-own-business learning," in which they were rarely expected or given opportunities to be self-directed learners. He explains in his blog that he wanted these young educators to experience a different type of learning. His goal was for them to understand not only how to learn but how to articulate the process and express their learning. With this goal in mind, he created the "Learning Project," which required his students to choose something to learn, reflect on how they learn, and then share their process over a given period of time" (Martin, 2018).

In her book, Learner Centered Innovation: Spark Curiosity, Ignite Passion, and Unleash Genius, Katie Martin describes implementing a Learning Project with teachers (2018). She allowed them to pick any topic that interested them, set a goal, and identify resources to support learning, and to use social media to post their progress. Teachers in her group learned that when the focus is narrow, on assigning and grading, students often miss out on the most important part of education, the learning. More teachers need to experience what it feels like to learn something new in this manner. Based on that idea, The Learning Project in-service class was born.

COVID-19 and its impact on teaching and learning presented a huge challenge during the 2019-2020 and 2020-2021 school years. Teachers were feeling overwhelmed by technology and how to reach students working entirely at home or in a hybrid classroom situation. Frustration and exhaustion were at an all-time high. Thus, it seemed like a great time to offer teachers a chance to take a step back from the usual professional learning classes offered on new and innovative teaching techniques and allow them to learn something they have always wanted to learn and, while doing so, gain some perspective on what it feels like to be a learner and the motivation involved in learning.

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 5786 students were enrolled in DCSD during the 2019-2020 school year. The student population is comprised of 68.83% white students, 22.85% Hispanic students, 3.08% American Indian students and 6.01% students who are more than one race. DCSD has an Average Daily Attendance rate of 94.8%. It has a cohort graduation rate of 91.26% as reported in the Nevada Report Card (2020).

Initial Data and Planning

Douglas County School District has been working to modernize learning for students. Their newly developed Instructional Model, focuses on three main components: Positive Culture

comprised of creating connections, fostering curiosity, develop a growth mindset, and being inclusive; Learner Centered comprised of flexibility, innovation, voice and choice, and metacognition; and Responsive Instruction comprised of relevance, formative assessment, personalized learning, and rigor. If teachers are expected to create classroom environments that foster these conditions for learning, they need to experience them as well. The Learning Project offered teachers and other professionals the opportunity to put themselves in the shoes of a learner and to take part in a true learning community.

Delivery of Services

Two sections of the Learning Project were offered for DCSD teachers and other professionals during the 2020-2021. Due to COVID restrictions, the first session met face-to-face and had eleven participants and the second session had twenty-six participants but met virtually. Participants attended seven and a half hours of class and completed an additional seven and a half hours of asynchronous learning working on their projects. Participants created blog entries weekly that were posted to the class blog. Additionally, participants commented on each other's posts weekly. After taking the in-service course, the Learning Project was implemented in several freshman seminar classes as a way to engage students in learning new things.

Participants in the learning project ranged from classroom teachers to administrators to school counselors to specialists. They each selected a topic that they had always wanted to learn how to do. They walked through a series of exercises to create a large list of topics and then to narrow that down based on time available and time of year and topics that felt most relevant to them. Topics chosen included: meditating, cooking, Peloton riding, learning a musical instrument, learning to use a Cricut machine, sewing, drawing, understanding the stock market, budgeting and savings, printmaking, and making various bath products like scrubs and candles.

Results and Reflection

In reviewing the post-reflective data from twenty-six teachers and other school professionals completing the Learning Project, all participants with the exception of one, indicated that their knowledge of their chosen topic increased as a result of participating in the Learning Project. All participants indicated that they learned between some (3) to a great deal (5) as a result of participation. Table 9 summarizes their responses. The table indicates the average of their responses, which shows teachers reporting a gain in knowledge from a 1.62 to a 3.85 average in six weeks. There was a statistically significant improvement in knowledge after the training ($p<.001$).

Table 9: *Post-reflective Survey Data*

How much did you know about your topic PRIOR to starting your project?	How much do you know NOW?	t-score	p-value
1.62	3.85	12.526	$< .001$

As part of the post-reflective survey, participants were asked about what they learned about themselves as a learner. Responses ranged from learning that they needed someone to hold them accountable to learning that they can do hard things. One teacher noted that learning can be frustrating and a break time to regroup helped. Another mentioned feeling intimidated by new learning and procrastinating as a result. Participants were also asked if they had changed anything in their work with students as a result of taking the class. Many participants mentioned that they had started really modeling and discussing a growth mindset with their students because they had experienced what it really felt like to try and have a growth mindset when learning something new. One teacher said, "I am more patient with my students as learners and I have more compassion for how frustrating new learning can be." Another said, "I am more understanding of how hard new learning is on the brain and trying to incorporate time to just sit with new knowledge in my classes." In one comment, the teacher said, "I feel like I can relate to kids who may be feeling overwhelmed more at learning new/more things. I feel like I can be more relatable to them and empathetic."

Conclusion

Results from the Learning Project in-service showed that teachers and other school professionals really enjoyed stepping into the shoes of a learner and trying something new. They enjoyed the freedom to choose their own topic and their survey results indicate that they gained a lot of knowledge in the process. Their blog posts were very thoughtful and their responses to one another were extremely powerful. Their final presentations of their work modeled the successes and struggles of learning something new. Most participants felt like they preferred meeting face to face rather than virtually, which was out of our hands at the time. The Learning Project will continue to be part of the professional learning offered to teachers and other school professionals in the future.

References

Martin, K. L. (2018). *Learner centered innovation: Spark curiosity, ignite passion and unleash genius*. IMPress.

Nevada Report Card. (2020). Retrieved from www.nevadreportcard.com

Figure 3: *Case Study 1: The Learning Project Logic Model*

Case Study 1: The Learning Project- Logic Model

Situation: What does it feel like to learn something new? What does it feel like to have a growth mindset about learning? In this case study, teachers were given the opportunity to learn a new skill and to blog about their learning. An additional group of teachers designed their own professional learning using the Learning Project Model to focus on the DCSD Instructional Model.

Inputs	Outputs		Outcomes -- Impact		
	Activities	**Participation**	**Short**	**Medium**	**Long**
RPDP trainer	In-service class: six weeks long, 15 hours • learning bucket list • learning focus • target a skill within the focus • blogging results New teacher trainings with instructional learning project Freshman seminar learning project	12 teachers and specialists in fall in-service 25 teachers in spring 65 teachers in DCSD teacher academy, years 1 and 2 Freshman seminar students	Increased growth mindset and goal setting Increased knowledge of safe blogging practices	Increase implementation of engaging teaching practices.	Increased student engagement in hybrid learning Increased graduation rate Increased grade progression rate
In-service/salary credit					
Learning Project model					
DCSD district level leadership support					
Substitutes					
Budget			**Measures:** Qualitative feedback; Post-reflective Survey	**Measures:** Student and Teacher post-reflective Surveys	**Measures:** School, district, and state existing data
Facilities for trainings					
Resources: Learner Centered Innovation by Katie Martin					

Assumptions: Attendance at in-service classes, participation in class blogs, developing a growth mindset and an understanding of the learning process, theory of change that teacher training will lead to teacher efficacy and improved pedagogy

External Factors: District data, budget, and initiatives

Case Study 2: Nevada CONNECTS - Nevada Communities Offering Networking and Education: Connecting Teachers and Experts

Introduction

Nevada CONNECTS (Nevada Communities Offering Networking aNd Education: Connecting Teachers and expertS) is a collaborative project between all three Regional Professional Development Programs (RPDP), the Nevada State Science Teachers Association (NSSTA), and participating Nevada school districts. This project aims to provide teachers and STEM professionals across the state with a space to collaboratively develop and align Nevada-centric resources to meet the Nevada Academic Content Standards in Science (NVACS-S).

One essential component to improve science education in Nevada and impact student achievement is equitable access to high-quality, standards-aligned materials. Currently, there is a lack of already-made materials for Nevada teachers and students in our schools. Developing these resources requires opportunities for collaboration. Nevada CONNECTS provides a pathway to addressing this challenge by supporting Nevada teachers in developing assessment performance tasks aligned with Nevada standards in collaboration with Nevada STEM professionals (Subject Matter Experts; SMEs). The goal of Nevada CONNECTS is to engage Teachers in professional learning that will allow them to develop a grade specific NVACS-S aligned, locally-based, performance task with the help of a partnered STEM Professional who will provide context, science knowledge expertise, and data surrounding a specific Nevada-based science phenomenon. These performance tasks will be available for all K-12 teachers in Nevada as examples of high-quality tasks for teachers to use and adapt as needed for their students.

Background

Three of the four Key STEM Indicators for our state, as identified by the Nevada OSIT office, directly connect with student test scores in Science (and Math). According to the Nevada Report Card, only 24.6% of fifth grade students and 36.8% of eighth grade students are proficient in Science. Test data from 2019, shows only 19% of students met the College Readiness Benchmarks on the ACT Science test. This suggests several things could be happening to result in such low achievement scores across the state, including misaligned assessments to measure student achievement. As a result, the developers of the project sought to determine if developing assessment tasks closely aligned to the NVACS-S would better measure student achievement across the state. Including teachers as developers would bolster capacity across the state as well, and an additional variable was to include localized topics around which to develop the performance tasks, with the idea that students would be more engaged in the tasks if they were focused on events that actually take place in our state, and even more closely in the region the student lives. By including professionals in STEM careers to provide real world science events that they are studying and working with in Nevada, the tasks would be relevant to students. However, the STEM professionals do not have the background knowledge to develop tasks geared at determining student achievement in NVAC-S. Although the project was a collaboration

between the Nevada State Science Teachers Association and the Regional Professional Development Program Science trainers for the state, who could develop the tasks on their own, it was important to include teachers across the state to be the developers of the tasks. This would provide teachers with a deeper understanding of the NVACS-S, as well as promote involvement in shifts at the school and district levels.

Project Planning and Participants

The initial planning for Nevada CONNECTS occurred in the fall of 2020 between the Nevada State Science Teacher Association (NSSTA), the Regional Professional Development Program Science trainers for the Northwest (NWRPDP), and South (SNRPDP) regions, and Clark County School District Professional Learning Department (CPD). All districts across the state were offered a chance to participate in the planning, but due to the pandemic, most offered support but could not directly help with project development. The leadership team consisted of three people who served in multiple roles within each group: one member was a NSSTA Board Member and CPD employee, one was from NWRPDP and served as a NSSTA Board Member, and final was from SNRPDP and was a NSSTA member.

The leadership team met weekly between October 2020 and January 2021 to develop the goals, objectives, deliverables, associated costs, and project outline. The planning began with identifying elements that would be necessary for teachers to develop NVACS-S aligned performance tasks. These elements included (1) phenomena and scenario development, (2) tasks and development, (3) fairness and equity, (4) NVACS-S instruction and assessment shifts, (5) facets of knowledge, and (6) evidence of student learning.

STEM Professionals
Recruitment of STEM professionals occurred in November 2020 by word of mouth or direct association with the project team, as well as through social media. A virtual Q&A session was hosted for STEM professionals in November 2020 and by January 2021 with the 35 STEM professionals who volunteered to work with the project. These volunteers were diverse and came from careers in multiple science areas including meteorology, geology, life science, space sciences, and applied sciences. In January 2021, the project team met with each STEM professional individually for 15 minutes to determine the science they use in their everyday careers and to get a sense of where they fit in the k-12 science spectrum. Next, the project team developed a spreadsheet aligning each STEM professional to grade band core ideas based on the 15-minute interview. Most of the STEM professionals were using scientific ideas daily that could span the k-12 spectrum, with developmental adjustments, so the next step was to pair each STEM professional with a teacher.

Teacher Developers
The recruitment of teachers as Teacher Developers began in January of 2021 through email lists that the project team held, as well as through social media and district leads across the state. Initially, the hope was to have 13 teachers, one from each grade level k-12, from each RPDP region (NNRPDP, NWRPDP, and SNRPDP) participate. This would lead to the development of three performance tasks for each grade level. However, it became clear that was not going to be

possible due to a variety of circumstances. A total of 54 teachers applied to the project across all grade levels and science disciplines, and the leadership team had to determine who to eliminate fifteen teachers. Throughout the first month of teacher developer implementation (mid-February through mid-March) several teachers stepped down from the project, leaving the final teacher developer population at 31. A timeline for synchronous and asynchronous learning was developed for Teacher Developers (*table 10*), with associated asynchronous work for each session.

Table 10: *Teacher professional learning sessions*

- **Introduction Session** (1 hour - 3/2/21, 5:00-6:00 p.m)
- **PL1 -Phenomenon Scenario Development** (5 hours - Saturday, 3/6/21, 8:00 a.m.-1:30 p.m.)
- **PL2 - Peer Review of Scenario** (**K-2** 4/12/21; **3-5** 4/13/212; **6-8** 4/14/21; **9-12** 4/15/21)
- **PL3 - Analyzing the facets of the claim to be assessed** (3 hours - 4/20/21, 4:00-7:00 p.m.)
- **PL4 - Making Fair & Equitable Tasks** (3 hours - 4/27/21, 4:00-7:00 p.m.)
- **PL5 - Evidence of Student Learning** (3 hours - 5/4/21, 4:00-7:00 p.m.)
- **PL6 - Peer Review using the NGSS Task Screener** (5 hours - Saturday, 5/15/21, 8:00 a.m.-1:30
- **Final Celebration with Teachers and SMEs** (1 hour - 6/15/21, 1:00-2:00 p.m.)

Delivery of Services

The COVID pandemic led to an unintended positive effect for STEM professional learning across the state of Nevada. Whereas collaboration for science education across the state had been spotty in the past, the ability to use digital tools to plan, meet, and deliver professional learning provided an avenue to develop statewide initiatives and support to all districts and populations across the state. Although the pandemic eliminated in person professional learning sessions, it provided ample opportunities to shift practices to virtual trainings. The leadership team met virtually every week and worked collaboratively to expand resources with teacher developers and STEM professionals. This format for sharing work enabled the leadership team to review the work being done asynchronously by teacher developers instead of having to wait until the next synchronous training, thus eliminating wait time for review and feedback to teacher developers.

Conducting virtual synchronous learning sessions also allowed teacher developers to participate in diverse formats using virtual tools such as PearDeck, science simulations, videos, and more, taking a training from "sit and get" to more interactive formats. Teachers worked collaboratively with grade level peers to implement ideas from professional learning sessions, an additional benefit that without the virtual delivery format would have left teachers working only with people from their region.

Two live professional learning sessions were conducted with teacher developers and STEM professionals. All other live sessions were specific to either STEM professionals or teacher developers to ensure the content presented was specific and meaningful to each group. Professional learning sessions for the teachers were conducted out of contract hours (either after school or during the weekend) in three- or five- hour chunks. Topics covered included in-depth standards, instruction, and assessment aligned to current research in science education and the

Next Generation Science Standards (NGSS Lead States, 2013). Deep dives into access and equity, facets of knowledge, task development, and refinement were done iteratively for teachers to be able to revise their tasks.

Professional learning sessions specific to participating STEM Professionals also were conducted through virtual meeting platforms (either Zoom or Google Meets). These sessions tended to be short one-hour sessions conducted during a typical lunch time (either 12:00pm-1:00pm or 1:00pm-2:00pm) due to the work schedule of the STEM participants. These sessions also were recorded for STEM professionals who could not make the live session. Shared folders through the Google Suite also were provided to STEM professionals to collaborate with the leadership team and the teacher who they would be paired with. STEM Professionals were provided trainings on standards, instruction, and assessment in formal classrooms, as well as needs and research behind the project direction.

The STEM professionals' main job was to provide a Nevada specific scenario that they work with (habitat protection, mine reclamation, water protection, energy production, weather patterns, climate models, etc.) and provide teachers with accurate scientific background and data from that scenario. Many of the STEM professionals work for government agencies, which allowed them to easily share data they collected during their regular work. For STEM professionals who were privately employed, sharing permissions were provided prior to providing any data from their jobs to ensure the resources could be available publicly to any teachers in Nevada. Teacher developers could then use those ideas, scenarios, and data to develop the actual performance task materials that included student facing materials, teacher materials, and scoring guides. STEM professionals checked the task for scientific accuracy at each iteration of the project. All products developed through the project will be licensed under Creative Commons as well to ensure access for all teachers, as well as posted to RPDP and Nevada State Science Teachers Association websites.

Data Collection and Analysis

At this point in the project, anecdotal notes have been collected from professional learning sessions with both the STEM professionals and teacher developers. Quantitative data from a survey for the teacher developers is discussed in this section. To determine the effectiveness of the professional learning sessions, a ten-question, eight-level semantic survey was developed as a Google Form on the topics presented in the professional learning sessions. Five of the questions were reverse coded to help eliminate participants from just selecting the right most answer choice every time. The statements for the survey were collected from well-known and utilized work developed through NGSS Lead States (2013). Teacher participants took the survey at the beginning of the first session as a pre-survey, and at the end of the session as a post-survey. The results were statistically analyzed using a Mann-Whitney U to determine changes to teachers' thoughts about the topics resulting from the Professional Learning sessions. Thirty-one teachers across kindergarten through twelfth grades, in all science disciplines took the survey. Results indicate significant gains in teacher understanding of the components of performance tasks to be

more aligned with the ideas presented during the professional learning sessions (see Table 11). The only two questions that teachers did not show significant changes were "*The three-dimensions of a performance expectation are assessed separately in a performance task*" and, "*Rote knowledge is required to answer significant portions of the performance task*".

Table 11: *Results of Teacher Learning Survey*

	M_{pre}	M_{post}	W	P	Rank-Biserial Correlation
1. A performance task needs a phenomenon.	5.839	7.793	59.00	$< .001*$	0.869
recode 2. Performance tasks should focus on generally observable occurrences.	2.871	1.966	650.00	0.002*	0.446
recode 3. Students should be able to answer significant portions of a performance task without using the task scenario.	4.613	5.552	311.00	0.039*	0.308
4. All prompts in a performance task should link to the scenario presented in the task.	5.742	6.517	303.00	0.027*	0.326
5. Phenomena are a critical predictor of whether a performance task can elicit evidence of three-dimensional learning.	5.871	7.000	267.50	0.005*	0.405
6. Students have to use at least one science and engineering practice to complete a performance task.	6.194	7.207	248.50	0.002*	0.447
recode 7. The three-dimensions of a performance expectation are assessed separately in a performance task.	5.194	5.207	420.50	0.670	0.065
recode 8. Rote knowledge is required to answer significant portions of the performance task.	6.161	6.586	323.50	0.054	0.280
9. Performance tasks need to contain multiple components.	5.613	7.172	223.50	$< .001*$	0.503
recode 10. A phenomenon can be the ""hook"" of a task, and does not need to be central to student sense-making.	3.258	2.483	596.00	0.027*	0.326
Note. Mann-Whitney U test. * indicates significant change from pre to post survey					

Results and Conclusions

Although this is a pilot study for an ongoing project, several conclusions can be drawn from the results of the data collection and analysis. It is clear that STEM professionals truly want to be involved in formal K-12 education. The STEM professionals continually made time during lunch hours, and after work to meet with the leadership team and connect with their teacher developer. Challenges remain as to how best to meaningfully involve these professionals. Nevada CONNECTS has served to introduce this population to the formal education system, and has provided some insight into the challenges educators face daily, including standards, school and district commitments, instructional materials, and teacher content knowledge to name a few. Many of the STEM professionals struggled to understand how science is taught and assessed in classrooms and why those changes were made (less content focused, more sense-making focused), and wanted to incorporate fun hands-on activities into the performance tasks that had no links to real-world phenomena or grade-level standards. This format for involving STEM professionals in the educational system has been used for years with no increase to student learning or teacher capacity.

Teachers also struggled with time commitments. With the ever-changing educational landscape this year, many teachers found themselves committing to more than they could do. The project took about 50 hours of teachers' time outside of contract hours over just about two months. Many teachers had additional coursework and projects they were involved with, and more than once teachers reached out with news about sick family members. Even with the struggles surrounding the development of the tasks, teacher developers did take away valuable knowledge surrounding current practices and strategies for assessing student learning in STEM. Teachers did significantly learn about performance tasks as measured by the survey, including what they were, what needed to be included in them to align to the standards, and shifts to align the assessment with instruction. However, when it came to developing their own performance task many struggled to find time to meet with their partnered STEM professional and collect the pertinent information to develop the actual task. Additionally, this was the first time many of the teachers had worked to develop a performance task, adding to the cognitive load required to produce a product. More time in small groups may help teachers to focus their efforts and provide time for feedback from the leadership team in real time.

A lack of communication between the teacher developers and the STEM professionals led to the biggest problems that arose. Both sides had participants who procrastinated. The leadership team provided suggested timeframes to complete the work, however often these suggestions were not headed leaving many struggling to complete work on time. This is not an uncommon problem, but still one that needs to be addressed in future work. More planned work times with the leadership team in attendance as well as the STEM professionals and partnered teacher developers could help reduce this problem, even if these times are just "office hours" or weekly check-ins.

Overall, the project's first year had both successes and challenges. Teacher developers were excited to be involved in a statewide project, even if they struggled to complete the assigned task. Many saw the value in the developed performance tasks and liked learning during the Professional Learning Sessions. The upcoming school year also will provide time for more focused work with the performance tasks for those who choose to continue working with the project. The STEM professionals enjoyed sharing their work with teachers, without the requirement of going into a school setting and teaching. This fit for STEM professionals could be an avenue to continue exploring; having them partner to share their knowledge and work with those who can translate it into classroom instruction and assessment. The leadership team is currently looking at the outcomes for both the teacher developers and STEM professionals and will be making changes based on this year of implementation.

References

National Academies of Sciences, Engineering, and Medicine. (2015). Science teachers' learning: Enhancing opportunities, creating supportive contexts. Washington, DC: The National Academies Press. Science teachers' learning: Enhancing opportunities, creating supportive contexts.

National Academies of Sciences, Engineering, and Medicine. (2020). Teaching K-12 science and engineering during a crisis. Washington, DC: The National Academies Press. [Teaching K-12 science and engineering during a crisis](#).

Mitchell B. & Potts B. (2020, October 21). The state of STEM in Nevada [Presentation]. Nevada STEM Virtual Summit.

NGSS Lead States. (2013). Next generation science standards: For states, by states. Washington, DC: The National Academies Press.

Figure 4: *Case Study 2- Nevada CONNECTS-Nevada Communities Offering Networking and Education: Connecting Teachers and Experts-Logic Model*

Case Study 2: Nevada CONNECTS - *Nevada Communities Offering Networking and Education: Connecting Teachers and Experts-* **Logic Model**

Situation: One essential component to improve science education in our state and impact student achievement is equitable access to high-quality, standards-aligned materials. Currently, there is a lack of already-made materials for Nevada teachers and students in our schools. Developing these resources requires opportunities for collaboration. Nevada CONNECTS provides a pathway to addressing this problem by supporting Nevada teachers in developing assessment performance tasks about a Nevada scenario with support from Nevada STEM professionals.

Inputs	Outputs		Outcomes -- Impact		
	Activities	Participation	Short	Medium	Long
• 39 teachers in K-12 grades • 39 STEM professionals from, across the state • Stipend of $1500 for each participating teacher • Professional learning for STEM professionals provided by RPDP, Nevada State Science Teachers Association (NSSTA) • 50 hours of Professional Learning for teachers provided by RPDP, NSSTA • Virtual setting (Zoom)	• Professional Learning for STEM Professionals focusing on standards, phenomena in school settings. • Professional learning for teachers on standards, phenomena, task development • Task development by teacher and STEM professional and feedback from RPDP/NSSTA trainers • Development of scenario and phenomena for 39 Nevada-centric performance tasks	• 39 teachers in k-12 grade across Nevada 50 hours of Professional Learning (synchronous) and task development (asynchronous)s • 39 STEM professionals from multiple companies across Nevada (8 hours synchronous), varied times for work with teacher partner • RPDP science trainers (from NWRPDP and SNRPDP) • NSSTA trainers	• Increased collaboration between educational communities and STEM industry professionals • Increased understanding of 3-dimensional assessment for NGSS **Measures:** • Synchronous meetings between STEM professional and partner teacher • Pre/post survey on NGSS	• Increased use of tasks in classrooms and data collection for further refinement. **Measures:** • Feedback card when task is downloaded and used	• Increased student performance based on science tests in 5th, 8th, and high school. • Increased enrollment in science courses in high school and post-secondary institutions • Increased workforce in NV STEM careers **Measures:** • Enrollment numbers for upper level science coursework • Standardized test results

Assumptions: Teachers have a basic understanding of the NGSS at their grade level, however the curriculum adopted at the state level provides limited ability to evaluate student learning aligned to the NGSS performance expectations. Participating teachers and STEM professionals value the collaboration between the groups and will ensure the time provided to work on this project is meaningful for everyone involved, resulting in a product that will be useful to teachers across the state.

External Factors: District initiatives that will impede the ability of the teachers to spend time focusing on developing their task. Workload for STEM professionals. Since all of them are volunteering their time with no compensation, their career takes a front seat.

Case Study 3: Cultivating Culturally Responsive Teaching through Multicultural Education

Introduction

As of July 1st, 2019, educators in Nevada are required to complete a course in Multicultural Education for license renewal. There is an urgent need to build the cultural competency in educators when considering the growing diversity of classrooms and the world around them and as a mending of the previous marginalization of various groups in the past. Historically, dominant classes and cultural groups have structured and administered curriculum in education resulting in a lack of representation surrounding the accomplishments and contributions of people of color, people within the LGBTQ+ community, people with disabilities, people who struggle with poverty, etc. One of the many problems that have resulted from this omission is the growing number of students within these groups that do not see themselves within the curriculum. Furthermore, all students (no matter their category) were only receiving a limited view of the world via a curriculum that only highlighted the stories of a select group of individuals. Additionally, traditional teacher education programs have failed to train their future teachers to effectively and empathetically engage students that come from a variety of backgrounds and circumstances. This speaks to the need for culturally responsive educators. As Sharroky Hollie explains, culturally responsive teaching responds to students needs by considering cultural and linguistic factors within their worlds (2018). Therefore, there has been a new focus on building cultural competency within education.

Due to the necessities set forth by our students and by the Nevada Department of Education licensure requirements, the Northwest Professional Development Program created a course titled *Multicultural Education: Culturally Responsive Teaching Across Contexts* to address these needs. The goal of this course was to build the cultural capacity of educators in Nevada by providing them strategies to respond to the variety of circumstances in which their students live while also helping them to identify and develop curriculum that better represents and connects to their students.

Instructional Context

Participants of the course included 32 educators from across Nevada. The largest faction came from Washoe County School District (31.3%), next was Clark County School District (25%), Carson County School District and Churchill County School District (15.6%), Lyon County School District (9.4%), and the remaining participants were from Douglas County School District. Of these participants, 46.9% worked at the elementary level while 46.9% worked in secondary schools. The remaining participants either worked with a mixed population or with adult learners.

Participants received three graduate credits through Southern Utah University (SUU) upon completion of the course in addition to meeting the requirement for license renewal.

Initial Data and Planning

This course was created in the spring of 2020 and launched in the Fall of 2021. Participants were recruited through use of the NWRPDP website and school district leaders were contacted by NWRPDP to notify their educators that the course was available. Participants registered for the course through NWRPDP and through SUU.

Two NWRPDP trainers participated in their own professional learning and research in multicultural education before implementing the course. Additionally, the Equity and Diversity Department for the Washoe County School District was consulted and provided guest speakers for the course.

Delivery of Services

The Fall session of *Multicultural Education: Culturally Responsive Teaching Across Contexts* began in August and ran through October. Courses were held virtually on consecutive Wednesday evenings in 2-hour blocks. Additionally, participants completed weekly reading and journal assignments in addition to responding to discussion board prompts using Canvas on SUU's website. For each virtual session, participants engaged in learning aimed at cultivating best practices for culturally diverse students. Participants also spent much of the virtual sessions engaging in activities where they were asked to reflect on their own teaching practices and situations.

Participants completed weekly reading assignments and were asked to apply what they read in reflective journal entries. They also completed field experience assignments where they were asked to assess the presence of culturally responsive material within their classrooms and curriculum and to critique ways in which they might be able to make their classroom environments more culturally responsive.

Results and Reflection

At the final class in October, participants were asked to reflect on their growth of knowledge and efficacy within culturally responsive teaching through a retrospective survey. Using a Lickert scale rating of 1 to 5, teachers assessed their knowledge and efficacy before and after the course on the following six topics: 1) privilege (by race, age, gender, ability, etc., 2) conscious and unconscious bias, 3) culturally/linguistically responsive teaching strategies, 4) assessing bias in standards and curricular materials, 4) discussion and collaboration strategies, 5) communication with students. Results indicate the average gains in the participants understanding of culturally responsive teaching topics and strategies. The results from the post-reflective assessment are displayed in Table 12. All areas show increases in the participant's knowledge after completing the course. Additionally, participants were asked about whether they planned to continue utilizing culturally responsive teaching practices going forward. Again, a Lickert scale rating of 1 to 5 was used to assess the question, *What is the likelihood that you will implement the skills and concepts learned in this training into your work with students and families?* These responses are displayed in Table 13 and results indicate that most participants are very likely to continue these practices.

Table 12: *Pre and Post Training Results (Rating Scale of 1 to 5 where 1 is No Knowledge and 5 is Extensive Knowledge).*

Question	Mean Before Training	Mean After Training	*t*-score	*p*-value
Privilege (by race, age, gender, ability, etc.)	3.16	4.47	-8.643	<.001
Conscious and unconscious bias	2.94	4.47	-9.464	<.001
Culturally/linguistically responsive teaching strategies	2.59	4.38	-8.930	<.001
Assessing bias in standards and curricular materials	2.44	4.19	-9.453	<.001
Discussion and Collaboration Strategies	2.91	4.44	-9.464	<.001
Communication with students	3.50	4.59	-6.664	<.001

Table 13: *Implementing Skills and Concepts of Culturally Responsive Teaching*

Question for Participants	1 (Not likely)	2	3	4	5 (Very likely)
What is the likelihood that you will implement the skills and concepts learned in this training into your work with students and families?	0%	0%	6.3%	25%	68.8%

Participants also were encouraged to provide reflective comments on their experience taking the course. Below are several of their comments in response to the following question: What did you appreciate most about this course?

- The knowledge that I learned from the course.
- I appreciated that it helped me look at myself and my practice not with an accusatory lens but with the optic that I am on the right track as long as I strive to better myself and my practice.
- It was an eye-opening experience- I have a lot of work to do and a lot of biases!
- Having conversations that took us out of our comfort zones.
- This class really opened my eyes to how I can successfully implement culturally responsive teaching in my speech groups.
- Learning about how a student's background can be a critical part of how they learn.
- The place and respect to have an uncomfortable conversation.

In addition to the retrospective survey, participants completed NWRPDP's end of training evaluation. Using a Lickert scale rating of 1 to 5, participants evaluated the characteristics of the trainings. Results indicated that the participants were positively impacted by the training and that it provided valuable learning and increased their teaching efficacy.

Table 14: *NWRPDP Training Evaluation Averages. Scale 1-5. (1= Not at all, 5= To great extent)*

Characteristics of Activity	Average Rating
1. The activity matched my needs.	4.42
2. The activity provided opportunities for interactions and reflections.	4.78
3. The presenter/facilitator's experience and expertise enhanced the quality of the activity.	4.78
4. The presenter/facilitator efficiently managed time and pacing of activities.	4.74
5. The presenter/facilitator modeled effective teaching strategies.	4.79
6. The activity added to my knowledge of standards and subject matter content.	4.37
7. The activity improved my teaching skills.	4.42
8. I will use the knowledge and skills from this activity in my classroom or professional duties.	4.47

Characteristics of Activity	Average Rating
9. The activity will help me meet the needs of diverse student populations (e.g., gifted and talented, ELL, special ed., at-risk students).	4.68

Conclusion

A nation-wide focus on culturally responsive teaching across a variety of educational contexts is needed now more than ever. The end of the 2019-2020 school year and the 2020-2021 school year have inundated our students with troubling events around the world, in our country, and even in their own communities. It is important for our students to feel seen and heard when they come into our classrooms (whether that be in-person or virtually). Teachers need to be prepared to instruct their pupils in a way that is culturally knowledgeable, relevant, and empathetic. This focus on culturally responsive teaching asks our educators to see their students as the individuals they are and to respond with strategies and practices that are best equipped to engage each particular student. *Multicultural Education: Culturally Responsive Teaching Across Contexts* was able to deliver this much needed training through the extensive research, discussion, and reflection completed by the participants. Through this work, participants were able to expand their knowledge of the needs of various student groups and also implement strategies that make their classrooms places of inclusion. This leads to students feeling they belong in the classroom while learning from each other and the diverse experiences in the room. The growth in these areas is showcased in the survey responses of participants.

Multicultural Education: Culturally Responsive Teaching Across Contexts has continued into two additional course offerings. Instructors are planning on offering three more opportunities for participants next school year.

References and Resources

Hollie, Sharroky. *Culturally and Linguistically Responsive Teaching and Learning: Classroom Practices for Student Success*. Shell Education, 2018.

Mayfield, Vernita. *Cultural Competence Now: 56 Exercises to Help Educators Understand and Challenge Bias, Racism, and Privilege*. ASCD, 2020.

Minor, Cornelius, and Kwame Alexander. *We Got This: Equity, Access, and the Quest to Be Who Our Students Need Us to Be*. Heinemann, 2019.

Pollack, Terry M. "The Miseducation of a Beginning Teacher: One Educator's Critical Reflections on the Functions and Power of Deficit Narratives." *Multicultural Perspectives*, vol. 14, no. 2, 2012, pp. 93–98., doi:10.1080/15210960.2012.673318.

Figure 5*: Case Study 3: Cultivating Responsive Teaching through Multicultural Education Logic Model*

Case Study 3: Cultivating Responsive Teaching through Multicultural Education- Logic Model

Situation: Regional Multicultural Education Course
Course will explore the expectations of teachers in regard to state and district requirements and expectations for implementation. Course fulfills requirement for teachers who need the hours for recertification.

Inputs	Outputs		Outcomes -- Impact		
	Activities	Participation	Short	Medium	Long
• Use of Canvas on-line forum for assignments and discussion • 45 hours of instructional time Three graduate credits from SUU • *Culturally and Linguistically Responsive Teaching and Learning* by Sherroky Hollie and other readings	• Teachers discuss assigned text and respond to text in Critical Response Journals • Teachers practice culturally responsive strategies • Teachers brainstorm and have dialogue about implementation • Teachers actively listen to guest speakers and reflect on message • Teachers Assessment of Teacher Growth and Understanding	• K-12 Teachers • Social Workers • Speech Pathologists • Substitute Teachers • Three graduate credits that address state requirement	Learning • Increased Pedagogical Knowledge Emphasizing the importance of cultural and linguistic responsive pedagogy • Increased Teacher Confidence and Efficacy **Measures:** • Case Studies • Post-reflective surveys	Action • Increased use of culturally relevant communication practices • Increased Teacher Collaboration/ Development of culturally and linguistic responsive strategies **Measures:** • Coaching feedback • Case Studies	• Increased Student achievement • Increased Graduation rates • Increased Family Partnerships **Measures:** • Parent and Student Climate Data

Assumptions: Training will increase student achievement and be evident to the administration during the evaluation process. Continued funding.

External Factors: Time and student ability, Administrator expectations, State, District, and Social Site Contexts

Case Study 4: Integrating Eight Mathematical Practices through Instructional Routines

Introduction

 "…having students transition from "answer-searching" to mathematical reasoning is a process and does not happen overnight (O'Conner, Dearborne, and Casa, 2021, p. 188).

The Common Core State Standards for Mathematics include both Standards for Mathematical Content and Standards for Mathematical Practice. The Standards for Mathematical Content define what students should understand and be able to do in each grade level or high-school content area in their study of mathematics. The Standards for Mathematical Practice set forth expectations for how students engage with mathematical content. Developed from National Council of Teachers of Mathematics process standards and the five strands of mathematical proficiency, the eight Standards for Mathematical Practice outline ways in which children can develop and demonstrate a deep understanding of and capacity to do mathematics (Van de Walle, Lovin, Karp, & Bay-Williams, 2014).

Instructional Context

Prior to the beginning of the 2019-2020 school year, two NWRPDP trainers worked to create mathematical professional development focused on implementing the Standards for Mathematical Practice. This professional development opportunity was offered to staff members during the 2019-2020 school year at two rural schools that the trainers had previously worked with. At the end of the training, there were major changes in teacher beliefs about math instruction. As teachers practiced the routines, classroom instruction shifted to include more student discussion of ideas and understanding of the concepts behind the problems. The students also became more independent as problem-solvers. The teachers were pleased with what students had accomplished and they were eager for more training with the math practices. The NWRPDP trainers and administrators of the two schools decided an additional year of training with a continued focus on additional math practice routines would be beneficial to the members of the original course. In addition, plans were made to re-create the original training to include all interested educators in the Northwestern region during the 2020-2021 school year.

At the beginning of the 2020-2021 school year, 13 of the 19 members of the original course returned for a second year of training on math practice routines. Eight teachers from four different school districts enrolled in the first year of the course to begin a study of the math practices.

Initial Data and Planning

Based on observational data and student test data, it was decided to continue to focus on the eight Standards for Mathematical Practice contained within the Nevada Academic Content Standards (2010) and routines for implementing them in order to create a shift in instructional practice by the teachers. The book *Routines for Reasoning: Fostering the Mathematical Practices in All*

Students (Kelemanik, Lucenta, & Creighton, 2016) continued to be an excellent resource to assist teachers with strategies and concepts for engaging all students in utilizing the practices. The focus of the both first-year and second-year training would be based on implementation of the principles and instructional routines recommended in the book.

Delivery of Services

Teachers in both cohorts were interested in taking a course that would provide them with graduate credit for the time spent in class. One NWRPDP trainer had an affiliation with Southern Utah University so a two-credit course for the second year class and a three credit course for the first year class were created, applied for, and granted from that institution.

The courses were setup with six whole group meetings to discuss the readings, to learn about and practice the routines, and to begin planning and refining the use of the routines in the classroom. In addition, there were smaller group meetings in between class meetings to collaboratively plan and revise lessons based on the core elements of the instructional routines. As a graduate level course, participants were to do required readings, participate in observations, and complete related tasks as part of the course. As an instructional tool, each student received a copy of the book *Routines for Reasoning: Fostering the Mathematical Practices in All Students* (Kelemanik, Lucenta, & Creighton, 2016). In addition, students in the first year course received a copy of *Teaching Student Centered Mathematics: Developmentally Appropriate Instruction* (Van de Walle, Lovin, Karp, & Bay-Williams, 2014).

The first three class sessions for the first-year course focused on understanding the Core elements of instructional routines (articulation of a math practice goal, individual think time, partner work, full group discussion of ideas, final math practice reflection, access through multiple modalities and multiple representations, liberal use of math practice focused prompts) and how they support the Standards for Mathematical Practice. The initial three sessions also introduced a routine called the Three Reads which focused on math practice one: Make sense of problems and persevere in solving them. The final three course sessions were focused on adding an additional routine to teachers' repertoires called Capturing Quantities which focuses on math practice two: Reason abstractly and quantitatively. Participants also had the opportunity to discuss implementation of the routines with mentors who were teachers from the second-year class. The second-year course was structured similarly with the first three class sessions focused on adding the Connecting Representations routine which focused on math practice seven: Look for and make use of structure. The final sessions focused on adding the Recognizing Repetition routine which focuses on math practice eight: Look for and express regularity in repeated reasoning.

The course was structured for participants to share their successes and collaboratively discuss their work. All participants participated in a classroom observation and follow-up coaching session around their work with the routines at the end of the first three course sessions. During the small group meetings, participants collaborated on lesson planning and making sense of the routine. To assist with common understanding of the routines, teachers volunteered to record their classrooms during March to share their collaboratively planned lessons in a lesson study

fashion where the collaborators were able to observe the lesson being implemented. Five of the eight participants in the first-year cohort completed the course. Those who dropped the course cited various reasons including heavy workload or health issues. All thirteen participants in the second–year cohort completed the course.

Results and Reflection

All of the participants who were enrolled in the Routines for Reasoning course were observed by the NWRPDP trainers as they were implementing the routines during in the fall and again in the spring. After the observations, the trainer and participant discussed elements of the routine that had been observed as well as what had gone well and if the participants felt additional support was needed. The trainers were looking for evidence of some of the key elements of the routines such as the purpose of each read during three readings of a problem as well as having a math practice goal related to the routine being implemented, individual think time, partner think time, full group discussion, and a final reflection. The teacher and trainer met after the observation to discuss what went well and what parts were challenging. One comment from a participant was that "the observations were challenging, but by the end of the class they turned out to be one of the most valuable aspects!"

At the completion of the course, all participants were given a post-reflective survey to show how they felt they had grown in seven areas related to The Nevada Academic Content Standards from the beginning of the course to the completion of the course. The areas were general knowledge of the eight standards for mathematical practice, routines as a predictable frame for engaging with mathematical content, math practice one (make sense of problems and persevere in solving them), math practice two (reason abstractly and quantitatively), math practice seven (look for and make use of structure), math practice eight (look for and express regularity in repeated reasoning), and deeper content knowledge around the standards. Teachers rated themselves on these six statements on a scale of one to five with one being poor and five being excellent. The results are shown in the table below and in the narrative following.

Table 15: *Post Reflective Survey Data*

	Before	After	Increase	*t*-score	*p*-value
General Knowledge of the 8 standards for mathematical practice	2.38	4.25	1.87	-9.303	< .001
Routines as a predictable frame for engaging with mathematical content	2.60	4.50	1.90	-7.250	< .001
Math Practice 1	2.38	4.63	2.25	-7.997	< .001
Math Practice 2	1.75	4.44	2.69	-15.267	< .001
Math Practice 7	1.45	3.91	2.46	-9.925	< .001
Math Practice 8	1.73	4.00	2.27	-8.480	< .001

Deep content knowledge around NVACS for math	2.93	4.27	1.34	-5.701	< .001
Teacher will use knowledge from this activity in classroom teaching		4.93			

   The self-rating for "general knowledge of the eight Standards for Mathematical Practice" changed from a mean of 2.38 before the class to 4.25 after the class which was an increase of 1.87. This has a t-score of −9.303 with a corresponding p-value of < .001. The self-rating for "routines as a predictable frame for engaging with mathematical content" changed from a mean of 2.60 before the class to 4.50 after the class which was an increase of 1.90. This has a t-score of −7.250 with a corresponding p-value of < .001. The self-rating for "Math practice one--Make sense of problems and persevere in solving them" changed from a mean of 2.38 before the class to 4.63 after the class which was an increase of 2.25. This has a t-score of −7.997 with a corresponding p-value of < .001. The self-rating for "Math practice two—Reason abstractly and quantitatively changed from a mean of 1.75 before the class to 4.44 after the class which was an increase of 2.69. This has a t-score of −15.267 with a corresponding p-value of < .001. Participants in year two of the course were the only participants who rated themselves on Math practices 7 and 8, as that was the focus of the year two class.   The self-rating for Math practice seven—Look for and make use of structure changed from a mean of 1.45 before the class to a mean of 3.91 which was a 2.46 increase. This has a t-score of -9.925 with a corresponding p-value of < .001. The self-rating for math practice eight- Look for and express regularity in repeated reasoning had a mean score of 1.73 before the class which changed to 4.00 after the class indicating an increase of 2.27. This has a t-score of -8.480 which has a corresponding p-value of < .001. The self-rating for "deeper content knowledge around the Nevada Academic Content Standards" changed from a mean of 2.293 before the class to 4.27 after the class which was an increase of 1.34. This has a t-score of −5.701 with a corresponding p-value of < .001. This indicates statistically significant improvements in all areas. Teachers were also surveyed regarding their likelihood of using the information from this class in their instruction with one being rarely and five being always. The mean score for this statement was 4.93.

Conclusion

The results show that participants in the Routines for Reasoning course felt that it was valuable and would continue to use the information in their instruction regularly. When questioned about their students' problem-solving abilities, teachers were unanimous in expressing the belief that their students had improved and were better prepared to solve problems as a result of implementing the routines shared in the course. One teacher shared that, "My students are at a completely different level after working through the skills I gained during my two years. They approach problems with confidence, know to read multiple times, and pull important information. We do not focus on 'key terms', but rather we think about context." Another teacher stated, "This class has allowed my students the ability to really think through a math problem in ways they were not able to do before. It has allowed them to understand and make connections within numbers beyond the surface. We have really been able to make

connections and build number sense and realize the ways in which we can apply problem solving strategies in many different situations." In addition, many teachers felt that students had gained both confidence in their own abilities and had become more independent with comments such as, "My students have gained a lot of confidence which positively impacts their learning. They will work hard to sort through the steps and challenges without 'shutting down'. Their math vocabulary and ability to describe their thinking has also improved and I see the impact in other subjects as well." Another commented, "Students have responded so well to the routines and structure. They are more engaged, with less wasted instructional time—they know what to do and they get started on each task so much more efficiently! The meaningful discourse about their own mathematical thinking is through the roof!"

One participant recently described how her own math anxiety has decreased as a result of this course. She went on to explain that she had previously had encountered a complex problem involving fractions during a professional learning class prior to the start of this class. At that time, she became anxious and wanted to avoid working on the problem. She encountered the same problem again in one of our Routines for Reasoning class sessions near the end of the second year. She stated that this time she felt much more comfortable and was willing to begin working with the numbers in the situation using the strategies she had learned in this course.

In addition to increasing students' problem-solving abilities, the NWRPDP trainers observed changes in instructional practice and beliefs about math teaching. This idea was central in many of the comments on the post-reflective survey. One participant stated, "This class has helped so much! It has completely changed my teaching which has, in turn, changed my students' problem-solving abilities. Their conceptual understanding is so much greater than it was before." Another observed, "The class has improved my understanding of the practices and how to foster these skills for students. Developing the math practices are as important, if not more important, than the computational skills most teachers and parents focus on in math instruction and mastery of math."

The National Council of Teachers of Mathematics (2014) has developed a set of Effective Mathematics Teaching Practices which are described in *Principles to Actions: Ensuring Mathematical Success for All.* These practices describe teaching behaviors which promote deep learning of mathematics (p. 9). Although teachers in the course were not directly taught about these practices, they immediately recognized that implementation of the routines in the course incorporated many of the effective teaching practices when asked about the regular use of them. One teacher shared, "I hadn't heard of these practices before now! But, in reading through them, I see that, because of this class, my teaching actually encompasses most of these practices now." Another stated, "This class has helped me really look at math discourse and the quality of the math problems I am using in my classrooms." Another commented that, "These routines have helped me really engage students to make connections among mathematical representations. The emphasis on providing opportunities for productive struggle is also an area that has been very impactful."

Participants in the course were excited about changes they had observed in student behavior during assessments. As one participant noted, "The Math Practices have given the students the

ability…to solve word problems with confidence. They are willing to take on challenges with word problems. Their effort has definitely improved their overall scores on various assessments." Another stated, "So amazing! I had my students using the strategies on MAP, SBAC…they really internalized the routines." During the final class session, several of the class members stayed after the end of class to share their excitement regarding their students' growth on MAP testing. They recounted numerous stories where some students had made huge gains or had scored well above average, and how, in general all students had made great growth.

Participants in the course recognized that they had made important changes in their classrooms, that students were persevering while problem solving, and were enjoying the complexities of doing mathematics. For many of the teachers, this course shifted their focus to including the math practices as an important component of quality math instruction. As stated above, the average participant rating of the likelihood of using these strategies now and in the future was a 4.93 on a scale of one to five. After the final class some of the participants wanted and third year continuation of the course and were offering assistance with future trainings. They were so excited about changes in their students' willingness to tackle challenging math problems and in their own professional growth that they didn't want to stop learning. Finding ways to harness that energy and expand to include more education professionals in the region should be a future goal for the Routines for Reasoning courses.

References

Kelemanik, G., Lucenta, A., & Creighton, S. J. (2016). *Routines for Reasoning: Fostering the Mathematical Practices in All Students.* Portsmouth, NH: Heinemann.

National Governors Association Center for Best Practices, & Council of Chief State School Officers. (2010). Nevada Academic Content Standards in Mathematics based on Common Core. Retrieved from National Governors Association Center for Best Practices

National Council of Teacher of Mathematics. (2014). *Principles to actions: Ensuring Mathematical Success for All.* National Council of Teachers of Mathematics.

O' Conner, K., Dearborne, E., & Casa, T. (2021). Inquiry + Math Workshop Model = Success! *Mathematics Teacher: Learning & Teaching PK-12*, *114*(3), 187-195.

Van de Walle, J. A., Lovin, L. H., Karp, K.S. & Bay-Williams, J. M. (2014). *Teaching student-centered mathematics: Developing Appropriate Instruction for Grades pre-K-2.* Boston, MA: Pearson.

Figure 6: *Case Study 4: Integrating Eight Mathematical Practices through Instructional Routines Logic Model*

Case Study 4: Integrating Eight Mathematical Practices through Instructional Routines--Logic Model

Situation: Teachers from multiple school districts participated in a course designed to integrate the eight mathematical practices into their classrooms through instructional routines

Inputs	Outputs		Outcomes -- Impact		
	Activities	**Participation**	**Short**	**Medium**	**Long**
RPDP Trainers Students Curriculum Administrative Expectations Budget Instructional Videos Resources --Professional Books --Standards Documents --Manipulatives	Five or six virtual trainings utilizing Routines for Reasoning 15 hours collaborative planning times focusing on implementation of Routines for Reasoning Virtual Observation and feedback and/or coaching Presentation of work to colleagues	Elementary teachers from four school districts.	Increased familiarity of Nevada Academic Content Standards in Mathematics Implementation of instructional routines designed to develop student use of the math practices Increased student use of mathematical practices **Measures:** Coaching feedback Post-reflective Survey	Enhanced teacher efficacy in teaching elementary mathematics Increased use of best practice pedagogy Increased student self-reflection enjoyment of math **Measures:** Coaching feedback Post-reflective survey	Increased student achievement Increased passing rates in secondary math Increased graduation rates **Measures:** Existing district/school data

Assumptions: Teacher training will lead to increased teacher efficacy.

External Factors: Individual teacher differences, competing initiatives, Covid-19 impacts

Case Study 5: Early Literacy Cadre – Year 1

Introduction

Author and educator Jennifer Saravallo sums up the goal of the The Early Literacy Cadre when she says, "We must meet children where they are, we must understand them well to teach them, and we must offer them the right amounts of supports and challenges to grow." (2015). This multi-year course aims to help teachers develop their expertise in high quality teacher practices and individualized responsive teaching of early learners. The underpinnings of the design utilize the continuous improvement model of professional learning by offering a multi-year opportunity for teachers to deeply engage in a variety of aspects of early literacy instruction. This case study highlights the learning of participants in the Early Literacy Cadre (year one). This course is intended to be an overview of the high-quality teaching practices that comprise the elementary school literacy block. Twenty-eight primary grade teachers across three districts in the Northwest Nevada region enrolled in the year one Early Literacy Cadre. In August, the trainer conducted a needs assessment to assess prior knowledge and determine the scope and sequence for the course that matched the needs of the participants. The needs and learning goals of the participants varied between reading strategies, writing support, comprehension, and phonics but they all fit well into the original course objectives, scope and sequence.

Instructional Context

Early Literacy Cadre I is a one credit course that meets monthly after school for two hours. It is offered to educators in grades K-4 across the Northwest Nevada region. This region includes six counties and six school districts: Washoe, Carson, Lyon, Douglas, Storey and Churchill. Participants enrolled in this year's cohort have a range of experience from 2 years to 24 years in the profession with the majority having taught more than 10 years (See Table 16).

Table 16: *Participants by Grade Level*

Grade Level	Number of Teachers	Average Years of Experience
Kindergarten	7	12
1st	8	13
2nd	3	16
3rd	1	4
4th	2	
Specialist (EL, Sped, LS)	7	10

Initial Data and Planning

Teaching students in the early grades requires different techniques, assessments, and supports than teaching upper grade students. Initially, I was surprised by the number of participants that had over 10 years of experience but had signed up for this year one class. Initial surveys revealed that many teachers were switching from a higher-grade level and wanted a "refresher" course on the demands of early literacy learners. Others were in districts that had recently adopted a new English Language Arts curriculum and they wanted to meet and discuss with other teachers how to best utilize the materials with their students. Some were interested in learning more about a particular literacy area such as phonics or guided reading, and a few were looking for tips to provide quality literacy instruction in the COVID era. The variety of interests and goals challenged the trainer to design the class with both opportunities for instruction as well as time for discussion in grade level, like-district, or vertical groups. The funding provided by the Northwest Regional Professional Development Program allowed for each teacher to receive a book to study throughout the class, Literacy Essentials by Regie Routman. The book and course were divided into three main sections: Engagement – Building relationships and classroom environment, Excellence: High quality assessment and teaching practices, and Equity: Intentionally creating opportunities for all students to succeed. Undergirding the three main sections were the six fundamental reading skills as defined in NRS391.A – 1) Phonemic Awareness 2) Phonics 3) Vocabulary 4) Fluency 5) Comprehension and 6) Motivation. Participants were asked to choose three "focus" students that they would consistently observe whenever they were trying any of the teaching strategies covered in the course. There also was an option to meet one on one with the trainer to address any additional questions, plan, assess, or co-teach utilizing the strategies taught in any of the sessions. The overview of high-quality teaching practices was grounded in the Gradual Release of Instruction model, in which teachers intentionally and strategically plan differentiated support for students with the goal of them becoming self-directed learners and fluent readers with deep comprehension.

Delivery of Services

The course began in September and the main objective for the first learning session was to build relationships among the participants, modeling the classroom community relationship building that is crucial to a successful elementary school classroom. The trainer presented some easy to implement phonics activities using student names as an equitable and motivating starting place for phonics development. The participants and the trainer worked together to learn to navigate the "new normal" of Zoom meetings and Hyperdocs that would be used to transform the in-person class to virtual.

The October session focused on creating the classroom environment. This included the physical setup to allow for multiple modes of learning such as whole group, small group, and independent work. It also addressed the importance of setting up routines so that students, especially in kindergarten – sometimes the first experience with formal school, are supported until they are gradually able to participate in the routines with increasing independence. This class also provided ideas for high quality independent work activities so that students use their time wisely even when they are not working directly with the teacher. Student independence and agency are pivotal to the function of the rest of the literacy block, so the trainer intentionally placed this session at the start of the course.

In November, the session covered a whole group teaching practice, Interactive Read Aloud. During read aloud time, the teacher takes responsibility for the decoding and fluency demands of the text so that students can fully devote their energy to comprehension and discussion. This practice allows for all members of the class to participate in higher order thinking skills and discussion regardless of his or her individual reading ability. Read aloud time provides access to grade level text to all students. In this session participants looked closely at the 10 characteristics of text that educators need to consider when planning a read aloud. They also discussed the importance of volume of text, variety of genre and diverse representation in the literature that is chosen to be read aloud. A Video example of a 1st grade read aloud was watched, analyzed, and discussed.

The Cadre paused for winter break and resumed in January with a session on the instructional practice of Shared Reading. In this practice the teacher and students share responsibility for reading the text, allowing for discussions that focus on comprehension and analysis of writer's craft as well as a focus on aspects of the actual print in the text.

During sessions 5 and 6 in February and March, Cadre participants studied the instructional practice of Guided Reading, a responsive, small group technique that individualizes reading support for 4 – 6 students at a time. Participants studied early literacy development, how to scaffold instruction while promoting independence and how to assess the growth of each student's individual reading ability. The trainer presented a variety of assessments to assist in planning for next steps as well as to identify student strengths.

The April and May class sessions focused on early writing. Participants examined the developmental continuum as well as the development of teaching pedagogy around writing over time. The trainer presented a variety of teaching techniques that can be used depending on student need and the educator's purpose. The educators evaluated writing samples to look for student strengths and to consider needs that will help them plan future writing mini lessons. Additionally, participants met in small groups by county to explore the writing curriculum adopted by their district and work together to reconcile the high-quality teaching practices presented in this session to their day to day lessons.

Results and Reflection

At the final session in May, participants completed a retrospective survey using a Likert scale rating of 1 to 5 on several indicators of their knowledge of early literacy instructional practices with 1 being "not at all," 3 being "somewhat," and 5 "very." Group scores for each indicator were averaged for pre- and post-implementation with the gain shown in the fourth column. Results shown below in Table 17 indicate gains in the group's overall understanding of the literacy instructional practices presented in the course.

Table 17: *Retrospective Survey Results*

Statement	How knowledgeable were you about this instructional practice **before** participating in Cadre? *(mean before)*	How knowledgeable would you say you are on each of the following **now**? *(mean after)*	*t*-score	*p* value
Creating a learning environment and independent work time activities	3.53	4.29	-3.792	< .01
Planning and implementing Interactive Read Aloud	3.53	4.29	-3.49	< .01
Planning and implementing Shared Reading	3.41	4.24	-4.197	< .01
Planning and implementing Guided Reading	3.59	4.41	-3.57	< .01
Early writing teaching methods	3.35	4.18	-3.347	< .01

n = 17

Teachers also were asked to reflect in writing on their overall experience with the course. Bulleted below are some of the comments gathered in response to the following question: What was the most useful session and/or resource of the Early Literacy Cadre and why?

- the Hyperdocs
- Examples and videos
- I loved all of the information we were given throughout the course!
- Writing rubrics!!
- The book was a great resource, lots of information. Amy also shared many very valuable resources.
- Just having Amy as a resource and the book, "Literacy Essentials" is a great tool for future use.
- I loved the videos...
- Everything in the guided reading section was so helpful! I need new ideas and more tools in my toolbox when it comes to helping kids learn how to read.

Teachers also reflected about their challenges with implementation. The most noted challenges were ensuring that the high-quality literacy practices fit into the particular curriculum adopted by the district and time allocated for instruction. Many teachers throughout the course expressed concern or frustration about the ability to spend enough time with individual students or small

groups with all the daily stresses and requirements placed upon teachers. Many also expressed that COVID precautions and exclusions exacerbated the problem further. However, despite the challenges of both COVID and everyday teaching duties, the participants found the course helpful overall. Below is some evidence of reflection and observation of the focus students teachers chose to observe closely throughout the course.

- One of my students predicted how the characters were going to solve the problem.
- One student connected the sound "ar" from park to decode market.
- Based on what was read, they could state the purpose for which the author wrote the text
- Students were using the pictures to make/confirm predictions
- One student made a self-correction
- Students could solve CVC words and blend, they identified beginning sounds

Conclusion

Early literacy is a complex and challenging topic. Educators often begin their careers without the proper training or materials to successfully guide all students through the developmental continuum to become fluent, independent readers. The Early Literacy Cadre provides support for new and experienced teachers to refine their practice and hone their observation abilities to skillfully determine the needs of the students in their classes and guide students toward proficiency, providing and removing supports along the way. As Regie Routman (2014) wrote, "Responsive teaching and assessing means we are always teaching understanding, continuously checking for understanding and adjusting instruction as needed." This work is no easy task. The Cadre provides a place to learn, review, and discuss how to be a responsive teacher in a safe environment with other teachers of the early grades. So often these teachers must "adapt" professional development from school wide initiatives to meet the needs of early learners. However, in the Cadre, the focus is on the early grades. There is opportunity to discuss the curriculum and skills needed to teach these young learners without having to "reinvent the wheel." As such, the Early Literacy Cadre serves as a positive environment to take risks and endeavor to improve the literacy outcomes of our youngest learners. Cadre year II will dig deeper into assessment and responsive teaching. Participants will choose an instructional practice on which they would like to concentrate. The educator and the trainer will plan and co-teach lessons to students together throughout the year. During class sessions they will discuss the observations and reflections from these co-teaching sessions and set goals for further improvement. Year II takes the overview of the instructional practices and applies it to practical, everyday teaching. This will encourage educators to learn more about all aspects of the instructional practice and refine their teaching over time. The eventual goal is to improve student outcomes by supporting teachers in the difficult but rewarding work of teaching young children.

Resources:

Routman, R. (2014). *Read, Write, Lead*. Association for Supervision & Curriculum Development. Alexandria Virginia.
 Routman, R. (2018). *Literacy Essentials: Engagement, Excellence, and Equity for all Learners*. Stenhouse Publishers. Portland Maine.
Fountas, I & Pinnell, G. (2016). *Guided Reading*. Heinemann Educational Books.
Saravallo, J. (2015). *The Reading Strategies Book*. Heinemann Educational Books.

Figure 7: *Case Study 5: Early Literacy Cadre- Year 1 Logic Model*

Case Study 5: Early Literacy Cadre- Year 1

Situation: Regional Early Literacy Cadre Course
Course will explore Nevada Academic Standards for Literacy in Grades PreK- 2. Participants will learn and implement best practices in literacy instruction based on the Nevada Early Literacy Intervention Program (NELIP) methods as outlined in NRS391A.120. The course will be divided into three main sections: Engagement – Building relationships and classroom environment, Excellence: High quality assessment and teaching practices, and Equity: Intentionally creating opportunities for all students to succeed. Participants will learn methods to teach fundamental reading skills including 1) Phonemic Awareness 2) Phonics 3) Vocabulary 4) Fluency 5) Comprehension and 6) Motivation.

Inputs	Outputs		Outcomes -- Impact		
	Activities	Participation	Short	Medium	Long
• NWRPDP Facilitator	• Teachers discuss and reflect upon assigned text	• K-4 Classroom Teachers	**Learning** • Increased pedagogical knowledge emphasizing the importance of high-quality texts and instructional practices • Increased teacher confidence and efficacy • Graduate or in-service credit that allows for salary advancement	**Action** • Increased use of high-quality literacy instructional practices • Increased Teacher Collaboration • Increased focus on incremental student progress using formal and informal assessment measures	• Increased Student achievement • Improvement of data pertaining to NV Kids Read • Increased Graduation rates
• 16 hours of instructional time via Zoom One graduate credit from SUU or 1 inservice credit	• Teachers observe and implement high quality literacy instructional strategies	• K-5 Special Education Teachers			
		• K-5 EL Teachers			
• *Literacy Essentials: Engagement, Excellence, and Equity for All Learners* by Regie Routman and other readings	• Teachers brainstorm and have dialogue about implementation • Teachers connect learning to NVAC standards	• Literacy Specialists			
• Budget	• Teachers use assessment to monitor student progress on 3 focus students		**Measures:** • Post-reflective measure • Observation and discussion	**Measures:** • Coaching Assessment • Post-reflective measures	**Measures:** • MAP Tests • Proficiency Exams
• Instructional Videos					

Assumptions: Training will increase student achievement and be evident to the administration during the evaluation process. Continued Funding. Participants will be engaged and reflective

External Factors State, District, and Social Site: Time in school day. Range of student needs and abilities. Administrator Expectations. State, District, and social site contexts. COVID-19 Pandemic.

Case Study 6: Family Communication through Google Classroom

Introduction

When schools across the nation, including Nevada, shut down in March of 2020, many teachers, parents, and students were immediately put into the widely uncharted educational territory of full-time distance learning. Many educational stakeholders were left to just make it by, and consequently student learning was heavily affected. One of the biggest issues for Storey County School District was that there was a widespread lack of understanding of what was expected from students, caregivers, and educators, and how caregivers could support their student learners at home. There also was a lack of experience for teachers in regular communication with parents, especially with assignments, in methods not strictly in-person. Consequently, teachers began to use various methods of communication of expectations and assignments with parents and caregivers, including digital communication platforms such as Bloomz, email, Google Classroom, ClassDojo, and social networking sites. While this worked on an individual basis for teachers, parents with students in multiple classrooms and grades were then required to navigate through various methods of understanding assignments, and receiving messages from teachers.

One strategy of increasing caregiver efficacy of parental communication during distance learning, is to make understanding expectations less complicated. To do that, it was determined that all elementary teachers in Storey County would use Google Classroom, as it was already being used at the both the Middle School and the High School, and would continue to be the main form of communication for students and parents/caregivers, when students were not in class. The selection of Google Classroom for teachers, was based on the understanding that it would be beneficial with the school's shifting educational delivery due to the pandemic.

Instructional Context

Storey is a small rural county in Northern Nevada. There are four schools: two PK-5, one 6-8, and one 9-12. The overall student population of Storey County Schools is 430, with 120 at the high school, 124 at the middle school, and 186 total preK-5 elementary students. To meet Covid safety protocols, the MS and HS started out with 2 days at school and 3 days home, and later increased student attendance at school to four days with one day at home. There also was an option at both schools to offer a digital online program for families that chose to utilize full online learning, with no student in-class days. Both elementary schools started out and finished the year with the delivery model of four days at school and Fridays at home. Additionally, an online only option, which combined students from both elementary schools, in two grade level groups K/1/2 or 3/4/5, was provided to families who chose to keep students at home. This professional development study focuses on teachers in grades 1-5, in one of the district's two elementary schools, as well as the two online only teachers. The breakdown of student and teacher numbers by grade are shown in Table 18.

Table 18: *Number of Teachers and Students per Grade Level*

Table 1: Teachers and Student Numbers by Grade Level Grades	Teachers	Students
K	1	17
1	1	14
2	1	16
K/1/2 Distance	1	5/4/8
3	1	19
4	1	15
5	1	27
3/4/5 Distance	1	6/8/6
TOTAL	**8**	**154**

Initial Data and Planning

With the unknown direction that the Covid-19 pandemic would drive schools throughout the 2020-2021 school year, it was necessary to plan for a variety of situations and solutions to address challenges. After the immediate shutdown of schools in March of 2020, it was clear that our schools would need to have a plan in place for ongoing communication with parents. At the elementary level in Storey County, the schools began the year with students - following all safety protocols – while attending in-person classes Monday through Thursday with distance learning on Fridays. In order to avoid the confusion that resulted from the school shutdown in March, teachers needed to be ready with a plan of communication if and when it was needed. Because all students have a Chromebook for personal use, it was decided that teachers would utilize Google Classroom as a format for posting assignments and communicating with parents and caregivers. It also was determined that having one digital platform would be most beneficial for parent and caregivers, so all teachers were asked to use the same format and would be trained in the use of Google Classroom.

Delivery of Services

In early Fall 2020, all teachers attended two Google Classroom (GC) workshops focused on the built-in tools designed for communication with parents and students. These trainings were conducted virtually, so that teachers could be connected with their Google Classrooms and working in real-time. Additional support was given to teachers, individually, on an as-needed

basis, during the initial set-up of classes and throughout the school year. This additional support was done both in-person and virtually with teachers.

All teachers were asked to rate on a Likert scale of 1-5 their own beliefs about parent communication through GC, by completing a pre-use survey as well as a post use survey, following the end of the third quarter of the school year. (see Table 2).

Teachers also were asked to reflect on and rate on a scale of 1-3, their value perception of the level of parent communication that was enhanced, their own beliefs about using Google Classroom as a resource for communication, and whether they feel that continued use will be beneficial in the future. (see Table3).

Additionally, teachers were asked to comment on their perceptions, take-aways, or anything else they would like to share about the school-wide use of Google Classroom as a parent communication tool.

Results and Reflection

The results from the teachers' pre and post reflective surveys (see Table 19) indicate that, while there was an overall increase in the efficacy of using Google Classroom (GC) as a tool for parent communications, those results were minimal. The highest area of growth was in teacher self-perception of how to specifically use GC as a communication tool with parents and caregivers. Teacher perceptions of the value in GC as a tool to support and increase parent support and communication showed growth, but at a lesser degree.

Table 19: *Teacher Pre and Post Reflective Use of Google Classroom as a Parent Communication Tool Survey (Scale 1-5)*

Rating	Pre	Post	Change
I know how to effectively use Google Classroom as a communication tool for distance learning	1.05	3.34	+2.29
I believe that all teachers using Google Classroom as a digital communication tool will act as a support for parents.	2.37	3.42	+1.05
I believe that by using Google Classroom, and providing an easily accessed tool for communication, parents will be more involved with their children's distance learning than they were at the end of last year.	2.37	3.42	+1.05

Table 19 shows that the teachers' perceptions of the benefits of all teachers at the school using Google Classroom as a common platform for parent communication were mixed. Of the eight teachers, one-half believed that using Google Classroom allowed them to communicate better than during the school shut-down at the end of last year. Less than one-half believed that GC enhanced their normal communication. And less than one-half plan on using it in the future. It also is notable that fewer than one-half of teachers regularly posted student assignments in Google Classroom.

Table 20*: End of Third-Quarter Teacher Reflection of the Value in Using Google Classroom as a Tool for Parent/Caregiver Communication (Numbers listed reflect the number of teachers who agreed, disagreed, or were unsure/or neutral).*

Reflection Topic	1 Disagree	2 Neutral	3 Agree
With the use of Google Classroom, I had better parent communication this school year than at the end of last school year.	25%	25%	50%
With the use of Google Classroom, I had better parent communication this school year than during a non-distance learning school year.	25%	38%	38%
Google Classroom was a useful resource for basic parent communication.	25%	38%	38%
I regularly posted student assignments into Google Classroom for parents to know what was expected.	50%	12%	38%
I plan on continuing the use of Google Classroom under future 'regular' classroom teaching and learning situations.	38%	25%	38%

Teacher Comments

"I found that parents of my students liked knowing that they could check Google Classroom daily, for communication from me."

"For much of the year, parents didn't respond to my posts."

"I regularly posted assignments in Google Classroom, so parents were used to checking it."

"I found that on Fridays and days that students were home quarantining, I had better response from parents."

"My parents regularly checked the Classroom stream, and responded to my posts."

"I ended up using both Google Classroom and my normal platform for parent communication. I think my regular program is a better fit for me and parents."

"Some parents had technology issues with having to be a part of Google and the school, that made them not want to communicate through Google Classroom."

"Google Classroom helped me give overall comments and information to parents, but on an individual basis, it did not help me communicate information about specific students to their parents."

"I found that using email was a faster and more user-friendly method for communicating with parents."

"I didn't use Google Classroom for assignments, so parents had no reason to check it."

"I wasn't excited enough about using Google Classroom, to share my motivation with parents."

"Even though I put all assignments into Google Classroom, not all parents checked regularly. Sadly, those that didn't check were the ones that I wanted to be checking. Consequently, I found the need to use email, as Google Classroom does not save the direct emails sent through it."

Conclusion

The hypothesis of this case study was: If teachers use the same digital platform to convey expectations and assignments, communication with parents and caregivers will be enhanced. This would result in less confusion for parents as to how to help their children, and thus create better learning opportunities for students. Additionally, with parents and caregivers expecting assignments and teacher communication in one place, they would check their child's progress more often, which would allow teachers to discuss that progress in real time, even though the learning is at a distance.

In order to test this hypothesis, I provided professional development to teachers, in the form of expanding their initial knowledge base for using Google Classroom. It also was necessary to provide ongoing support and training for teachers, as questions and issues arose, throughout the year.

It should be noted that when this plan was initially formalized, there was a high expectation that the school would be closed due to the pandemic, and all students would be taking home their Chromebooks. Due to the young ages of the students, it was unclear that if Chromebooks were taken home on Fridays for distance learning that they would all be returned to school on Mondays for classroom use. Thus, Chromebooks were kept at school. In addition, many parents and caregivers lacked the ability to access their child's Google Classroom due to school

technology protocols and allowances. Because Chromebooks did not go home, Friday distance work was given in the form of enrichment activities that likely contributed, at least in part, to current mixed findings.

Teacher comments also were mixed and, though there is a positive aspect, they raise questions such as: *Would teacher efficacy of the use of Google Classroom have been different if assignments and results had been posted and could have been shared with parents?* and *Would teachers be more open to using Google Classroom for communication if learning and changing was not coupled with all the changes from the pandemic?* This supports the need to provide additional professional development opportunities for teachers' use to enhance parental and caregiver communication during distance learning. Additionally, these professional development opportunities would be enhanced with the inclusion of strategies, such as posting assignments and instructions more often, to further invite parents to check their child's Google Classroom more often and foster increased communication.

References

Bogenschneider, Karen and Johnson, Carol. (2004). *Family Involvement in Education: How Important Is It? What Can Legislators Do?* University of Wisconsin-Madison University Extension USA Retrieved from

[Family Involvement in Education: How Important Is It? What can Legislators Do?](#) on November 12, 2020.

Cardullo, Victoria, Wang, Chih-hsuan, Burton, Megan, and Dong, Jianwei. *Journal of Research in Innovative Teaching & Learning.* K-12 teachers' remote teaching self-efficacy during the pandemic. Retrieved from: [K-12 teachers' remote teaching self-efficacy during the pandemic](#) on January 2021.

Johnson, Ben, (May 2020. *How to Coach Parents Who Are Teaching at Home. Retrieved from*

[How to Coach Parents Who Are Teaching at Home](#) on September 2, 2020.

Simmons, Florence. (2020) DA Distract Administration. *Communicating with parents during the pandemic: A how-to guide*

Retrieved from: [Communicating with parents during the pandemic: A how-to guide](#) on Oct 20, 2020.

Strietelmeier, Curtiss. (September 2020). *Four Tips for Supporting Parents During Remote Learning.* EdTechmagazine.com. Retrieved from [Four Tips for Supporting Parents During Remote Learning](#) on Sept 22, 2020.

Case Study 6: Parent Communication Through Google Classroom - Logic Model

Situation: When schools shut down March of 2020, many teachers, parents, and students were immediately put into the widely uncharted educational territory of full-time distance learning. Many educational stakeholders were left to just make it by, and consequently student learning was heavily affected. One of the biggest issues was that there was a widespread lack of understanding of what was expected from students, caregivers, and educators. One method of increasing parental communication of student learning is through the use of Google Classroom, with the built-in abilities of presenting student tasks while clarifying expectations and using one digital platform.

Inputs	Outputs		Outcomes -- Impact		
	Activities	*Participation*	*Short*	*Medium*	*Long*
Use of Google Classroom Use of email RPDP Facilitator 8 Teachers total, at 1 Elementary School in Storey County Parents and guardians	Pre and post teacher survey regarding the efficacy of increased parental involvement during distance learning. Two workshops on the use of Google Classroom, with the focus on increasing parental communication of student progress and expectations Individual training, as needed, for further support of the use of Google Classroom.	Teachers: 1-Kindergarten 1-1st Grade 1-2nd Grade 1-3rd Grade 1-4th Grade 1-5th Grade 1-K/1/2 Distance 1-3/4/5 Distance	Teachers increase knowledge of the use of Google Classroom for increased parental and caregiver support and involvement during distance learning. **Measures:** Post-reflective surveys for teachers and parents/caregivers	Increased teacher efficacy in the use of Google Classroom to connect and communicate with parents and caregivers, during regular school learning. Increased teacher efficacy in the use of Google Classroom to connect and communicate with students, in and out of the classroom **Measures:** Post-reflective surveys for teachers, parents/caregivers, and students	Increased and ongoing teacher use of Google Classroom as a support and involvement tool for parents and caregivers. Increased and ongoing teacher use of Google Classroom as a support and involvement tool for students. **Measures:** Post-reflective surveys for teachers, parents/caregivers, and students

Assumptions: Positive attitudes and beliefs about Professional Practice. Changes in teachers' pedagogy leads to increased parental communication. Parents are willing and on-board with digital communication.

External Factors: Current hybrid model of education at the school is subject to change at any moment. Teachers must have the google classroom and parental training/support in place rather quickly, in case of school shutdown. Teacher efficacy in the practice. Fatigue in having another task to do with students, while already having to have changed nearly all aspects of the regular classroom atmosphere, due to Covid19 and needed health protocols.

Figure 8: *Case Study 6: Parent Communication through Google Classroom Logic Model*

Case Study 7: Building Skills for K-12 Technology Integration

Introduction

The Covid-19 pandemic increased the need not only for technology access, but for meaningful technology integration into instruction. The term digital divide was introduced in the mid-1990s to describe gaps in access to and knowledge of technological tools and resources (Ghobadi & Ghobadi, 2013). Student access to computing devices was a necessity when schools closed to bridge the digital divide. Secondary impacts of the digital divide faced by educators was students' and families' limited information and experience with education-based technologies (Ghobadi & Ghobadi, 2013; Yu, Ndumu, Mon, & Fan, 2018) necessary for continuation of education once schools closed.

Educational technologies are not new. However, they are frequently updated, modified, or developed. Many school districts in Nevada have embraced educational technology and provided devices and platforms to teachers, students, and parents. However, prior to the Covid-19 school closures, it was frequently used as an instructional enhancement. School closures in the spring of 2020 forced teachers and students to shift teaching and learning to a technology-focused instructional system. The start of the 2020-2021 school year included different education delivery, including hybrid, online, and blended learning, adding to the importance of purposeful educational technology use for learning.

Instructional Context

The Covid-19 pandemic altered the design and delivery of professional learning opportunities for Nevada educators. This course was a hybrid course including both synchronous and asynchronous learning. Synchronous were delivered via Google Meet, a videoconferencing platform supported by Google. Although not ideal in technology-focused professional learning, it opened up the opportunity to offer the course to teachers outside of the Northwest region.

Google for EDU (education) tools were the focus of this course. A majority of the school districts in Nevada use Google for EDU tools. Training focused on this platform not only ensured teachers would have access, but also allowed teachers to build their own instructional toolbox with district-supported resources. The artifacts provided an opportunity to create instructional materials that were used specifically for professional purposes, whether it was a learning guide for students, parent contact forms, or sites for expected student behaviors. A secondary benefit of this course was that participants finished with the skills and competencies necessary to pass the level 1 Google Certified Educator exam. While this was a requirement of the participants, it was highly encouraged.

This thirteen-week course included 26 teachers, including elementary, middle, and high school teachers. One administrator and two instructional coaches also participated. Five school districts were represented.

Tables 21 below shows training participants by county and grade level.

Table 21: *Training Participants by County*

County	K-5 Teachers	6-8 Teachers	9-12 Teachers	Admin	Other (TOSA)	TOTAL (District)
Carson	1	1	1	1	0	**4**
Churchill	2	3	0	0	1	**6**
Lyon	7	0	4	0	1	**12**
Washoe	1	2	1	0	0	**5**
Elko	2	0	1	0	0	**3**
TOTAL (Grade Band)	**13**	**6**	**7**	**1**	**2**	

Equity in educational technology access is more important now than ever as many students are now attending class and learning outside the four walls of a classroom. Awareness of district demographics brings a heightened awareness of student populations within each district.

Table 22 shows the demographic information for each county in which participants taught. (Nevada Report Card, 2020)

Table 22: *Demographic Data for Participating Counties*

County	Total Enrollment	Ethnicities other than White	Individualized Education Plans	English Language Learners	Free and Reduced Lunch
Carson	7849	52.96%	14.59%	12.6%	63.27%
Churchill	3361	40.43%	16.48%	6.81%	57.42%
Lyon	9034	37.85%	13.65%	6.25%	42.22%
Washoe	64,359	56.4%	14.1%	14.91%	51.22%
Elko	10,206	41.61%	12.83%	9.96%	44.55%

Initial Data and Planning

Technology focused professional development can be challenging because there are often mixed experiences with technology tools. These experiences can influence teachers' attitude, motivation, and participation. This was a voluntary course, which meant that all teachers were self-motivated to improve their technology competencies. However, the level of expertise ranged from beginner to highly fluent.

A calendar was created to pace the completion of the asynchronous modules. Some participants were able to move faster based on their comfort-level. Synchronous lessons were scheduled each

week. Given the mixed abilities and comfort levels of the participants, a strategic plan was established to address questions and provide support without slowing the progress of those who were comfortable moving forward. Adding a support time before and after the synchronous training provided an unplanned benefit. Each school district has different contractual requirements and cleaning processes that affected classroom access. Some schools allow teachers to stay after contract time, while others require schools to be empty by a certain time for cleaning. Adding in the support time before synchronous learning gave participants time to leave school and get to a suitable location to attend the course. These individuals could then participate in the support time after the synchronous lesson.

All participants completed a post-reflective evaluation survey at the conclusion of the course.

Delivery of Services

Synchronous classes met each week through a virtual face-to-face meeting using Google Meet, which included 1 hour of instruction buffered by 30 minutes of support and question/answer sessions before and after instruction time to accommodate different contract obligations in the various counties. Participants completed weekly asynchronous training modules focused on specific Google for EDU tools and resources. Each weekly synchronous session had a target topic, which included introduction to new content in learning modules or extending on information already learned in the modules. Participants completed weekly job-specific artifacts to apply what was learned in an authentic manner.

To meet the needs of all learners, two 30-minute question and answer sessions were held each week before and after the one-hour whole group training. This level of differentiation in the course provided opportunity for those who were more fluent in the concepts to focus on individual work during the question-and-answer sessions. Participants who wanted additional support or review were able to join before and after the one-hour training.

This professional development course had three components: technology skills, integration, and pedagogy. Technology skills incorporated specific steps to use the various Google for EDU applications, including Google Drive, Calendar, Gmail, and others. Proficiency in applying each skill was demonstrated through teacher-created artifacts. Integrating the technology skills into professional work and content was a focus mid-way through the course. Participants were encouraged to apply their skills and use multiple tools together for one artifact. For example, some teachers created a Google Form to administer an assessment, transferred the assessment data to a Google Sheet, and used analytic tools in Sheets to create graphs and charts to analyze the data.

Results and Reflection

All participants also were asked to complete a post-reflective survey at the conclusion of the training. The rating scale ranged from 1 (poor) to 5 (excellent). Due to school closures related to Covid-19, the post-reflective survey was completed electronically. One participant was not able to complete the post-reflective survey due to Covid-19 symptoms. Table X shows the results from the survey. Results reveal that significant gains occurred as a result of this course in participant knowledge, comfort, and implementation of technology for instruction.

Table 23: *Teacher Post-Reflective Mean Results*

Question	Before attending	After attending	Difference	t-score	Significance (*p*-value)
Knowledge of Integration of Technology Tools into Instruction	2.36	4.11	1.75	-10.967	<.001
Educational Technology Applications – Ease of Use for Integrating into Instruction	2.32	4.18	1.86	-16.630	<.001
Quality use of Technology Tools (Integration, collaboration, student engagement)	2.25	4.14	1.89	-12.744	<.001
Comfort Level of Using Technology Tools for Instruction for Distance or Hybrid Learning	2.32	4.11	1.79	-12.010	<.001
Incorporating Technology Tools into Meaningful Learning Experiences	2.25	4.25	2.00	-12.296	<.001

*All questions show significant growth at the *p*=<.001 value.

Participants also were asked to rate themselves on the implementation of course information and application to their job. Teachers ranked themselves on a scale ranging from 1 (very unlikely) to 5 (very likely). The results shown in Table 24 indicate a high probability of implementation and professional application.

Table 24: Instructional and Professional Application

What is the likelihood that you will implement the skills and concepts learned in this training into your classroom instruction?	4.82
To what extent to you feel this course is applicable to your job?	4.57

Conclusion

Educational technology is not new. It has been a topic in education for more than 30 years. However, the ways in which teachers integrate technology use into instruction in meaningful and purposeful activities has shifted over time. There is now a pedagogical shift in instruction design that teachers must embrace to prepare students for future learning as more post-secondary institutions use technology tools for instruction.

The Covid-19 pandemic accelerated these trends. The importance of educational technology is now more important and more used than ever before. While most schools will soon transition back to in-person education, there will forever be a need for educational technology in education. The educators who participated in this course not only learned strategic technology tools for planning and organization, but also increased their technology pedagogical expertise. These educators are more prepared to effectively integrate technology into their instruction in ways that will boost student engagement and learning.

References

Ghobadi, S., Ghobadi, Z. (2015). How access gaps interact and shape digital divide a cognitive investigation. *Behaviour & Information Technology, 34(4)*, 330-340. doi: 10.1080/0144929X.2013.833650

Nevada Report Card. (2020). Retrieved from Nevada Report Card on February 23, 2021.

Yu, B., Ndumu, A., Mon, L., Fan, Z. (2018). E-inclusion or digital divide: and integrated model of digital inequality. *Journal of Documentation, 74(3),* 552-574. doi: 10.1108/JD-10-2017-0148

Case Study 7: Building Skills for K-12 Technology Integration

Situation: Due to Covid-19, teachers shifted to produce quality learning environments and instruction using available technology tools. Increasing teacher capacity in education-focused technologies contributes to improved engagement, instruction, and organization.

Inputs	Outputs		Outcomes -- Impact		
	Activities	Participation	Short	Medium	Long
Course Instructor NWRPDP Facilitators K-12 teachers in the Carson City School District, Churchill County School District, Washoe County School District, Lyon County School District Administration Expectations	Courses on Google for EDU applications • Weekly training via Google Meet • Independent assignments • Group Collaboration • Group Discussion Optional Training opportunities	K-12 teachers & administrators in the Building Skills for K-12 Technology Integration Courses • Carson City School District (4) • Churchill County School District (6) • Lyon County School District (12) • Washoe County School District (5) • Elko County School District (3) K-12 teachers & administrators in the Advanced Building Skills for the K-12 Technology Integration Course	Increased understanding of integrated technology tools Increased integration of appropriate technology tools in hybrid or distance learning models Increased understanding of effective technology integration Increased pedagogical knowledge Increased teacher confidence in educational technology integration **Measures:** RPDP Feedback Form, Post Reflective	Enhanced instructional practice (e.g., purposeful use of technology) Increased implementation of training goals/objectives Increased collaborative matching at school and district level Increased teacher efficacy **Measures:** Observation of implementation level Post Reflective	Increased teacher & student application of concepts Increased student participation in hybrid or distance learning assignments Increased pedagogical practice relative to educational technologies Increased teacher retention **Measures:** Existing school, district, & state

Assumptions: Teacher training will lead to teacher efficacy. All participants will successfully complete the course/s. Positive attitudes and beliefs about Professional Practice. All participants will shift instructional practices.

External Factors: Pandemic related challenges. Educational Delivery Models. Competing district initiatives. District resources. Teacher burnout

Notes:

Figure 9: Case Study 7: Building Skills for K-12 Technology Integration

Case Study 8: Teachers Leading Change: Collective Efficacy in Action

Introduction

The need for teacher leaders has never been more magnified than during the Covid-19 global pandemic. Educational leaders have been called on to make complex decisions in a volatile environment where a one-size-fits-all answer would not be acceptable. Collectively addressing challenges through collaboration can have a marked impact on student learning especially during this unprecedented time. Peter DeWitt ranked collective efficacy, the confidence we have in our group to make a difference, as one of the most important influences on school leadership today (2016).

Brené Brown defines a leader *"as anyone who takes responsibility for finding the potential in people and processes, and who has the courage to develop that potential"* (2018). Teachers Leading Change was designed to encourage teacher leaders to not only collaborate with other teacher leaders across school sites and districts, but to also find collaborators at their sites and within their districts with whom they can engage in action research to increase collective efficacy.

Instructional Context

Teachers Leading Change was launched in 2015 after two years of research into the skills and dispositions required to shift from a classroom educator to a teacher leader. The overarching National Education Association (NEA) Teacher Leadership Competencies became the foundation of the program design. These competencies include reflective practice, personal effectiveness, interpersonal effectiveness, communication, continued learning and education, group processes, adult learning, and technological facility. These are skills that all teacher leaders need to develop and practice to engage diverse groups in systemic change. (p.8, 2018).

Teachers Leading Change (TLC) was designed to support classroom teachers and teachers on special assignment in growing their teacher leadership skills and competencies while engaging in action research around a self-identified problem of practice to improve teaching and learning in Nevada. The professional learning included the key factors identified by Frontline Teaching & Learning Institute of relevance, design, and quality of the PD experience (sustained, intensive, collaborative, job-embedded, data-driven, and classroom-focused), so that educators truly benefit and view their participation as clearly worth the time (2016). The TLC sustained design occurred over a two-year period and included 90 hours of intensive professional learning. The participants' self-selected action research focus assured the experience was job-embedded, data-driven, and classroom-focused. Because the action research was non-evaluative, teacher leaders were able to take calculated risks in the interest of growing their leadership skills and improving their instructional practices to benefit their students.

The scope of professional learning offered during the two-year cohort included types of leadership, establishing credibility, mentoring, coaching, dealing with teacher resistance, collaborative inquiry, leading collaborative teams, group dynamics, and presentation skills. At

the heart of the professional learning design is action research. Teachers chose a problem of practice, formulated a research question, conducted research, invited collaborators, and implemented action steps with data collection to impact meaningful change within their context of teaching and learning.

Since its inception in 2015, Teachers Leading Change has provided professional learning opportunities to 123 northern Nevada educators, including 75 elementary teachers, 16 middle school teachers, 28 high school teachers, and four Teachers on Special Assignment (TOSAs). Until 2019, TLC participants were from one district, Table 25 shows the number of teacher leaders in each cohort for this school year and educators from three northern Nevada districts are represented.

Table 25: *Teacher leaders in each cohort*

TLC Group	K-5	6-8	9-12	TOSAs	Total
Cohort F Year 1	14	4	5	3	26
Cohort E Year 2	19	2	4	5	30
Northern NV Cohort	12	1	1	2	16
Totals	45	7	10	10	72

Initial Data/Planning

Planning for the 2020-2021 TLC cohorts began in February/March of 2020. Training rooms were reserved for classes, course development dates were set by facilitators, and budget proposals were submitted in anticipation of launching a sixth TLC cohort group at the end of May 2020.

A contract was secured for a consultant to provide 15 hours of professional learning for the Northern Nevada Cohort and Cohort E in June 2020. When the Covid-19 global pandemic shut down the country, the facilitators adapted plans to change the launch date of the Cohort F Year 1 to August 2020 and prepared to deliver all professional learning content virtually. There was still a lot of uncertainty around what the 2020-2021 school year would look like in the fall. This uncertainty became the focus of the June 2020 institute where 40 TLC participants engaged in an inquiry around *How can we provide opportunities to engage students in rigorous learning for the upcoming school year?* This forward thinking allowed teacher leaders to become key resources for their administrators in exploring ideas for supporting teaching and learning when students returned to school in August/September 2020. The most critical aspects of the research included the necessity for strong instruction, deep engagement, high expectations, and key resources from the TNTP report, *The Opportunity Myth* (2018). Participants across districts were able to

strategize remote delivery of instruction, ideas for keeping students engaged, as well as attend to the necessity for self-care and mental health while explicitly integrating social and emotional learning into their plans for students. Much of this work during the institute set the stage for teacher leaders' action research projects during the upcoming school year designed to support their students and communities in a way that was meaningful, tied to their core beliefs, and aligned with research-based best practices.

Despite the nationwide shutdown, 28 teachers applied to participate in the sixth cohort of Teachers Leading Change and began their first year of this two-year process. Facilitators were excited to learn that the circumstances did not discourage educators from applying to the program.

The addition of six former TLC graduates to support the program facilitation, required additional stipend funds for four facilitators who would be supporting the project outside their regular contract time. This showed the TLC facilitators' commitment to continued growth in their teacher leadership skills and the expansion of the program to other districts.

Delivery of Services

Table 26 outlines the professional learning hours as they were delivered. All hours were conducted virtually except for three authentic audience presentations and Cohort E graduation ceremony which took place in May 2021. All in-person events occurred under Covid-19 compliant restrictions to ensure the health and safety of all participants.

Table 26: *Professional Learning Hours*

TLC Group	Course Structure	Professional Learning Hours
Cohort F Year 1	Twice monthly Zoom Meetings; 3 hours each Optional Office Hours Ignite Presentations	45 hours
Cohort E Year 2	Monthly Zoom Meetings; 2.5 hours each Optional Office Hours Authentic Audience Presentations	30 hours
Northern NV Cohort Year 2	Three Zoom Meetings; 5 hours each Three PLC Meetings; 2 hours each Google Classroom Assignments; 4 hours Optional Office Hours Authentic Audience Presentations	30 hours

Results and Reflection

Creating opportunity and a space for teachers to collaborate while growing their leadership skills and dispositions is foundational to the Teachers Leading Change cohort model. Because the projects are diverse and self-selected it has been challenging to grasp with the scope of their impact and specific measures. While most of the data collection has been qualitative, the fact that 72 educators generated research questions, conducted research, and collaborated with colleagues to create meaningful change around a problem of practice cannot be discounted when considering the effect size of collective efficacy on student achievement is 1.57, which is three times more powerful and predictive than socio-economic status, student motivation and engagement (Donohoo, 2016).

Facilitators have recognized a need to collect additional data to continue growing the program and meet the needs of participants. Program attrition is one point where facilitators have recognized a need to gather additional feedback and collect data. Attrition traditionally has been 2-3 %, this year's attrition rate was 11 of 72 participants, or 6.5%. Given the unusual nature of this school year being a mix of remote/distance learning, hybrid models, and in-person instruction during the global pandemic, it is difficult to say how much of an impact Covid-19 had on the increase in attrition rate. To address this issue in the future, when participants leave the program prior to completing the two-year program, data collection through an exit survey could serve to inform future professional learning design depending on the outcomes of such a survey.

With the program being six years into its creation, facilitators have also identified a need for collecting further data from past Teachers Leading Change participants to measure long term outcomes. A TLC follow-up survey would help to explicitly identify how past participants have engaged in teacher leadership to positively impact the profession. The results related to the outcomes listed in the logic model are listed below.

Short Term Outcomes – Impact of Teachers Leading Change

Teacher leaders report an increased satisfaction with their teaching experience.

"I think it's important to be around teachers that like their jobs and want to be better. This group was that kind of setting. Thus, each time we met I felt energized to go back to my classroom. I also walked away with strategies each time that could be implemented immediately. The leaders of the course were also highly competent, organized and inspiring."

"I have discovered not just what kind of leader I am but that I am definitely a leader. TLC has given me the confidence to move forward with my passion projects as well as my career as a teacher leader! "

"I felt invigorated and refreshed when I had the opportunity to work with other educators whom I consider the "best of the best." Sometimes, we get into a rut with our own grade level and site, and it can become negative and draining. It can be hard to remember why we chose to do this

very difficult job. Being able to meet with the teachers in this cohort never failed to remind me of the possibilities and opportunities that I have as a teacher. "

"We all recognize that as much as we love teaching, we know that there are aspects that need improving. We were tasked with identifying an issue and going after it with a project which was cool. A lot of times we take classes and don't come away with anything really accomplished. We got a credit or whatever, but here we were asked to improve our profession which was great."

"I have to say, being a part of this cohort has renewed my passion for education. The facilitators have done a phenomenal job, and I am so looking forward to our continued work together!"

"I am more confident. Leadership roles seem to be "falling into my lap" lately and that is something I didn't ever think I'd feel as comfortable doing as I do now. I am excited about how actions I've taken are making a difference and are making change for children and families in my community."

"I especially loved the professional learning. The TLC topics covered aligned with what I value in education and helped me feel connected to education outside of my classroom and school more than I have in years."

Teacher leaders indicate professional growth during participation in the cohort.

" I am more confident in saying that I am a teacher leader. Knowing what that entails with the standards and therefore where I can continue to grow."

"My participation in TLC has helped be more reflective as a teacher leader and really look at what is being needed vs. what I think may need to have happen. I feel that quite often when we are leaders or are spearheading a project, we don't ask for help or ask people their thoughts because it may seem like we aren't doing what we should be doing; however, I have learned that I am a stronger leader by coming out of my comfort zone and running ideas by others. "

"I am actually ready to present my "findings" from my action research project with confidence. This class has given me the tools and supports to be able to do that. I feel as though I can back up my case now and be more accepted of being a leader."

"TLC has help me grow as a leader by showing me how to share that passion with other educators through coaching and mentoring other teachers, leading professional development, researching and planning ways to share that information with others."

"TLC was instrumental in pushing me to work with a team of GT certified teachers to support teachers in incorporating GT strategies in all classrooms at our school."

"Discussing needs across the district has helped me grow. Also, learning about the teacher leader competencies has helped me identify specific areas that I need to continue to grow."

Teacher leaders refer colleagues to Teachers Leading Change

Educators continued to share their experience as a Teachers Leading Change participant with colleagues. As a result, 86% of the 35 applicants to the next TLC cohort were referred to apply

by a former Teachers Leading change participants. The next cohort will also be comprised of educators from five northern Nevada districts, which will expand the professional learning to two more districts in the next school year.

Medium Term Outcomes – Impact of Teachers Leading Change

Teacher leaders who participate in this program assume leadership roles at their sites, in their districts, and within the profession.

Of the 123 TLC graduates, 18% have assumed formal teacher leadership roles within their districts. The Teachers Leading Change program added six TLC graduates to the facilitation team to continue to build their teacher leadership skills and dispositions while expanding the capacity of the program to serve more northern Nevada educators.

"TLC has helped me learn about struggles teacher leaders face and how knowing ourselves can help us overcome these struggles. I don't have a thick skin, so looking at why people are resistant to change or how a leadership style makes a difference will continue help me grow next year in my new coaching position. This cohort also gave me the confidence to apply for this leadership position."

Long Term Outcomes – Impact of Teachers Leading Change

Teacher leaders continue to grow professionally to positively impact the profession.

One of the most encouraging aspects of the self-selected action research model of Teachers Leading Change is that often participants expand on their projects to make a greater impact on the profession and reach more educators. Literacy Solutions of Nevada, a non-profit organization, was created as part of a TLC participant's action research project. The focus of the non-profit is aimed at educating families and community members about dyslexia. Due to the global pandemic, the non-profit had to shift its educational efforts to meet the needs of Covid-19 restrictions. Literacy Solutions of Nevada was able to partner with pediatric doctors and dentists' offices in their community to deliver books to families in the community. Another TLC participant created a digital resource for Nevada computer science standards by grade levels which has since been added to the district website to support all K-5 educators in identifying resources to teach these standards. A Go-Math Interactive notebook was created by a TLC teacher leader for middle school teachers to use with their students in making the curriculum more interactive and engaging. As part of her action research, one TLC participant leveraged student voice to create a pilot ethics course for high school social studies. This course is being considered an addition to the district high school course offerings. TLC participants have also reached outside the state of Nevada to engage with other educators as part of continuation of their action research projects. Some examples included Facebook live presentations, Twitter chats, Podcast guests, and organizing educational advocacy groups.

Conclusion

Teachers have an enormous impact on our students and in our communities. Teachers Leading Change participants use that impact to improve the future of education in Nevada. They take on

many leadership roles to continue to bring their expertise to a larger platform to influence the culture and growth of educational practices to better meet the needs of students, schools, the profession, and the northern Nevada communities they serve.

Returning to Brené Brown's definition of a leader *"as anyone who takes responsibility for finding the potential in people and processes, and who has the courage to develop that potential"* (2018). TLC participants have found and developed potential in their students and their colleagues. By creating a space for teachers to collaborate, grow their teacher leadership skills and dispositions, and increase their collective efficacy, Teachers Leading Change will continue to make meaningful educational change - one action research project at a time.

References

Brown, B. (2018). *Dare to lead.* Vermilion.

DeWitt, P. (2016). *Collaborative leadership: 6 influences that matter most.* Corwin.

Donohoo, J. (2016). *Collective Efficacy: How educators' beliefs impact student learning.* Corwin.

Frontline Research & Learning Institute. (2016) *Bridging the gap: Every student succeeds act (ESSA) report: Parts 1-4.* Retrieved from Bridging the gap: Every student succeeds act

National Education Association, National Board for Teaching Standards, & The Center for Teaching Quality. (2018). *The teacher leader competencies.* Retrieved from The Teacher Leader Competencies

TNTP. (2018). *The opportunity myth.* Retrieved from The Opportunity Myth

Case Study 8: Teachers Leading Change: Collective Efficacy in Action--Logic Model

Situation: Teacher leadership requires the development of skills and competencies to drive change. The NEA Teacher Leader Competencies maintain that teacher leadership isn't an isolated task. It's a way of practicing education that continually prioritizes growth for students, colleagues, districts and school systems at large. Those who lead, the report notes, don't do so just for self-development. Teacher leaders are committed to helping others achieve their potential, with the overarching goal of improving students' learning and classroom environments. This cohort provides the structure for teacher leaders to collaborate and grow personally and professionally.

Inputs	Outputs		Outcomes -- Impact		
	Activities	Participation	Short	Medium	Long
Funding (supplies, substitutes, and stipends) RPDP Director District Leaders TLC Facilitation Team Site Administrators Teacher Leaders	Year-long professional learning centered around developing teacher leader competencies during action research process Year 1 = 45 hours of professional learning Year 2 = 30 hours of professional learning Summer Institute = 15 hours of professional learning Individual Action Research Project Assessment, Reflection, and Goal Setting using the Teacher Leader Competencies	7 TLC Facilitators 26 Cohort F Year 1 Participants 30 Cohort E Year 2 Participants 16 Northern NV Year 2 Participants	Increased satisfaction among teacher leaders with their teaching experience. Increased professional growth and teaching efficacy among participating teacher leaders. Teacher leaders refer colleagues to Teachers Leading Change Measures: Post-reflective Survey; Application Question	Teacher leaders who participate assume leadership roles at their sites, in their districts, and within the profession. Teacher leaders who graduate from the program seek to engage colleagues in leadership opportunities. Measures: Leadership Pool Data; Post-reflective TLC Survey	Increased student achievement due to teacher leaders' collective efficacy. Increase in teacher leadership that positively impact schools and districts. Measures: Existing School and District Data; Post-reflective TLC Survey

Assumptions: Teacher leaders are committed to engaging in year-long professional learning.

External Factors: COVID-19 Pandemic, Substitute shortage, teacher fatigue.

Figure 10: Case Study 8: Teachers Leading Change: Collective Efficacy in Action Logic Model

Case Study 9: Computer Science Language Acquisition through Comprehensible Output - JR Botball.

Introduction

The Comprehensible Output Hypothesis as it pertains to Second Language Acquisition suggests that the act of communicating with feedback in the target language contributes to improvement. Learning with no contact outside the learning environment i.e., immersion schools, lessened the communicative performance of grammatical knowledge (Hummel, 2014). Classic beginner computer science language classes teach and instruct such concepts as basic keyboard input and visual output to a monitor without the direct interaction. The lack of an immediate comprehensible output from coding is less effective than immediate feedback (interaction).

The Interaction Hypothesis (Hummel, 2014) of second language acquisition suggests that the comprehension of understanding goes beyond the exposure of input and stresses the importance of the role between the learner's interaction with the input. Modified interaction is the necessary mechanism in language comprehension (Hummel, 2014).

This study proposes a strong connection to the skills and methods of second language comprehension to computer science language acquisition. Interaction with a physical object (Jr Botball) with a high degree of immediate interaction with the code (input) was used as the mechanism for making CS Language (C) comprehensible in the form of robotic movement and task completion.

Non-Computer Science educators and novice programming students struggle with abstract and non-interactive methods of learning CS languages. Increasing the learner's capacity to acquire a language through interaction with the robot helps novice learners analyze syntax, create, and troubleshoot logic and conditionals, structure program development, create and use variables along with functions and libraries associated with the new language.

Instructional Context

A three-credit graduate course focused on CS programming in the language C that utilized autonomous robotics technology (Botball) was offered to educators through Southern Utah University and the Northwest Regional Professional Development Program (NWRPDP). The programming course (Jr. Botball) was offered to educators in all the sixteen counties in Nevada. Each participant had the same online platform and robot that focused on the same concepts and skills. Due to the COVID restrictions, course content was restricted to 100% distance or remote learning. Participants received the same professional development and networking support through the same CSTA, ISTE and NVACS aligned KIPR curriculum. The KISS Institute for Practical Robotics-based coding program blends physical computing with programming in C with a high degree of immediate interaction and feedback.

The CS Programming course included twenty-four teachers, ranching from K-5 teachers to Advanced Placement teachers at the high school level. Six school districts were represented by teachers in this group.

Tables 27, 28, and 29 below shows the number of teachers, by county and grade level, who completed the Learn, Make, and Teach with Raspberry Pi course, the Scratch Creative Computing Course, or both courses.

Table 27: *Training Participants by County (C Programming with Robotics)*

County	K-5 Teachers	6-8 Teachers	9-12 Teachers	Other (TOSA)	TOTAL (District)
Carson	1	1			2
Churchill			2		2
Clark		1	4		5
Humboldt			1		1
Lyon	1		1		2
Washoe	3	1	8		12
TOTAL (Grade Band)	5	3	16		**24**

Table 28: *Training Participants by County (Without previous language training)*

County	K-5 Teachers	6-8 Teachers	9-12 Teachers	Other (TOSA)	TOTAL (District)
Carson	1	1			2
Churchill					
Clark					

County	K-5 Teachers	6-8 Teachers	9-12 Teachers	Other (TOSA)	TOTAL (District)
Humboldt					
Lyon					
Washoe	1		4		5
TOTAL (Grade Band)	2	1	4		**7**

Table 29: *Training Participants by County (With previous language training)*

County	K-5 Teachers	6-8 Teachers	9-12 Teachers	Other (TOSA)	TOTAL (District)
Carson					
Churchill			2		2
Clark County			3		3
Humboldt			1		1
Lyon			1		1
Washoe	1	1	2		4
TOTAL (Grade Band)	1	1	9		**11**

Equity in Computer Science education is a consistent talking point in computer science education. County demographics support the need for accessible Computer Science education that reaches all students.

Table 30 below shows the demographic information for each county. (Nevada Report Card, 2020)

Table 30: *Demographic Data for Participating Counties*

County	Total Enrollment	Ethnicities other than White	Individualized Education Plans	English Language Learners	Free and Reduced Lunch
Carson	7849	4157	1145	989	4966
Churchill	3361	1359	554	229	1930
Clark	323787	246855	41223	52183	244578
Humboldt	3484	1568	510	309	1843
Lyon	9034	3419	1233	565	3814
Washoe	64359	36298	9072	9593	32962

Initial Data and Planning

Eleven participants completed previous computer science training either through NWRPDP or other organizations. Seven participants had not completed computer science training before this course. A range of experience from beginner to experienced programmer was present and required strategic planning and instruction along with best practices for distance learning in a setting where hands-on and direct instructor feedback and support is critical.

Physical computing in a non-physical instructor led environment leads to many challenges and difficulties. Participants joined via Zoom and instruction was designed and presented in a green screen studio with three different cameras and multiple monitors. Instructors created a virtual presence on the slide decks to maximize instructional effect and interaction. The Programming with Robotics course had two major components other than general problem solving and application. The course required instruction in physical computing with such elements as motors, servos, analog sensors, digital sensors, camera, IR sensors, light sensors, and motion detectors. The use of multiple cameras and feedback were critical in debugging and troubleshooting the physical building of the Jr. Botball.

Once the foundation of the Jr. Botball buggy was built the focus shifted to programming or "coding" in C language using the KIPR IDE interface on the Jr Botball with preloaded software and Raspberry Pi hardware. Sessions included guided activities that allowed scaffolding of learning with blended tasks of physical computing along with coding in C. These activities or

challenges allowed the immediate interaction with the participants code (input) and the robotic output.

Participants learned and practiced programming in C while collaborating on the variety of tasks. Participants were able to share their outcomes via zoom and help each other troubleshoot code and physical computing errors. Connections were made to the various grade level standards for computer science. Proof of learning and application was demonstrated when participants accomplished a variety of tasks and challenges that utilized problem solving and programming with immediate output from the robot. Participants were given opportunities for pair programming through Zoom and the sharing of their code through Google Drive and a shared class folder.

All participants completed a post-reflective survey at the conclusion of each course.

Delivery of Services

The Programming C Robotics course began with three full day training sessions where participants were introduced to physical computing concepts, functions, libraries, syntax of C language including basic motor and servo principles, engineering, and control.

Following the three days of instruction participants completed four 3-hour sessions where we spent time instructing on programming conditionals such as "if", "else", "while", "else if", statements while collecting environmental data for input from analog sensors such as range finders, IR, light sensors. Programmers also utilized digital sensors to collect environment data that was then put into functions to allow the Jr. Botball to autonomously navigate its environment and accomplish various tasks.

Participants were issued "challenges" after every class where they had to program the Jr. Botball utilizing the instruction from the session. Their code along with a video of the challenge was then uploaded and shared to folders where their fellow classmates could access and troubleshoot their own code or others who needed help.

At the beginning of each session participants were given 30 min to share their code in a digital environment (zoom breakout rooms). While in these sharing sessions it was observed that there was much troubleshooting and collaboration between the individuals as they shared their code and challenges with others.

For the final day participants were given a rubric of challenges that required the programming of their robot to accomplish several assigned tasks that represented their learning throughout the course. Participants were encouraged to partner up and collaboratively solve the challenges.

Due to Covid-19 restrictions, the sessions required a 100 percent online format. The big challenges were troubleshooting incorrect wiring and building of the Jr. Botball when we could not "see" their mistakes. The connection to the Botball from the computing device required its own WIFI and thus did not allow the participants to share their code with the instructors. The online setting of restricted access to the participants' code made it very challenging to help

troubleshoot and debug the mistakes. Many course comments reflected this challenge and the desire to have more immediate and physically present feedback.

Results and Reflection

All participants were also asked to complete a post-reflective survey at the conclusion of the training. The rating scale ranged from 1 (poor) to 5 (excellent). Due to school closures related to Covid-19, the post-reflective survey was sent to participants and completed electronically. However, we are confident that the means would not differ significantly based on learner feedback in each session. Table 31 shows the results from the survey.

Table 31: *Teacher Post-Reflective Mean Results*

Question	Before attending	After attending	Difference	t-score	Significance (*p*-value)
Nevada Computer Science Standards	3.35	4.06	0.71	-3.688	.002
Coding or Programming in C	1.59	3.65	1.97	-10.282	<.001
Computational Thinking Skills	3.47	3.88	0.41	-2.715	.015
Creating prototypes and simulations with robots	2.41	3.53	1.12	-5.664	<.001
CS iterative process	3.29	4.06	0.77	-4.075	.001
Engaging students in CS language acquisition through comprehensible output	2.24	3.41	1.17	-3.964	.001

*All questions show significant growth at the $p=<.001$ value. There were statistically significant improvements in all areas.

Participants were also asked to rate the use of the Jr. Botball as a comprehensible output to their CS C language acquisition. Teachers ranked the use of the Jr. Botball as feedback to help them understand, apply and correctly code in C. The participants were asked to rank the Jr. Botball for CS language acquisition on a scale ranging from 1 (not effective/likely) to 5 (highly

effective/likely). The results shown in Table 32 indicate a high probability of the Jr. Botball being a good tool for comprehensible output in CS language acquisition.

Table 32: *Participant ranking from 1 (not effective/likely) to 5 (highly effective/likely)*

How did using the robot help you understand and code using proper language syntax?	4.00
How did the robot help you in understanding the application and format such as functions, conditionals and program development of the C programming language?	4.18
How did having the robot help you with the iterative process of design, program development, testing and refining your code?	4.41
What is the likelihood that you will implement the skills and concepts learned in this training into your classroom instruction?	4.47

Conclusion

"I really appreciated the hands-on learning and time to process the new concepts. This class did a really good job of building learning in a progression and not too much at one time."

Participants found value in using the Jr. Botball as comprehensible output, "I really loved the hands-on learning with the robots. It made the coding more engaging and enjoyable for me. Thank you!". Participants also expressed the desire for in person instruction, "You guys did great with the limitations placed on you by distance learning. Any recommendation I would make would be something that would be done in person.". We had limited contact, funding and were constrained by distance learning which was challenging and frustrating for instruction, feedback, and troubleshooting.

Learning within context with comprehensible input is a strong model for educators who are not native to or highly trained in computer science. Traditionally computer science language courses do not have immediate comprehensible input to the learner. Many traditional courses have participants code many lines, functions and modules only to have a function(s) with a single output. There is a strong need for novice and nontraditional computer science majors to have comprehensible output as they are learning.

References

Hummel, K. M. (2014). Introducing **second language acquisition**: Perspectives and practices. Chichester, UK: Wiley-Blackwell. Chicago (Author-Date, 15th ed.).

Nevada Computer Science Standards (2018). Retrieved from [Nevada Computer Science Standards](#) on March 4, 2020.

Nevada Report Card. (2018). Retrieved from [Nevada Report Card](#) on March 25, 2021.

Case Study 9: Computer Science Language Acquisition through Robotic Application—Logic Model

Situation: Typical introductory Computer Science (CS) language acquisition is usually constrained to a computing device with basic input and output coding. Non-CS educators and novice programming students struggle with abstract and non-concrete methods of learning CS languages. Increasing educator capacity to acquire a language through applied cause and effect robotic programming can increase the understanding of logic flow, libraries, methods and syntax associated with the new language.

Inputs	Outputs — Activities	Outputs — Participation	Outcomes — Impact Short	Outcomes — Impact Medium	Outcomes — Impact Long
Course Instructor NWRPDP Facilitators K-12 teachers in the Carson City School District, Churchill County School District, Washoe County School District, Lyon County School District, **Statewide not just NW. Administration Expectations	Courses on Jr Botball Training via Zoom • Independent assignments • Small Group Collaboration • Group Discussion, problem solving and sharing code Optional Training opportunities	K-12 teachers in the Building Skills for K-12 Technology Integration Courses • State wide Nevada Districts. • Carson City School District ( ) • Churchill County School District ( ) • Lyon County School District ( ) • Washoe County School District ( ) • Elko County School District ( ) • Pyramid Lake High School ( ) K-12 teachers in the Advanced Building Skills for the K-12 Technology Integration Course	Increased understanding of the CS languages Increased integration of appropriate technology tools in hybrid or distance learning models Increased conceptual understanding language syntax, libraries and methods associated with C language Increased pedagogical knowledge Increased teacher confidence in CS language acquisition **Measures:** RPDP Feedback Form, Post-reflective Survey, speed and accuracy of Module completion	Enhanced instructional practice (e.g., clubs, units with Jr. Botball as a tool for language instruction. Increased implementation of training goals/objectives Increased collaborative matching at school and district level Increased teacher efficacy **Measures:** Observation of implementation levels, Post-reflective Surveys	Increased teacher & student application of concepts Increased student participation in hybrid or distance learning assignments Increased pedagogical practice relative to CS educational technologies Increased teacher capacity for CS language instruction. **Measures:** Existing school, district, & state data

Assumptions: Applied robotic CS language training will lead to teacher efficacy. All participants will successfully complete the course/s. Positive attitudes and beliefs about Professional Practice. All participants will shift instructional practices. Distance learning will not be a limiting factor in knowledge acquisition and problem solving.

External Factors: Competing district initiatives. District resources. Funding. Teacher burnout. Teaching from a distance and the limited ability to troubleshoot and collaborate. Covid pandemic.

Figure 11: Case Study 9: Computer Science Language Acquisition through Robotic Application Logic Model

Case Study 10: Building Pathways for Family Support at the District Level

Introduction/Abstract

The structures and habits which have dominated public schools have changed very little for decades. Within these are traditional methods of reaching out to families and community to build collaborative and supportive relationships. Focusing on a synchronous event highlighted by an activity or presentation, these efforts have been decreasingly effective in the past few years. With family schedules stretched, and in this school year, restrictions for gathering physically, we see the value in reassessing our outreach efforts to provide a more flexible accessible format. Despite these challenges, efforts need to be made to continue the development of effective ways to engage families in the education of students.

> The importance of family–school partnerships for student success is unequivocal. Given the limited resources evident in many rural communities, family–school partnerships can be especially beneficial for students in rural schools. (Witte)

Advances in our modern society have made tools and methods for communication and relationship building more accessible to all in asynchronous and varied ways. An urgent need to pair these new methods with traditional is now not an idea to consider, but an essential change which offers new links and opportunities to both families and schools. This case study describes the efforts of a rural school district taking new roads towards increased engagement with the families it serves.

Instructional Context

Participants from this case study were community members and school staff from Churchill County, Nevada. In coordination with the Family and Community Engagement Specialist in Churchill County School District, a plan was developed to help the community develop awareness and skills which would help them become more involved and informed about the efforts and activities in the schools where their children were enrolled. It was found that often parents and families wanted to support kids, but were not familiar with the tools and strategies being implemented by the schools in the district. This lack of information contributed to the ineffectiveness of school-family teams. With this need in mind, a plan was developed in the summer of 2020 and began to be offered in the fall on 2020 to address the needs of families in learning about school efforts with the goal in mind of supporting student learning.

Initial Data and Planning

Initial planning for this effort came in coordination with the work of Churchill County School district strategic plan. The third goal of this plan includes a focus on the improvement of communication and collaborative efforts between the school district and the community. For a couple years now there have been great efforts made to find the needs and the wants of the community in regards to helping students become life ready.

With the collection of information the development of improvement in these efforts was identified and a strategy created for improvement . Previous observations had revealed that there

was a strong propensity towards apathy and disconnect which could be improved. Planning was conducted to create a recurring opportunity that would give all the benefit of gradual development and knowledge about skills and activities occurring in the district and was designed to involve families in their students' learning. A series of learning lab get togethers were developed and implemented for this purpose. These learning labs were to be live workshops organized in a way to offer a selection to choose from on each evening we met. An introduction at the beginning and a social with time for question and answer with the presenters were planned to offer time to meet and have personal interaction.

The end of last school year along with the entire 2020-21 school year have however shown us in many instances the need to be flexible and willing to try new things. This effort was not an exception. With the restrictions related to COVID distancing and shutdowns, it was necessary from the first planned meeting to adjust. With this in mind we came up with a 'Plan B' approach which we felt would offer many of the same benefits even with the restrictions in place for public safety.

Delivery of Services

The work summarized in this document was a long term and continuous effort throughout the majority of the 2020-2021 school year. Even with the adjustments that were made after the initial planning sessions, a procedure came through in which monthly, the community was invited to participate in a family and school learning lab which focused around a key need. Technology and education, resources for families, understanding school curriculum, where to find support from schools were among the topics which were presented in consecutive monthly meetings.

As with many other efforts during the past year, adjustments were necessary because of the COVID 19 pandemic. Instead of live workshops, the learning labs were presented online, recorded and distributed with YouTube, and shared on social media. This adjustment was a learning process, but because of this change, it was not possible to interview or get as much feedback from the participants as previously planned. These modifications should not be viewed as a failure, but a rise to the challenges faced and in the end there were many lessons learned in the process.

Results and Reflection

As the work began it was apparent that a complete partnership between families and schools was underdeveloped. Past efforts had yielded inconsistent results and not been able to create a tradition to be followed. We began with the plan at the very beginning of the school year with great expectations. The first night we were to meet was a foreshadowing of the year to come. It ended up being a day with a smoke advisory for families to stay at home. From there on, COVID lockdowns and other challenges seemed to pop up every month. Looking back, these challenges actually offered us opportunities to plan and improve on our preliminary ideas.

From that very first evening, we discussed, and realized that the society in which our families operate are challenged by a myriad of issues and events which all compete for the time we wanted to spend with them. We decided on that first evening to preserve the experience and offer it in multiple digital formats for live, or delayed viewing. These formats are exciting to us

because they efficiently preserve the work and tools we create for the community for use in the present as well as the future.

The methods we used to collect these tools are divided as follows. Live events were broadcast on Google Meet. This tool allows families to join from a mobile device, tablet, laptop, or Chromebook with only a URL needed for access. Some families in the past have mentioned challenges in connecting due to the need to download specific apps or access specific programs. Google Meet eliminated that need. In addition to the live stream for the workshops, we added a recording for families to access on Youtube. The creation of the playlist on Youtube helped give families flexibility when they may have experienced schedule conflicts. These efforts will also make the presentations available for families when they have time to consider them, or when they want to review previously learned materials. For years to come these resources will be an archive of support which will also save hours of time for our staff members which we can continue to grow and expand as needed.

Quantifying the effectiveness of this project is difficult because of the longevity. These collaborations have been preserved and will continue to serve for years to come. The different format also poses challenges as it is impossible to tell exactly who is watching the videos, only that they are being watched. This anonymity prevents traditional data collection as previously used with other studies.

These differences do not mean that we have no indication of the usefulness of the efforts. We can note that we initially are finding growing interactions with the videos and social media posts with common social media measurements. Initially we have 158 video views of our first set of videos. This may not be a huge amount yet, but it will grow as families continue to become aware of their usefulness. Other measurable points of data measuring our interactions with families include 1821 people reached through Social Media, mainly Facebook, and 2633 deliveries of information through Peachjar, our digital messaging platform.

At a minimum we explored the technical challenges and enabled ourselves to reach out and preserve our efforts for students, families and staff in the future. It is important to always look for ways to be flexible and adapt to our ever changing situation. This was an example of one of those opportunities.

Conclusion

When considering the growth in the staff throughout the year, it is positive to remember the starting point from where we began. Many members of the staff and community have come from a non existent line of communication to a point where they can now continue growing together and implementing for a change in the schools from isolated to partnered efforts. We know the value of these efforts.

> Family engagement is a critical component of school success for students. However, parents of middle and high school students are often less involved in home-and school-based activities than parents of elementary students.

In light of the new challenges we have uncovered through the COVID-19 learning from a distance and collaborating with families from a distance beginning in the Spring of 2020, it is clear that a further development of these types of interactions will be an essential part of any plan for the future. This study served as an effective introduction to the development of digital

partnerships and methods of developing them. Principals, teachers, and other administrators of Churchill County School District have come to recognize the value of this introduction, as well as how further in depth applications will have in their schools.

References

DeSpain, Stephanie N., Greg Conderman, and Lydia Gerzel-Short. "Fostering family engagement in middle and secondary schools." *The Clearing House: A Journal of Educational Strategies, Issues and Ideas* 91.6 (2018): 236-242.

Witte, Amanda L., and Susan M. Sheridan. "Family engagement in rural schools." *Handbook on family and community engagement* (2011): 153-156.

Case Study 10: Building Pathways for Family Support at the District Level --Logic Model

Situation: Churchill CSD continues to move forward with a strategic plan with the end goal of serving students more effectively. One goal of the strategic plan focuses on creating effective engagement and collaboration with families and the community. This study will follow the efforts of new methods being employed to grow the interactions between school and community members, which has been lacking for several years.

Inputs	Outputs		Outcomes -- Impact		
	Activities	Participation	Short	Medium	Long
Budget NWRPDP Facilitators Teachers and other employees of Churchill CSD Administration Expectations Churchill CSD Strategic Plan	8 Live Family/School Learning Lab Workshops which will also be live streamed. 18-24 Recorded sessions posted for asynchronous viewing by families who cannot attend live sessions.	• All Churchill CSD staff and community members will be invited to attend.	Increased opportunities for families to interact and learn with Churchill CSD staff Families increase knowledge of services and opportunities offered for them and their students. **Measures:** Number of notifications received and interacted with. Reservations and attendance to learning lab sessions. Post-reflective survey	Increased communication and collaboration between school and community Increased utilization of tools and services offered to community members. Increased teacher reported job satisfaction **Measures:** Numbers of users of various tools and services. Post Reflective survey	Families increasingly solve problems and help students with school resources. Increased family participation and attendance at all school events. Increased student demonstration of learning as the family-school team strengthens Increased graduation rates **Measures:** Existing school, district, state data.

Assumptions: Family awareness of services and opportunities will engender appreciation and engagement. All participants will learn if they attend workshops or watch recordings. Positive attitudes and beliefs about community engagement. All participants will shift attitudes towards collaboration between school and community.

External Factors: Competing district initiatives; Teacher burnout; Schedule conflicts for collaborative workshop dates. Covid Pandemic.

Figure 12: Case Study 10: Building Pathways for Family Support at the District Level Logic Model

Case Study 11: The Impacts of ELAD Course Work on Instruction

Introduction/Abstract

This case study focused on ten K-12 classroom teachers across two rural Nevada School Districts who have participated in five graduate level courses over the course of the 2020-2021 school year. Due to the impacts of the COVID-19 Pandemic, all course took place virtually. The five courses met the requirements for the Nevada English Language Acquisition and Development (ELAD) Endorsement. This case study focused on change in teacher knowledge, skill, and implementation practices that are effective for English Learners (ELs) for 10 teachers in two different school districts in the Northwest Region.

Instructional Context

Although at the time of this case study there was still a great need for research on the teaching and learning of English learners, there was some consensus on elements of effective high-quality instruction for English learners ([August, D. 2018](#) & [Goldenberg, C. 2008](#)). The elements included:

- Creating access to grade-level content – exposure to grade level content provides both content exposure and context for language development.
- Modifying instruction to account for language proficiency – instructional design that allows for multiple ways for students to access, process, and produce content knowledge not only creates access to content learning it also build language proficiency.
- Developing student academic language – the specific language of each content and the general academic language required to be successful in school is most often used in the school environment. Therefore, it has to be taught explicitly in the school environment.
- Building on student assets – English learners have linguistic, cultural, and individual assets that can be accessed to promote and build academic success.
- Developing student talk and peer to peer academic interactions – learning is a social process that requires interaction; oral discourse also provides a platform for students to process and practice content knowledge and language in a way that reduces the cognitive load.

The skills required for teachers to teach English learners in this way included identifying student English proficiency levels, distinguishing between first and additional language knowledge and skills, assessing both student content knowledge growth and language development growth, matching student knowledge and language skill to instructional approach, understanding how to identify and promote student assets. The elements were used to guide the focus of the five ELAD courses.

The Northwest Regional Professional Development Program (NWRPDP) offers the courses for the ELAD endorsement through a partnership with a university and interested counties biannually. During the 2020-2021 school year, NWRPDP worked with Southern Utah University, and two school districts in the Northwest region to provide the courses. The courses began August of 2020 and were completed in April of 2021. Ten kindergarten through high

school teachers and one paraprofessional completed all five courses. The courses focus on theoretical foundations, practical application to teaching with a focus on decision making that matches instructional design to student need.

Initial Data Planning

Initial data from The Nevada Accountability Portal and The Nevada Department of Education, indicated that there are fewer teachers with the ELAD Endorsement in both Districts when compared to the state average. In addition, the number of English Learners who demonstrated proficiency on the 2019-2020 CRT in English Language Arts (ELA) and math in both districts was significantly lower than the district average proficiency rate. The graduation rate for students who had ever been categorized as an English Learner in School District One is higher than the state average at 91%. The graduation rate for students who had ever been categorized as an English Learner is just under the state average at 76.2%. The overall graduation rate for the 2018-2019 school year was 83%. The graduation rate for students who had ever been categorized in District One is a celebration. It was higher than the state average. The data in both districts indicated that professional learning focused on meeting the needs of the ELs could potentially benefit students and positively impact EL achievement. The table below compares information about the number of ELs, the number of teachers who are ELAD endorsed, achievement and graduation rates for the state of Nevada, School District 1, and School District 2.

Table 33: *Comparison of EL and Achievement Data for State and Two Districts*

2018-19	State	School District 1	School District 2
Percentage of Students who are EL	14.8%	5.2%	5.5%
Percentage of content teachers with ELAD Endorsement	9.7%	4.2%	8.4%
Percentage of ELL teachers	1%	2%	3.3%
Graduation Rates for students who have ever been EL	76.8%	91.9%	76.2%
ELA proficiency rate average	48.5%	55.4%	42.7%
ELA Proficiency rate for ELs	15.8%	19.8%	11.1%
Math Proficiency rate average	37.5%	46.3%	34%

2018-19	State	School District 1	School District 2
Math proficiency rate for ELs	14.6%	18.9%	7.4%

In addition, the focus of the case study supports the following goals in the Statewide Plan for the Improvement of Pupils (STIP):
- Goal 2: All students have access to effective educators.
- Goal 6: All students and adults learn and work together in safe environments where identities and relationships are valued and celebrated.

Delivery of Services

The five virtual courses were conducted August 2020 through April 2021 using the LMS Google Classroom. Each course had both synchronous and asynchronous components. NWRPDP provided the instructor and books. Students paid tuition to SUU.

Results and Reflection

Teachers were asked a total of 28 questions about their change in knowledge and level of implementation before and after taking the five ELAD courses. All 28 questions showed a significant improvement when before and after the courses were compared. The complete question list and results are here.

This section of the case study focused on the answers of a smaller set of questions that tightly align with the elements of high-quality effective instruction for ELs and the two focus goals from Nevada STIP. The two goals are 1. All students have access to effective educators, and 2. All students and adults learn and work together in safe environments where identities and relationships are valued and celebrated. The questions and the teacher responses are in the table below and indicate that there was teacher growth in both knowledge about teaching and learning with ELs in mind and a change in both their teaching. The final section will reflect on the results and explore implications.

The questions in Table 2 focused on knowledge before and after taking the ELAD courses and level of implementation of teacher actions that positively impact the learning for English Learners. The teachers were asked to complete a Likert scale where they self-evaluated their knowledge before and after taking the courses. A level 1 indicated the lowest level and a level 5 indicated the highest level. The results indicated significant change in both knowledge and level of implementation of instructional actions that positively impact English Learners. They also indicated that teachers are now better able to identify barriers specific to English Learners.

Table 34: *Post-Reflective Survey Questions & Results*

Course	Question	Mean Before	Mean After	t-score	p-value
Language Acquisition	My knowledge about how second languages are acquired.	2.20	4.40	-7.57	< .001
Language Acquisition	I evaluate student skills from a second language acquisition perspective.	1.70	3.90	-16.50	< .001
Language Acquisition	I evaluate student behavior from a second language perspective.	1.50	4.00	-8.13	< .001
Assessment	My knowledge about how to determine students' current level of English proficiency.	1.60	4.10	-11.18	< .001
Assessment	My knowledge about how to incorporate language assessment into content assessment.	1.60	4.30	-10.37	< .001
Assessment	My knowledge about how to formatively assess student language proficiency and use.	1.70	4.20	-9.30	< .001
Assessment	I include questions about language in content assessments.	1.70	3.70	-6.71	< .001
Assessment	I use formative assessments that help determine student language proficiency and use.	1.60	3.70	-7.58	< .001
Methods	My knowledge about how to incorporate scaffolds, strategies, and supports for language development into instruction.	2.10	4.60	-7.32	< .001
Policies & Critical Issues	My knowledge of systemic challenges English Learners face.	2.00	4.30	-7.67	< .001
Policies & Critical	I recognize situations where laws and policies regarding English Learners come	1.40	3.70	-10.78	< .001

Course	Question	Mean Before	Mean After	t-score	p-value
Issues	into play.				
Policies & Critical Issues	I recognize systemic barriers English Learners face.	2.10	4.50	-7.86	< .001

Teachers also answered the question, how has my teaching changed as a result of taking the ELAD courses? Their answers included examples like creating more wait time, being more intentional about grouping students, and including more specific scaffolding to make sure students can access and process instruction. One teacher wrote, "I now am more able to recognize the difference between when a student is not understanding the language in a question or simply not understanding the question." Another teacher wrote, "I am more mindful in regard to my EL students and I take more time to intentionally create the access that they need." A third said, "I am now considering my ELL students instead of just leaving it up to ESL teacher." All three of these responses indicated teachers shift in awareness of ELs needs and how they respond to them and also indicate a greater sense of responsibility to the education of their students learning English. The shift in both awareness of ELs instructional needs and the shift in instruction potentially lead to our English learners having greater access to the elements of effective high-quality instruction they need to be successful in our schools.

References

August, D. (2018). Educating English Language Learners: A Review of the Latest Research. *American Educator*, *42*(3), 4.

Goldenberg, C. (2008). Teaching English language learners: What the research does-and does not-say.

Case Study 11: The Impacts of ELAD Course Work on Instruction—Logic Model

Situation: General education teachers taking the five courses to earn their ELAD Endorsement

Inputs	Outputs		Outcomes -- Impact		
	Activities	Participation	Short	Medium	Long
Curriculum, Instruction, and Methods course taught through SUU on Saturdays January 2021 – May 2021 NWRPDP – Facilitator/Coach K-12 General education teachers from 3 rural counties NWRPDP budget for supplies and books	Curriculum, Instruction, and Methods for English Learners Course • Theoretical foundations of teaching methodologies appropriate for ELLs. • Apply knowledge of SLA theories to select appropriate classroom practices, strategies, and methods • Gain knowledge of the SIOP Model of sheltered instruction • Explore and apply the instructional components of the WIDA framework for teaching ELS. • Evaluate current curriculum from a English Language Development lens	18 teachers from three rural districts participate in the graduate level course	Teachers increase their knowledge of curriculum and methods for teaching English Learners Measures: Teacher post-reflective survey, Teacher self-assessments, Exit tickets	Increased use of teaching methods for English Learners Measures: Teacher extended survey	Increased student achievement. Increased graduation rates. Measures: Existing district/school data

Assumptions: Change in teacher pedagogy leads to increased student learning and increased teacher efficacy.

External Factors: Individual teacher differences, competing initiatives, Covid-19 impacts.

Figure 13: Case Study 11: The Impacts of ELAD Course Work on Instruction Logic Model

Case Study 12: NWRPDP National Board Certification Cohort: Elevating Teaching Through the National Board Cohort during COVID-19

Introduction

The 2020-2021 school year has been like no other! With a Global Pandemic, our country was forced to close schools across America in order to keep students and teachers safe. Many teachers had started their National Board process but found themselves in situations that were challenging to continue as normal. As a result, National Boards extended its deadlines to submit components. Teachers were given an additional month extension during the 2019-2020 school year, as well as an option to extend to October 2020 or defer components completely to the 2020-2021 School year. With this option, many teachers chose to extend the submission date for 1, 2, 3, or all 4 components. It became a challenge for the Northern Nevada National Board Cohort to meet the diverse needs of candidates who were all in different situations within their portfolio process. Some teachers were starting the year in a distant learning or hybrid learning situation and some teachers were forced to take on different roles than their original certificate area focus and most teachers had a decline in the number of students that they were used to working with due to social distance safety protocols. Fortunately, National Boards stepped up to the challenges across the country and worked hard to provide educators with a plethora of professional resources to support teachers during Covid-19. Given that many educators were required to suddenly teach virtually, National Board prioritized most of their resources to include webinar series, virtual tools/platforms, and virtual lessons. Resources were organized in a Covid-19 tab, so teachers could easily access them. Other topics included much needed guidance for teachers during this challenging time: Teacher Self-Care and SEL practices, Equity and Social Justice, Specific content area, Community/Student & Parent Engagement, Professional Learning and Support for National Board Candidates.

Need for NBCT's

According to a report from The New Teacher Project (TNTP), it is estimated that over 10,000 teachers that are categorized as 'irreplaceable' leave our nation's 50 largest school districts each year. Principals report how difficult it is to replace highly effective teachers with someone that is equally qualified. The TNTP teacher retention roadmap shows that it can take up to 11 years to find a replacement teacher that is of similar qualifications as the 'irreplaceable teacher.' Consequently, "TNTP launched the Irreplaceable study, a 4-district study encompassing 90,000 teachers, 2,100 schools and 1.4 million students aiming to explore why great teachers leave their schools at such startling rates" (TNTP Teacher Retention Roadmap, 2012). Part of the study indicated that many Principals struggle with differentiating the varying needs of their highest performing teachers and their lower performing teachers. Principals are encouraged to: 1. Tell their effective teachers that they are performing at a high level, 2. Inform educators that they want them back for the following school year, 3. Ask teachers what they would like in order to ensure that they will stay at the school. With this in mind, it is more important than ever before to retain and empower our teachers. Attracting teachers to the National Board process provides

educators who are accomplished teachers pathways to meaningful professional growth experiences, which empower them to continue to grow and make improvements to meet students and their diverse needs. Becoming a NBCT also provides teachers with professional compensation and "recognizes the complexity of the job and compensates teachers for both their professional expertise and ongoing growth" (NBPTS).

National Board Certification in Nevada

As of 2020, there are 128,555 teachers who are Nationally Board Certified across our country, making up 3% of our nation's teachers. California, Florida, North Carolina, and Washington have the most Board-Certified teachers. Across the state of Nevada, there are currently 1,187 National Board-Certified teachers. This year (2020), 100 teachers became National Board Certified in Nevada. Washoe County had 16 teachers certify in 2020, with a total of 352 teachers that are board certified. Carson City added 5 more National Board-Certified teachers to their total of 18. Douglas County has a total of 18 National Board teachers. Lyon County has a total of 19 board certified Teachers, Churchill has a total of 9 certified teachers and Storey County has 1 National Board-Certified teacher. With the positive outcomes for teachers and increased student achievement related to the NBCTs, recruitment within these districts has been a priority in order to retain and lesson the attrition rate of accomplished teachers, especially in the smaller districts.

Initial Data and Planning

With so many changes due to Covid-19, the Nevada National Board Cohort adjusted its structure according to the data and needs of the teachers at the end of the 2019-2020 cycle. In June 2020, 16 Candidates took advantage of submitting their final components and on December 12, 2020, 14 teachers from Northern Nevada became NBCT's. 10 Candidates chose to take advantage of the October submission and received their results on February 27, 2021. Of those candidates, seven achieved National Board Certification. Overall, 21 Educators became National Board-Certified Teachers in 2020. Sixty-five existing candidates from Washoe County School District, Lyon County, Carson City, and Douglas County continued their National Board journey, as they had extended or deferred 1-4 components.

2020-2021 Cohort Details

For the 2020-2021 school year, the Northern Nevada National Board Cohort started with six new candidates from Washoe County School District and Douglas County, while continuing to support the 65 teachers who deferred their component submission due to Covid-19 challenges.

Delivery of Service

During the 2020-2021 school year, the Cohort met monthly starting in August and ended Cohort sessions in early June within a virtual setting. The entire portfolio submission was originally due to National Board on May 14, 2021 and teachers taking the Component 1 assessment had a window of time from mid-April till mid-June. However, with Covid-19, National Board extended the portfolio submission deadline to teachers and provided them with two options to

finish their portfolio work (June 25th[h] or defer into the 2021/2022 school year). Component 1 was extended with the window of time from April 15th-August 15th. The structure of the cohort ensured that candidates had built in support opportunities throughout the year. This support included ten-monthly cohort meetings and weekly virtual coaching sessions throughout the year. Candidates had the option to attend virtual sessions that were designed to meet their needs and based on components they were taking. The sessions were focused on collaboration amongst candidates, trouble shooting, sharing resources, and providing feedback to each other. For each session, candidates were emailed a Landing Doc with materials needed for each session and a plethora of resources that might be helpful as they worked on each component.

There were six Candidate Support Providers (CSP's) to facilitate cohort meetings/virtual coaching office hours and support the varying needs of the candidates. Candidates were encouraged to upload their work to the Northern Nevada Weebly cite to receive feedback around their written commentary, forms or videos. Feedback was provided within a 2-3-day period. Recognizing that candidates needed additional support, CSP's also met with candidates individually and in small group virtual settings.

Groupings for the cohort were structured to allow candidates working on the same components and/or certificate areas to be grouped together. Throughout the year, groups in each session ranged from 12-20 teachers. Most candidates commented that they appreciated meeting virtually because it was more convenient for their family. Candidates also commented that the groups were smaller, and they were able to build relationships with other candidates.

Table 35: *Candidate Feedback*

Prefer Virtual Sessions	Prefer In-Person Sessions	Prefer Blended Sessions
53%	2%	*45%*

Supporting Teachers

Outcome one: Candidates commented that they felt supported while working through the component requirements. Each component session concluded with an exit ticket for participants to complete and assess their take-aways and areas that would be helpful for future cohort sessions. This information also served as a formative assessment for CSP's and allowed us to build in areas of support for the varying needs of the group. Overall, candidates commented that cohort sessions helped them grasp the overall big picture and sessions also provided tools such as graphic organizers and professional resources that provided them with meaningful information that guided their work.

Instructional practice

Outcome two: participants will change their instructional practice according to component requirements. During each session participants completed a written reflection questionnaire related to the given component. The questionnaire asked teachers to report if they had refined an

existing instructional practice or tried a new instructional practice related to component requirements. They also reflected on what they might do differently if they used the given tool or approach again.

Results and Reflection

The findings of this study revealed significant growth on teachers. Teachers reported growth in areas such as leadership, effective instruction, and increased subject mastery as a result of the National Board process. Findings also suggest positive change on each of the Five Core Propositions, such as "teachers are committed to students and their learning." Teachers also commented that they set more high worthwhile goals for their students.

Responses to the question: **Do you think differently about any of your previous teaching practices or have a shift in mindset about anything now that you have participated in this cohort? How will this experience impact you as an educator?**

- *I am more aware of why I do what I do in the classroom and have had to focus in and narrowly examine best practices AND I've begun to view data gathering in a more favorable light.*
- *The NBCT Standards, 5 core props, and Architecture of Accomplished Teaching are always in my mind now as I plan, teach, collaborate and reflect!!!*
- *This is the best PD I have done in 27 years.*
- *I tell people all the time, even if I didn't certify this process has made me a better teacher. The standards are incredible, and I am more focused on formative and summative assessments, teaching the whole child, adapting adopted curriculums to better meet my student's needs.*
- *I absolutely look at my teaching in a new light. I want to do more and make more decisive decisions to support my students.*

Within the surveys, teachers also reported that the cohort and the support from the Candidate Support Providers (CSP's) was helpful.

- *Thank you for all of your support throughout this. There is no way I could have done this without the support of the cohort. The feedback is crucial and all of the CSP's have been so helpful.*
- *Thank you all for your time, suggestions, and encouragement. It makes a tremendous difference. :-)*
- *This process has made me a more reflective and effective educator and it's due to this cohort of amazing and supportive teachers!*
- *The cohort mentors helping were the #1 thing that got me through this. You have chosen intelligent, patient, and super supportive, hard-working people that I could not have done this without!*
- *I cannot stress enough that I would NOT have been able to complete this process without the help from this cohort. The process of NB is a lot of work. It is confusing at first and stressful all the way through. It definitely took the informational meetings and incredible support from the cohort mentors to get me through and I can't thank you all enough.*

Teachers also completed a survey about their plans for next year. Due to Covid-19, National Board provided candidates with 2 extension opportunities. The original due date was May 14, 2021. With the extensions, teachers could choose from turning in components on June 25th or defer to May 2022. According to the survey results, 30 of the teachers will be continuing with the cohort next year to complete 1-4 components. Survey results also indicated that teachers procrastinated and struggled to finish their portfolio requirements due to the Pandemic and shift in work/life balance. With more teachers continuing into next year, we will have to focus on restructuring the structure of the cohort and balance to meet the needs of the new candidates, but also continue to support the teachers who are returning.

Table 36: *Survey Results for Future Support*

Components	I plan on turning in a component(s) by June 25th	I plan on turning in my component(s) next year (2022)	Components Already Completed
Component 1	33%	6%	61%
Component 2	53%	13%	34%
Component 3	46%	27%	27%
Component 4	40%	2%	58%

Candidates across the North West Region rated the overall quality of the Northern Nevada National Board cohort sessions for the 2020-2021 year with very high satisfaction ratings. The mean ratings consisted of mean ratings between 4 and 5, on a 5-point scale.

(Scale 1 = not at all, 3 = to some extent, 5 = to a great extent	Region
1. The activity matched my needs	4.71
2. The activity provided opportunities for interactions and reflections.	4.82
3. The presenter/facilitator's experience and expertise enhanced the quality of the activity.	4.82
4. The presenter/facilitator's efficiently managed time and pacing of activities.	4.76
5. The presenter/facilitator modeled effective teaching strategies.	4.59
6. The activity added to my knowledge of standards and subject matter content.	4.53
7. The activity will improve my teaching skills.	4.88
8. I will use the knowledge and skills from this activity in my classroom or professional duties.	4.94
9. The activity will help me meet the needs of diverse student populations (e.g., gifted and talented, ELL, special ed., at-risk students).	4.88
10. If Yes, has your past participation changed your Teaching Instruction or Administrator Responsibility?	4.53

Conclusion

In conclusion, despite the challenges that this year brought to teachers, participants shared that they enjoyed the supportive and collaborative environment that the cohort experience provided for them. In moving forward, we will recruit approximately 45 new teachers for next year's cohort on top of the 30 candidates who will be continuing with us. In addition, we will continue providing support and feedback with six CSP's. As we move forward in our current Pandemic, we will also plan and be prepared for a blended style cohort with both face-to-face and virtual meetings. Throughout the year, we will also encourage more collaboration (PLC style) with like certificate area groups and provide timelines with due dates, so candidates can manage their time more efficiently.

References & Resources:

National Board for Professional Teaching Standards (2021) National Board certification. Retrieved from National Board for Professional Teaching Standards

National Board for Professional Teaching Standards (2020) Core-Connections Resources. Retrieved from National Boards for Professional Teaching Standards Core Connections Resources

The New Teacher Project. (2013). Perspectives of Irreplaceable Teachers. Retrieved from
[Perspectives of Irreplaceable Teachers](#)

Case Study 12: National Board Cohort--Logic Model

Situation: The National Board Process is a voluntary system that is available to all teachers in our country. When teachers become National Board-Certified Teachers, they have proven to meet a set of high and rigorous standards. Accomplished teachers have the flexibility to complete the National Board process in 1-3 years. With Covid-19 pandemic disruptions, teachers from the 2019-2020 cycle have extended their due dates to the May 2021 deadline. The challenge is meeting the diverse needs of candidates who are in different places in the process within a virtual setting.

Inputs	Outputs		Outcomes -- Impact		
	Activities	Participation	Short	Medium	Long
Funding (supplies, substitutes, and stipends) RPDP Director RPDP Facilitator Candidate Support Providers National Board Candidates	Year-long professional learning centered around each of the 4 National Board Components Year 1 = 45 hours of professional learning Year 2 = 45 hours of professional learning Optional weekly virtual support sessions Individual focus on National Board portfolio components (1,2,3,4) Reflective practice, and Goal Setting using the Architecture of Accomplished Teaching, 5 Core Propositions, Certificate Area Standards and the Level 4 Rubrics.	7 Candidate Support Providers/ Facilitators 67 Year 1 and 2 Participants 30 MOC-Maintenance of Certificate (Renewal) Participants	National Board Candidates report increased confidence with their teaching pedagogy. National Board Candidates indicate professional growth and increased reflective practice during participation in the cohort. National Board candidates increase referral of colleagues to the Northern Nevada National Board Cohort. **Measures:** Post-reflective survey, Coaching feedback.	Accomplished teachers who participate in this cohort increase leadership roles at their sites, in their districts, and within the profession. National Board candidates who complete the 1–3-year process increase their teaching alignment to the National Board Standards. **Measures:** Post-reflective survey.	Increased student achievement. Increased teacher leadership roles in state agencies, union leadership, or professional associations. **Measures:** Existing school, district, and state data.

Assumptions: National Board Candidates are committed to becoming a National Board Certified Teacher. With multiple supports and sessions that are catered to their diverse needs, teachers will increase their self-efficacy, reflective practice and work in PLC's to meet the needs of their students.

External Factors: COVID-19 Pandemic disruptions (class/school exclusions requiring distance learning), Substitute shortage, teacher fatigue, and financial limitations.

Figure 14: Case Study 12: National Board Cohort Logic Model

Appendices

Appendix A: Overview of Regional Services 2020–21

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	118	55	48	31	95	347
Churchill	90	47	160	11	63	371
Douglas	129	43	62	21	37	292
Lyon	105	40	42	15	6	208
Storey	13	12	10	2	11	48
Washoe	516	74	105	67	77	839
Totals	971	271	427	147	289	2,105

Table 2: Duplicated Number of Educators Trained by the NWRPDP

District	ES Teachers	MS Teachers	HS Teachers	Administrators	Others*	Total by District
Carson	205	109	81	56	127	451
Churchill	180	201	160	24	89	654
Douglas	301	145	116	45	75	682
Lyon	187	62	66	31	8	354
Storey	42	18	17	5	81	163
Washoe	672	127	169	111	89	1,168
Totals	1,587	662	609	272	342	3,472

*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 2,105 educators, or 33% of the approximate 6,347 educators employed in the region (as reported by each district), participated in programs provided by the NWRPDP during 2020-21 (unduplicated count). In terms of how NWRPDP participants are broken down by district, in 2020-21, 16% of participating teachers and administrators were from Carson City, 18% were from Churchill County, 14% were from Douglas County, 10% were from Lyon County, 2% from Storey County, and 40% from Washoe County. Many educators attended programs on more than one occasion, resulting in a total of 3,472 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 2020–21 school year.

NWRPDP Type of Service

- Consulting 10%
- Observation/ Mentoring 6%
- Instructional 84%
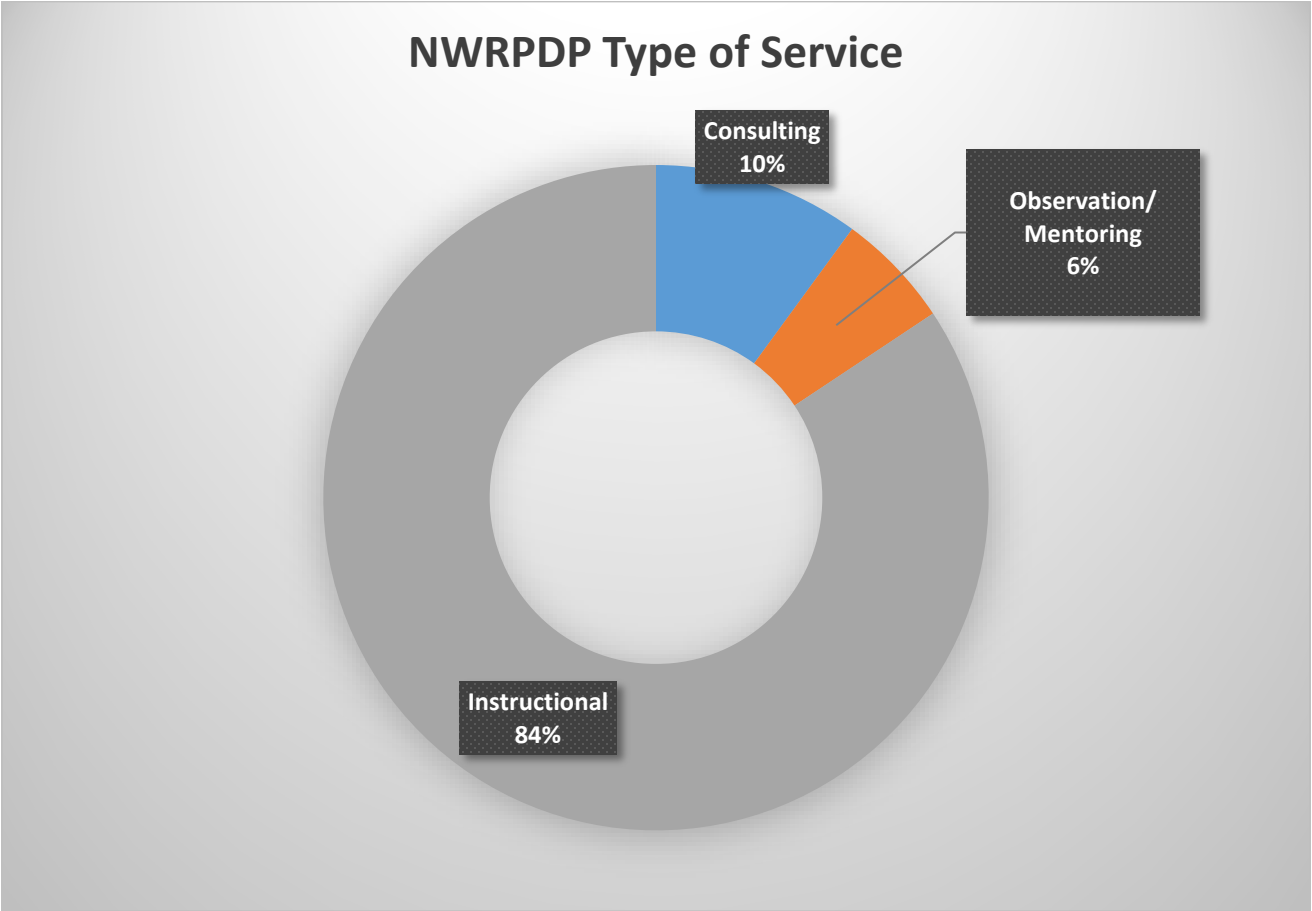
Figure 1: Types of Services Provided by the NWRPDP

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 2020–21 school year were NVACS trainings in areas of NVACS Computer Education and Technology, Math, Science, and Literacy/English. The remaining areas of focus were diverse, and included professional learning opportunities in Family Engagement, Teacher Leadership, Social Studies, STEM, Computer Science, and Mindset/SEL.

NWRPDP Focus of Service

- Computer Education & Technology 20%
- Other 14%
- NVACS Math 14%
- NVACS Science 12%
- Administrative 10%
- NVACS Literacy & English (all aspects) 8%
- ELAD 4%
- Teacher Leadership 3%
- NVACS Social Studies 3%
- Computer Science 3%
- Family Engagement 2%
- NEPF 2%
- Mindset/SEL 2%
- PreK-Third Grade 1%
- NVACS STEM 1%
- Assessment 1%
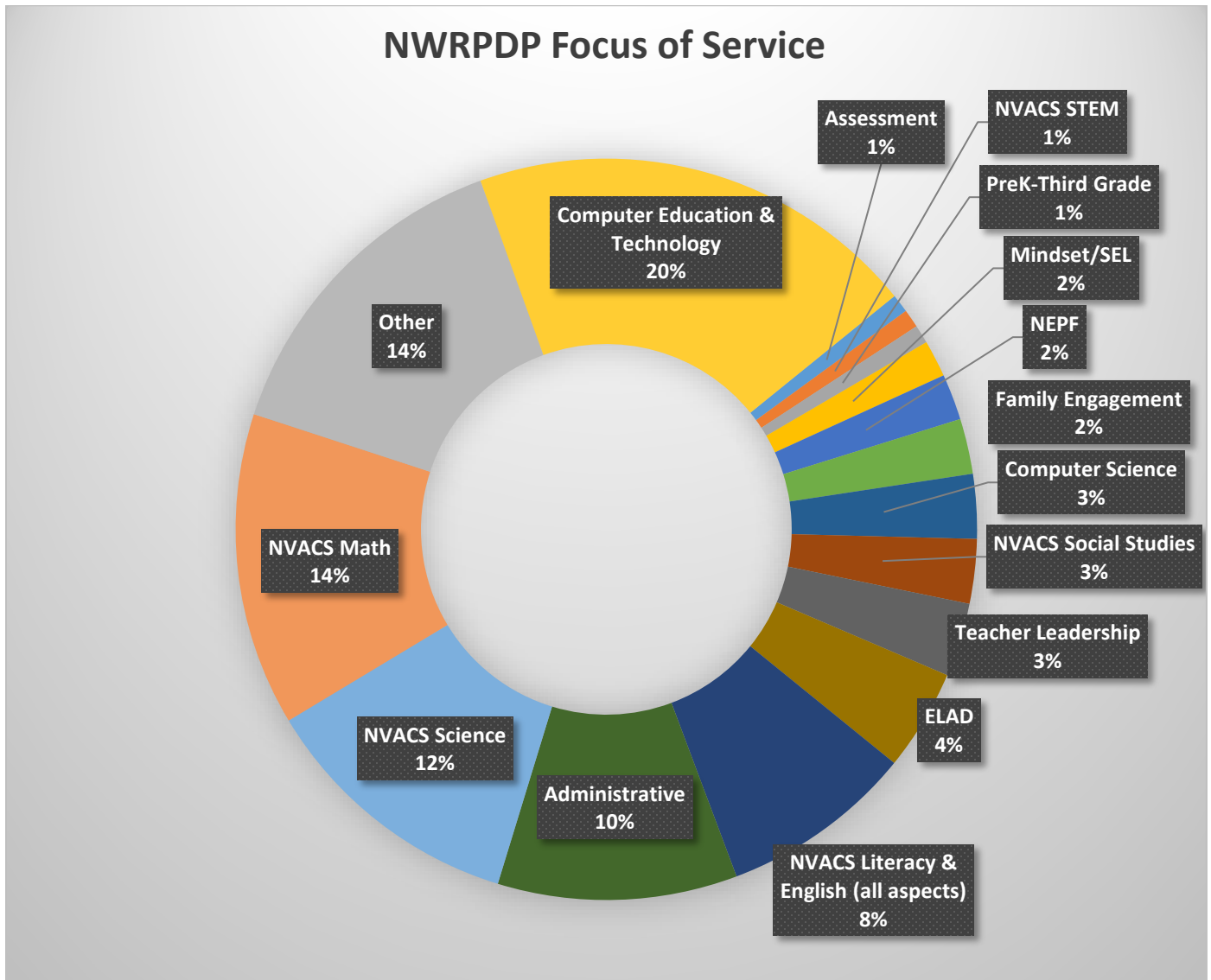
Figure 2: Focus of Services of the NWRPDP

Appendix B: Carson City School District Services Summary 2020–21

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/English, the Nevada Educator Performance Framework, Math, Computer Science, and Social Studies. Other professional learning included Science and STEM and Mindset/SEL.

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	4.43	4.60
The activity provided opportunities for interactions and reflections	4.49	4.76
The presenter/facilitator's experience and expertise enhanced the quality of the activity.	4.70	4.79
The presenter/facilitator efficiently managed time and pacing of activities.	4.72	4.77
The presenter/facilitator modeled effective teaching strategies.	4.57	4.74
This activity added to my knowledge of standards and/or subject matter content.	4.46	4.59
The activity will improve my teaching skills.	4.42	4.63
I will use the knowledge and skills from this activity in my classroom or professional duties.	4.57	4.70
This activity will help me meet the needs of diverse student populations (e.g., gifted and talented, ELL, special education, at-risk students).	4.43	4.63

Number of Educators Trained by NWRPDP

	Unduplicated	Duplicated
ES Teachers	118	205
MS Teachers	55	109
HS Teachers	48	81
Administrators	31	56
Others	95	127
Totals	347	451

Carson educators were 18% of the educators served in the region (Using the unduplicated regional count of 1,884 educators).
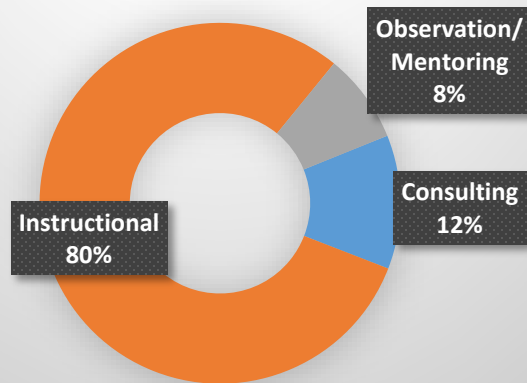
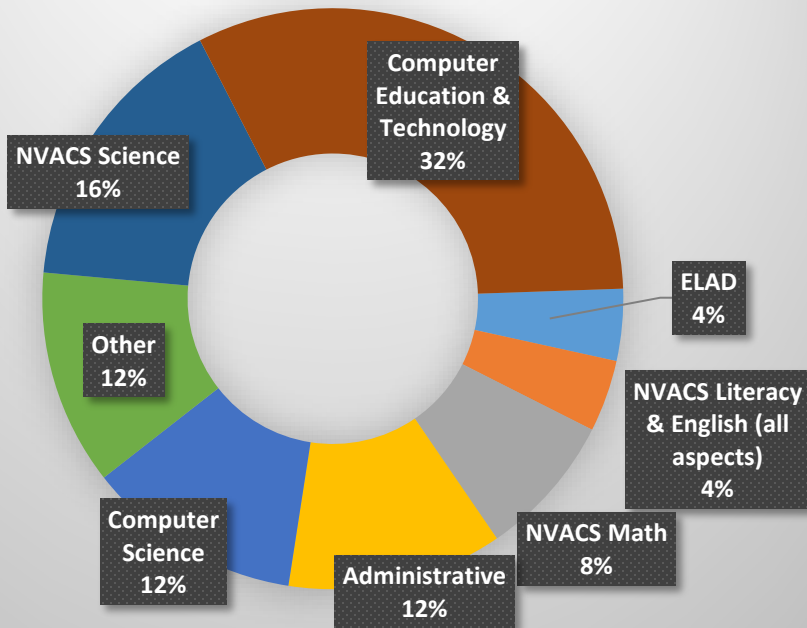**Figure 1: Types of Services Provided**

Figure 2: Focus of Services

Appendix C: Churchill County School District Services Summary 2020–21

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 Math, STEM, and Computer Science followed by Science, Parent and Family Engagement, PreK-Third Grade support, and the Nevada Educator Performance Framework, Mindset/SEL, and NVACS in Literacy/English.

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	4.61	4.60
The activity provided opportunities for interactions and reflections	4.83	4.76
The presenter/facilitator's experience and expertise enhanced the quality of the activity.	4.85	4.79
The presenter/facilitator efficiently managed time and pacing of activities.	4.69	4.77
The presenter/facilitator modeled effective teaching strategies.	4.80	4.74
This activity added to my knowledge of standards and/or subject matter content.	4.70	4.59
The activity will improve my teaching skills.	4.76	4.63
I will use the knowledge and skills from this activity in my classroom or professional duties.	4.74	4.70
This activity will help me meet the needs of diverse student populations (e.g., gifted and talented, ELL, special education, at-risk students).	4.80	4.63

Number of Educators Trained by NWRPDP

	Unduplicated	Duplicated
ES Teachers	90	180
MS Teachers	47	201
HS Teachers	160	160
Administrators	11	24
Others	63	89
Totals	371	654

Churchill educators were 8% of the educators trained in the region (Using the Unduplicated regional count of 1,884 educators).
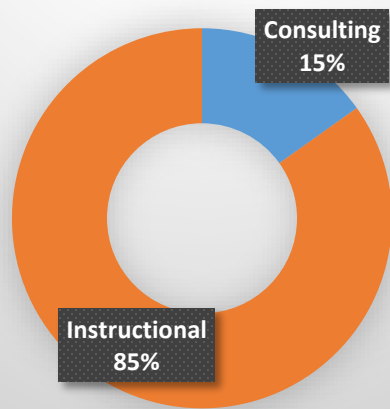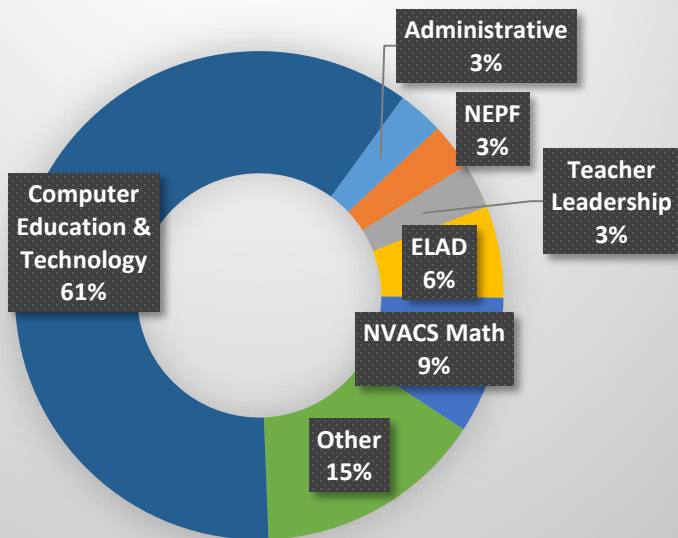
Figure 1: Types of Services Provided

Figure 2: Focus of Services

Appendix D: Douglas County School District Services Summary 2020–21

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

The majority of services provided this year were in support of the Nevada Academic Content Standards in Math followed by Computer Science and Computer Education and Technology, the Nevada Educator Performance Framework, and NVACS in Literacy/English. Professional learning was also provided in PreK-Third grade support, NVACS Science and STEM as well as Leadership and Mindset/SEL.

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	4.55	4.60
The activity provided opportunities for interactions and reflections	4.82	4.76
The presenter/facilitator's experience and expertise enhanced the quality of the activity.	4.84	4.79
The presenter/facilitator efficiently managed time and pacing of activities.	4.81	4.77
The presenter/facilitator modeled effective teaching strategies.	4.81	4.74
This activity added to my knowledge of standards and/or subject matter content.	4.48	4.59
The activity will improve my teaching skills.	4.61	4.63
I will use the knowledge and skills from this activity in my classroom or professional duties.	4.65	4.70
This activity will help me meet the needs of diverse student populations (e.g., gifted and talented, ELL, special education, at-risk students).	4.62	4.63

Number of Educators Trained by NWRPDP

	Unduplicated	Duplicated
ES Teachers	129	301
MS Teachers	43	145
HS Teachers	62	116
Administrators	21	45
Others	37	75
Totals	292	682

Douglas educators were 15% of the educators trained in the region (Using the Unduplicated regional count of 1,884 educators).
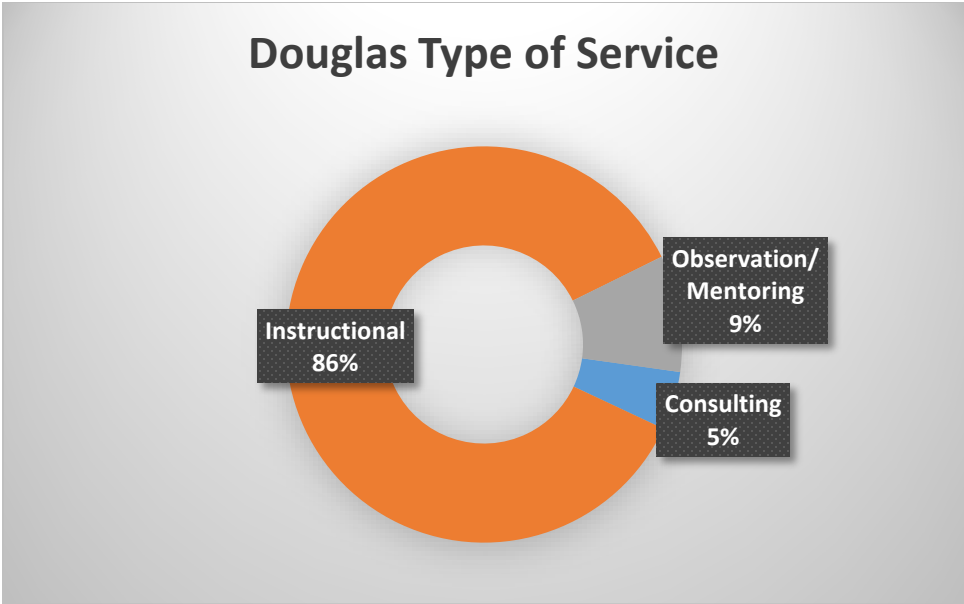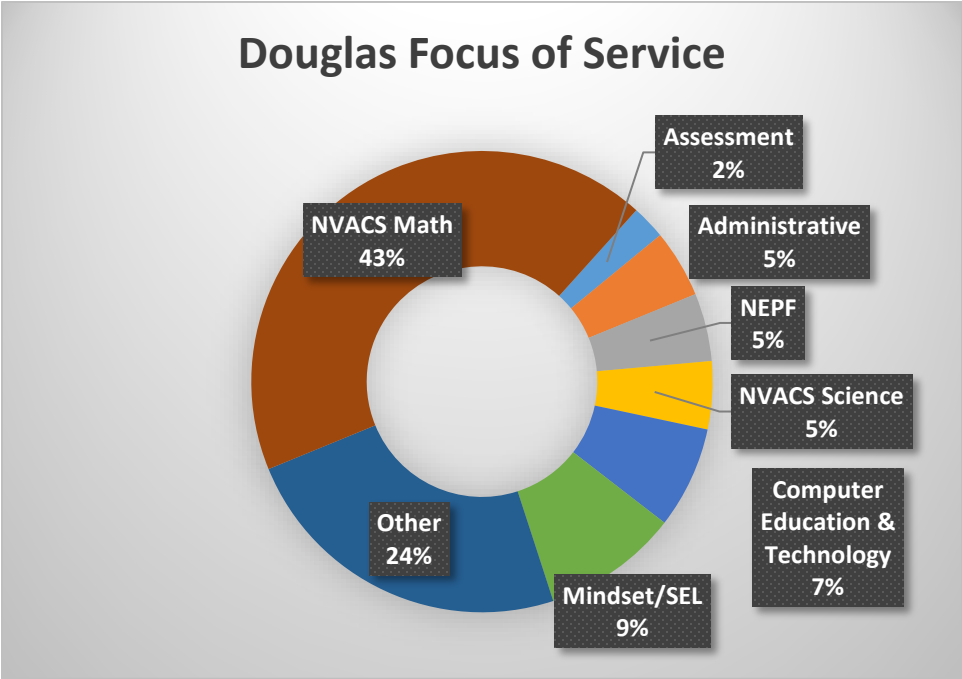
Figure 1: Types of Services Provided

Figure 2: Focus of Services

Appendix E: Lyon County School District Services Summary 2020–21

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 learning facilitator coordinated services for LCSD.

The majority of services provided this year were in support of the Nevada Academic Content Standards in Math and English Language Learners followed by NVACS Literacy/English, Science, and Parent and Family Engagement as well as the Nevada Educator Performance Framework, Computer Science and Computer Education and Technology, and STEM.

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	4.74	4.60
The activity provided opportunities for interactions and reflections	4.84	4.76
The presenter/facilitator's experience and expertise enhanced the quality of the activity.	4.80	4.79
The presenter/facilitator efficiently managed time and pacing of activities.	4.77	4.77
The presenter/facilitator modeled effective teaching strategies.	4.80	4.74
This activity added to my knowledge of standards and/or subject matter content.	4.77	4.59
The activity will improve my teaching skills.	4.78	4.63
I will use the knowledge and skills from this activity in my classroom or professional duties.	4.80	4.70
This activity will help me meet the needs of diverse student populations (e.g., gifted and talented, ELL, special education, at-risk students).	4.77	4.63

Number of Educators Trained by NWRPDP

	Unduplicated	Duplicated
ES Teachers	105	187
MS Teachers	40	62
HS Teachers	42	66
Administrators	15	31
Others	6	8
Totals	208	354

Lyon educators were 12% of the educators trained in the region (Using the Unduplicated regional count of 1,884 educators).
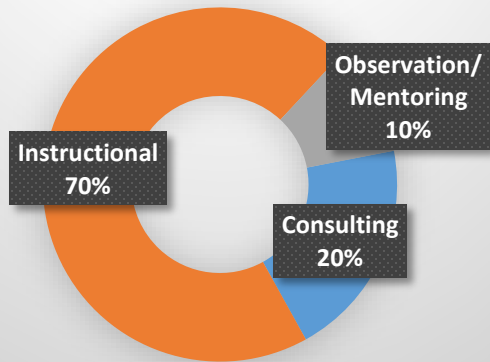
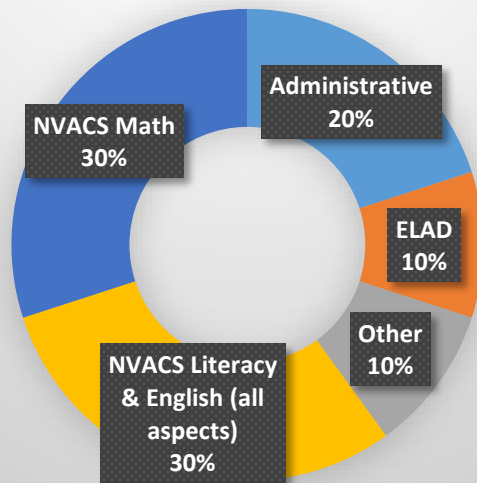**Figure 1: Types of Services Provided**

Figure 2: Focus of Services

Appendix F: Storey County School District Services Summary 2020–21

> **Storey County School District** has four schools: two elementary schools, one middle school, and one high school. One administrator was dedicated to organizing professional development this year. Storey has less than 3% of the schools in the NWRPDP Region, which includes 154 schools.
>
> SCSD received services in support of the Nevada Academic Content Standards in Math and Science followed by Literacy/English and STEM.

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	5.00	4.60
The activity provided opportunities for interactions and reflections	5.00	4.76
The presenter/facilitator's experience and expertise enhanced the quality of the activity.	5.00	4.79
The presenter/facilitator efficiently managed time and pacing of activities.	5.00	4.77
The presenter/facilitator modeled effective teaching strategies.	5.00	4.74
This activity added to my knowledge of standards and/or subject matter content.	5.00	4.59
The activity will improve my teaching skills.	5.00	4.63
I will use the knowledge and skills from this activity in my classroom or professional duties.	4.00	4.70
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	4.63

Number of Educators Trained by NWRPDP

	Unduplicated	Duplicated
ES Teachers	13	42
MS Teachers	12	18
HS Teachers	10	17
Administrators	2	5
Others	11	81
Totals	48	163

Storey educators were <1% of the educators trained in the region (Using the Unduplicated regional count of 1,884 educators).
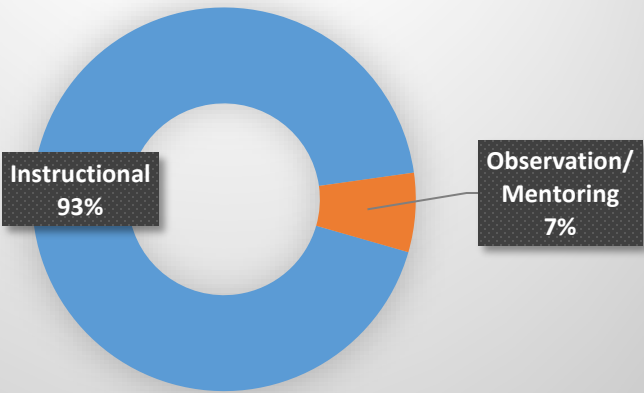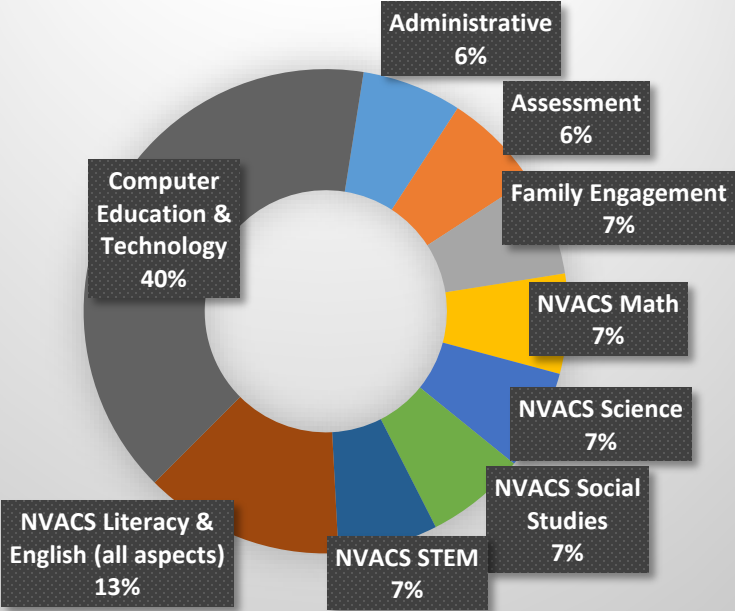
Figure 1: Types of Services Provided

Figure 2: Focus of Services

Appendix G: Washoe County School District Services Summary 2020–21

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.

The majority of services provided this year were in support of the Nevada Academic Content Standards in Literacy/English, Social Studies, and Math followed by Science, Leadership, Parent and Family Engagement, PreK-Third Grade (NELIP), and STEM as well as Computer Science 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)	WCSD	Region
The activity matched my needs	4.72	4.60
The activity provided opportunities for interactions and reflections	4.87	4.76
The presenter/facilitator's experience and expertise enhanced the quality of the activity.	4.81	4.79
The presenter/facilitator efficiently managed time and pacing of activities.	4.77	4.77
The presenter/facilitator modeled effective teaching strategies.	4.78	4.74
This activity added to my knowledge of standards and/or subject matter content.	4.71	4.59
The activity will improve my teaching skills.	4.73	4.63
I will use the knowledge and skills from this activity in my classroom or professional duties.	4.80	4.70
This activity will help me meet the needs of diverse student populations (e.g., gifted and talented, ELL, special education, at-risk students).	4.72	4.63

Number of Educators Trained by NWRPDP

	Unduplicated	Duplicated
ES Teachers	516	672
MS Teachers	74	127
HS Teachers	105	169
Administrators	67	111
Others	77	89
Totals	839	1168

Washoe educators were 47% of the educators trained in the region (Using the Unduplicated regional count of 1,884 educators).
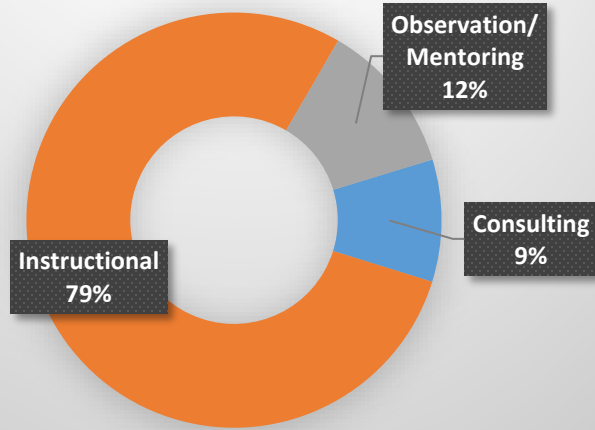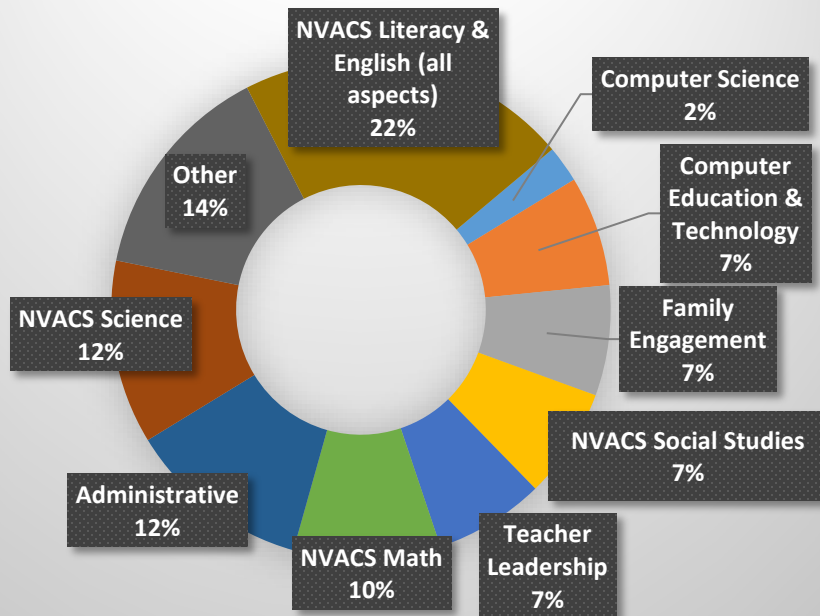
Figure 1: Types of Services Provided

Figure 2: Focus of Services