Table of Contents

A. Significance 1
(1) Background and Overview 1
(2) Absolute priorities 2
(3) Novel approach 4
(4) Fitting into and advancing theory, knowledge, and practices 5
B. Quality of Project Design 9
(1) Clarity and Coherence of Project Goals 9
(2) Project Activities and Risk Mitigation 9
C. Quality of the Management Plan and Personnel 15
(1) Management plan with key responsibilities, objectives, timeline, and targets 15
(2) Key partners and support from stakeholders 18
(3) Continuous improvement 19
(4) Project director experience 19
D. Quality of Project Evaluation 19
(1) Key Questions for Project Evaluation 20
(2) Clear and Credible Analysis Plan 22
(3) Key Components and Outcomes 24
(4) Sufficient Resources to Carry out Project Evaluation Effectively 25

A. Significance

Northwest Board of Cooperative Educational Services (NW BOCES), in partnership with seven school districts, requests $2,782,766 to develop a *System for Educator Effectiveness Development (SEED).* SEED integrates teacher evaluation with an innovative professional development (PD) system to provide geographically isolated educators an impactful tool to improve their effectiveness. SEED addresses Absolute Priority 6 – serving rural communities and Absolute Priority 1b – improving the effectiveness of teachers.

(1) Background and Overview

Colorado Department of Education (CDE) developed the Educator Effectiveness in response to legislation aimed at improving the effectiveness of teachers. The system requires use of an evaluation rubric to rate a teacher based on professional practice and outcome data. CDE contracted with RANDA to develop the Colorado State Model Performance Management System (CSMPMS), a web-based platform to support principals' heavy paperwork burden associated with Educator Effectiveness requirements. RANDA is offering school districts fee-based opportunities to link PD into the CSMPMS. The PD currently available through this system does not meet high quality PD standards. Exhibit 1 provides a visual for how SEED builds upon systems already in place or being developed. We propose to advance what RANDA is now offering by working with them to develop a dynamic PD platform that gives educators interactive access to current best practice and up-to-date content knowledge. In addition, we propose to integrate the online platform into a blended model for professional learning. SEED is a paradigm shift in PD that moves from ineffective, one-size-fits-all practices to productive, differentiated communities of learning. SEED makes teacher evaluation truly meaningful.

Exhibit 1: Interface layers resulting in SEED

Educator Effectiveness: Colorado State Model Performance System
Teacher evaluation system to meet requirements of SB-10-191.
- 5 teacher standards
- Evaluation rubric
- Evidence for scores
- Student achievement data

Colorado State Model Performance Management System (CSMPMS)
RANDA-developed web-based system for CDE, available to all CO school districts in 2014-15 to streamline teacher evaluation. Includes:
- web-based rubrics
- observation records
- teacher goal tracking
- student achievement records.

CSMPMS Online Professional Development Integration
RANDA offers (for a fee) the ability to link teachers with PD360 videos/other uploaded PD content directly aligned with and from the evaluation rubric in CSMPMS. Its current design is to offer static, vendor developed, online PD.

(2)

SEED: i3 Innovation Project

SEED will use the CSMPMS Online PD Integration to link teachers with dynamic, locally developed, blended learning PD linked directly to the Educator Effectiveness rubric elements and professional goals within the CSMPMS. SEED's blended learning PD will be managed by Innovation Coaches who will facilitate SEED's two main PD components, which will provide teachers with well-researched and current best-practices and content knowledge:

1) SEED PAK (Personalized Accessible Knowledge) Hand-picked online resources
- Stranded into targeted and strategic topics (special education, ELL, classroom management, literacy, STEM, etc.)
- Inclusive of online courses, videos, tutorials, articles - along with correlating discussion boards, reflection blogs so information is discussed not just consumed

2) SEED Teacher Learning Communities (TLCs)
- Meet for face-to-face seminars according to TLC topics
- Interact with TLC members and Innovation Coach in between seminars through the online SEED PAK for ongoing support, follow-up, and continuous learning.

Absolute Priorities

SEED is designed to develop highly effective teachers in a rural region through Absolute Priority 6 – serving rural communities and Absolute Priority 1b – improving the effectiveness of teachers. NW BOCES is a cooperative of seven districts (30 schools) in Northwest Colorado in which 87% of our schools (or 6 out of our 7 districts) meet the rural criteria for i3 Innovation (All 7 districts meet CDE's rural definition). Rural areas have a disproportionate number of new teachers who need additional support as they learn about the profession and their own practices.[1] Many NW BOCES rural schools (65%) have a higher percentage of new teachers than the

nationwide average for rural schools. Increasing teacher effectiveness is a challenging proposition in NW BOCES. The distance from urban centers and size of school districts seriously limits rural districts' abilities to provide high-quality, ongoing PD to improve teaching and learning. Darling-Hammond's research shows that "knowledge-sharing [among educators] is needed to develop…a learning oriented system of education…Also key to developing such a system is the creation of networks that allow teachers, leaders, schools, and districts to learn from one another."[2] Because rural school districts have limited funding, isolated teachers, and long travel distances for teacher collaboration, this type of system is typically not in place. Often, there are only one or two teachers working in a specific content area, leaving them without options for engaging learning networks. This is especially true for teachers working with high needs students. We propose to tackle the above issues related to Absolute Priority 6 by applying the highly promising blended model (online and in-person) to a teacher PD system. SEED proposes to develop the network described by Darling-Hammond above where teachers interact both in person and online to learn from one another and improve practice.

SEED also addresses Absolute Priority 1b- improving the effectiveness of teachers- through this systemic change to PD implementation with an emphasis on improving the ability of teachers to support high-need students (i.e. students showing significant achievement gaps). Of the NW BOCES' 7,381 students, 620 are identified as ELL (English Language Learners); 832 are in special education (SPED); and 2,374 are low income. Achievement gaps are persistent for all subgroups throughout NW BOCES and are as high as a 48% gap for SPED students. The achievement gap for high-needs students demands that all teachers are highly trained to help them achieve—high quality PD is critical for reducing these achievement gaps. Teachers must be intensively engaged in PD for an impact on instructional practices and student achievement.[3,4]

(3) Novel approach

SEED is a novel approach to teacher PD in two important ways: 1) It interfaces with and is informed by the online teacher evaluation platform while also meeting high quality standards for PD; and 2) It applies a data-driven blended learning model to PD. SEED addresses both of these innovative strategies on a scale that has not previously been attempted. Colorado's Educator Effectiveness evaluation system is on the forefront of a nationwide movement, and the SEED project helps advance this movement by building a much-needed dynamic PD system that is fully integrated with teacher evaluation standards and with the existing CSMPMS platform. SEED's novelty lies in holding PD to high quality standards while using teacher evaluation to inform and personalize the PD, as opposed to the static PD that is generally seen in connection to teacher evaluation in a review of existing practices. In addition, SEED integrates PD for all teachers, whereas a number of systems currently in place throughout the nation have policies for integrating PD only for teachers rated ineffective.[5] SEED helps struggling teachers improve, average teachers become great, and even excellent teachers grow.

SEED's second novel characteristic is that it capitalizes on the profits of a blended teacher learning model. The benefits of SEED's blended learning model include not only flexibility, differentiation, 24/7 accessibility, and evidence-based, up-to-date content but also ongoing support and coaching with both face-to-face and online collaboration and learning. Blended learning is described as "a formal education program in which a student learns at least in part through online delivery of content and instruction with some element of student control over time, place, path, and or pace; and at least in part at a supervised brick-and-mortar location away from home."[6] This definition of blended learning clearly illustrates the shift in teacher PD that we are proposing. In this case, the teachers are the students engaging in both face-to-face

learning and facilitated online delivery that allows teachers to control the time, pace, and place they access the content. Blended learning models are promising for students[7], and empirical research has shown that it is an effective strategy for improving student outcomes.[8] Based on the limited research on blended learning teacher PD[9,10] and the assumption that there is a parallel between traditional students and teachers as learners when engaging in PD, we propose a novel blended learning model for teacher PD. The flexibility of online delivery allows for ongoing collaboration and support during teachers' busy schedules. It is a solution to delivering solely online or distance PD in our rural region, in combination with critical face-to-face interactions.[11] SEED's blended learning model is a clear deviation from typical models of face-to-face PD and is a solution to the long-standing problem of "drive-by, spray-and-pray, flavor-of-the-month afterschool workshops"[2] provided by outside consultants with no differentiation for individual needs or consideration of time demands placed on teachers.

Blended learning is especially advantageous for rural schools where solely face-to-face PD presents many challenges, such as impracticality when implementing ongoing, differentiated methods due to teachers' schedules, high cost, and travel distances for rural communities. Conversely, completely online teacher learning often lacks the engagement, interaction, and coaching needed to make PD content relevant to teachers'.[11] Yet, when used in a blended learning model, technology enhances PD because it supports access, personalization, collaboration, and efficiency[12] and engages teachers with a consistent peer group for reflection and sharing. SEED integrates teacher evaluation, high quality PD standards, and a shift to blended teacher learning for a novel and promising approach to improving teacher effectiveness.

(4) Fitting into and advancing theory, knowledge, and practices

SEED advances theory, knowledge, and practices in two areas: 1) High-quality PD integrated with teacher evaluation, and 2) Blended learning PD delivery model for teachers. SEED advances the nation-wide movement to ensure that every classroom has an effective teacher. The *State of the States 2013* annual report explains, "the widespread adoption of more rigorous teacher evaluation policies represent a seismic shift rarely seen in education policy in general or state teacher policy specifically."[5] In order for teacher evaluation reforms to ensure that every classroom has an effective teacher, it is critical for PD to be responsive to evaluation results. "As states develop and implement teacher evaluation systems in response to federal and state priorities, they should consider designing systems that include using evidence gathered through evaluation to inform professional growth."[13] As of October 2013, 19 states and the District of Columbia have state policies for teacher evaluation results informing PD for teachers. Unfortunately, many of these states' policies (including Colorado) only explicitly connect PD and evaluation for teachers who are rated ineffective.[5] Linking PD to evaluation results must extend beyond only ineffective teachers' improvement plans. Colorado is identified as one of nine states that are leaders in "Connecting the Dots" in teacher evaluation results informing policy change, such as PD policy.[5] Nonetheless, a system for ensuring an effective link between evaluation and PD and to analyze correlations between PD and improved teaching is not in place.

Educational stakeholders face a next step in teacher evaluation to provide high quality PD to help teachers strengthen their practices. SEED advances the evolution of PD practices to be efficiently informed by evaluation results, individualized for each teacher, implemented with research-based practices (job-embedded, ongoing support, etc), analyzed for effectiveness in correlation with student achievement results, and re-designed according to student achievement impacts. All of these factors combined represent a paradigm shift that must be the next phase of

the teacher evaluation reform. SEED is grounded in research and successes from existing PD practices. Exhibit 2 identifies some projects that show promise. The exhibit highlights how SEED adopts elements of these projects and builds upon them to advance theory, knowledge, and practice in providing high quality PD integrated with teacher evaluation.

PD Projects	Elements of PD Adopted in SEED	Advancements to existing practices through SEED
eMINTS[14]	50 hours of PD over a school year, relevant coaching, community of learning	SEED is integrated with teacher evaluation; and blended learning model.
Quakertown and Klein School Districts[15,16]	Differentiated, driven by teacher self-assessment and ownership of their learning, job-embedded.	SEED is integrated with teacher evaluation; and blended learning model.
CAL-PEN[17]	Online resources to engage teachers in best practices, online collaboration	SEED uses a blended learning model rather than purely online is more effective.
Transforming Professional Learning Initiative[18]	Seven standards of professional learning (See Exhibit 3 below)	SEED is founded in the seven standards of professional learning, but is implemented at the school level instead of the state level
The Marzano Teacher Evaluation Model and iObservation[19]	Online library of PD resources aligned to evaluation, face-to-face workshops, growth plans with aligned PD, web-based performance management system	Dynamic online resources for ongoing collaboration and local coach guidance, locally developed face-to-face experiences, PD aligned to state evaluation rubric
Tower platform by RANDA	Online platform linked to teacher evaluation	High quality PD linked to teacher evaluation opposed to static PD

Exhibit 2 Examples of how SEED builds on current best practices in the nation

SEED is developed from proven knowledge that ongoing and job-embedded PD is the most effective model for impacting student achievement.[20,21] SEED's design represents every one of the seven standards for professional learning that was adopted by the multi-state Transforming Professional Learning Initiative. Exhibit 2 highlights how SEED integrates the seven standards.

Professional Development Standard	SEED's design to include standard
Happens within learning communities that are dedicated to constant growth, collective responsibility, and goal alignment	Teacher Learning Communities that meet face-to-face and provide ongoing online support; Participation aligns with professional growth plans
Requires skillful leaders who build capacity, advocate, and create support systems	Innovation coaches lead PD opportunities and train teacher leaders to facilitate
Entails prioritizing, monitoring, and coordinating resources	Innovation coaches facilitate coordination of resources through the SEED platform
Uses a variety of data to plan, assess, and evaluate	Robust evaluation system with ability to sustain evidence based validation through EmPower tool

Integrates effective learning designs to achieve its intended outcomes	Integrates blended learning as a promising design for our rural region
Applies research on change and maintains long-term support for implementation	SEED has an initial five years of support, including robust formative evaluation research
Aligns its outcomes with educator performance and student curriculum standards	SEED aligns to teacher evaluation, which includes student achievement on curriculum standards

Exhibit 3: Professional Development Standards[22]

SEED furthers use of evidence-based PD practices, using a blended learning model, by integrating them with teacher evaluation. Although blended learning is at present primarily used with students, a review of published research revealed that blended learning PD shows promise in impacting teacher practice and student achievement. After experiences with blended learning PD, teachers have been found to be receptive to it.[9] Blended learning PD is associated with increases in observation ratings in teachers with ELL students[9] and sustained use of new strategies for one year.[10] However, studies have not utilized models that allow for testing blended learning PD impact using control or comparison groups. Furthermore, it is important to identify effective, scalable, and sustainable methods of PD.[23] Although there have been nine PD effectiveness studies that met the What Works Clearinghouse criteria, with or without reservations,[23] new models of effective PD, need to be examined, especially as teachers are being held more accountable for student achievement. This project contributes to existing and further knowledge about effective PD models by testing the impact of blended learning PD on teacher practice and student outcomes using randomized block design.

The possibilities for SEED to advance practice beyond our region is heightened with the involvement of our technology focused private sector partners. eNet Learning has a far-reaching presence in technology-driven teacher PD in Colorado. RANDA can support SEED's expansion through the CSMPMS platform and with their nation-wide leadership in education technology innovations. Through our partnerships, SEED advances the nation's progress in practices supporting teacher evaluation's impact on professional growth. SEED is an exciting shift in how

teachers become increasingly effective educators. With SEED, teachers are members of a robust community of learning in which they interact with teachers with similar professional goals, engage in rich conversations, share innovative resources, and reflect deeply. We anticipate SEED to become an exemplar PD system with teacher engagement in learning, increased depth of teacher knowledge, and improved outcomes for high needs students.

B. Quality of Project Design

(1) Clarity and Coherence of Project Goals

The purpose of SEED is to invigorate teachers as learners in a manner that translates to students who are highly engaged in 21st Century skills and concepts. Six measurable goals align with this purpose: 1) Successfully implement and continually improve SEED project in 30 NW BOCES schools during a four year period; 2) Improve principal engagement in teacher professional growth and support of teachers; 3) Increase rural access to and use of current best-practices and up-to-date content knowledge; 4) Support teachers in successfully implementing SEED practices and content; 5) Improve student achievement; and 6) Improve student engagement. Our work during the timeframe of the i3 grant moves toward SEED sustainability for NW BOCES and potential expansion to other regions. The SEED project is summarized in Exhibit 4.

(2) Project Activities and Risk Mitigation

We have identified five key stages of program activities as a plan to achieve SEED's goals.

Stage 1: Technology Development RANDA and eNet are committed to partner with NW BOCES in developing SEED's platform to build additional functionality to the CSMPMS.

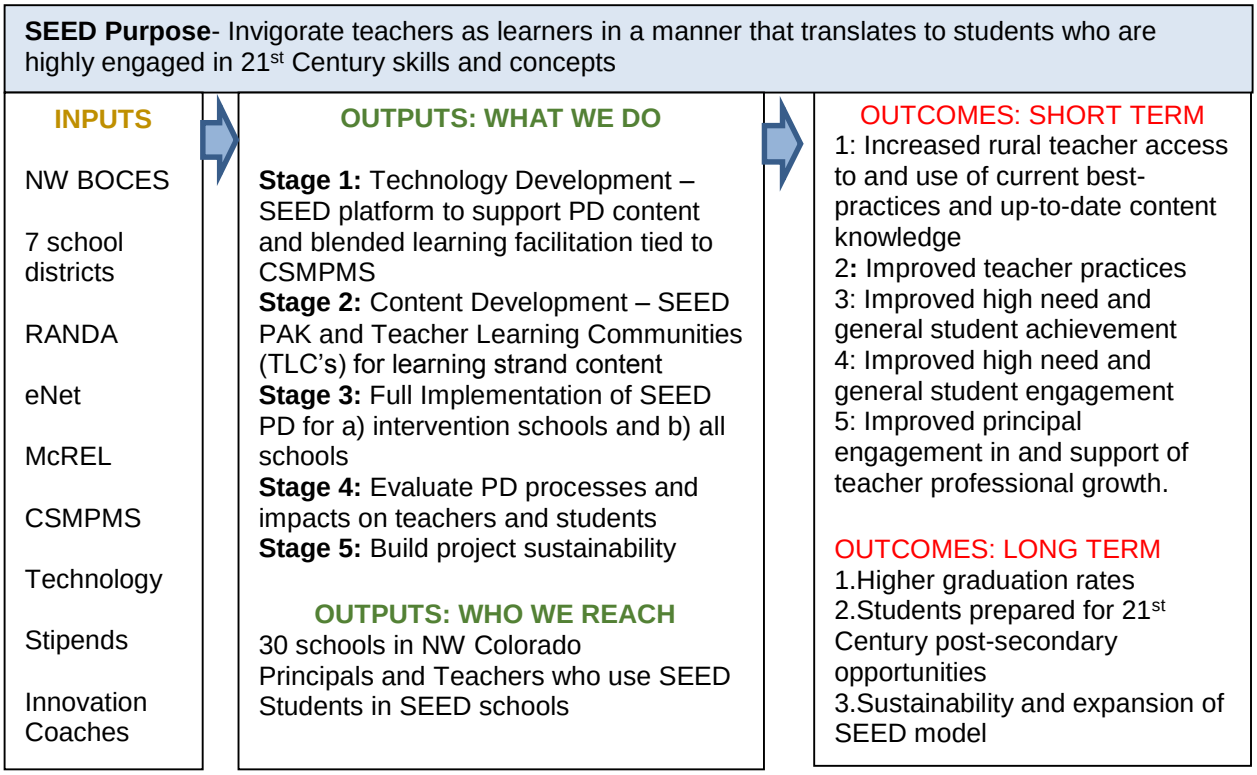

Exhibit 4: SEED Logic Model

During a year-long technology development and piloting phase, a Platform Development Team, which is comprised of a representative from each school district, and three grant-hired Innovation Coaches (ICs), work with RANDA, eNet and potentially other service providers to design a platform for PD that is dynamic and interactive. (See IC job description in Appendix J). The vision for the platform has components that accommodate SEED activities including discussion boards, reflection blogs, article/video discussions, and, most importantly, rubric-integrated access to the SEED PAK (Personalized Accessible Knowledge). The PAK contains hand-picked, searchable, high-quality PD content; it is SEED's foundation for blended learning and ongoing teacher support capabilities for 570 teachers. The platform also includes RANDA's EmPower data analysis tool so that PD and student achievement data is seamlessly pulled from SEED and CSMPMS to support principals in validating the impact of PD through evidence-based feedback (See Appendix J for EmPower presentation). The Platform Development Team

continues to clarify the platform's specific capabilities during technology beta testing to provide feedback on ease of user's experience and inclusion of important tools. The technology development activities are critical to the overall success of SEED. The platform must be truly integrated to eliminate perceptions of evaluation and PD as separate entities and it must have the dynamic components and data analysis SEED needs to be effectively used and evaluated.

Stage 2: Content Development Equally critical to SEED's success is the content development stage. This stage is ongoing throughout the time-frame of the grant and beyond. The three ICs lead the development and facilitation of learning strand content. The first step is choosing topics for the initial three learning strands. This is a collaborative process between ICs and NW BOCES PD Committee that includes analyzing the common needs identified through teacher evaluation data. (The NW BOCES PD Committee is already in existence. It provides feedback regarding all PD opportunities and includes administrators from each of the seven school districts.) The learning strands incorporate specific areas of Colorado's Educator Effectiveness rubric. The rubric is comprised of Colorado's five teacher Quality Standards (QS) with 28 more detailed "elements" to delineate each standard for teacher performance as shown in Exhibit 5.

Colorado Teacher Quality Standards	# of Elements
QS I: Teachers demonstrate mastery of and pedagogical expertise in the content they teacher. The elementary teacher is an expert in literacy and mathematics and is knowledgeable in all other content that he or she teaches The secondary teacher has knowledge of literacy and mathematics and is an expert in his or her content endorsement.	Six
QS II: Teachers establish a safe, inclusive and respectful learning environment for a diverse population of students.	Six
QS III: Teachers plan and deliver effective instruction and create an environment that facilitates learning for their students.	Seven
QS IV: Teachers reflect on their practice.	Three
QS V: Teachers demonstrate leadership.	Four

Exhibit 5: Colorado Teacher Quality Standards

A spring 2014 needs-assessment survey with NW BOCES principals led to identification of three potential initial learning strand topics (See Exhibit 6).

Learning Strands	Sub-strands or sub-topics	Teacher evaluation rubric elements incorporated
Innovations in Differentiated Instruction	ELL, Low-income, Special Education, Gifted and talented students	QS.III Element c: Demonstrate a rich knowledge of current research on effective instructional practices to meet the developmental and academic needs of their students QS. II Element d: Adapt their teaching for the benefit of all students, including those with special needs, across a range of ability levels QS. IV: Teachers reflect on their practice
Parent Engagement	ELL, Low-income students Gifted and talented, Special Education, students, & Technology for engagement	QS. II Element e: Teachers provide proactive, clear and constructive feedback to families about student progress and work collaboratively with families QS. IV: Teachers reflect on their practice
Content for 21st the Century	Literacy Math	QS. I Element f: Make instruction and content relevant to students QS. IV: Teachers reflect on their practice

Exhibit 6: SEED Learning Strands for Initial Development

Exhibit 6 also shows sub-strands according to specific teacher needs within each learning strand; these sub-strands are critical to SEED's differentiation for teachers and provide opportunity for high-leverage strategies and impactful, targeted PD.

After the first three strands have been determined, the ICs work with Content Development Teams, comprised of teachers and administrators, to help choose the specific content of each learning strand and subtopic. Content is determined based upon its alignment with the most current research, incorporation of innovation, and ability to improve teacher knowledge to reach high needs students. Another consideration is choosing resources that fit in the design of the Teacher Learning Communities (TLCs) (More explanation of TLCs in Stage 3). The ICs and Content Development Teams cull through the open source and fee-based videos, articles, tutorials, webinars, and online courses to hand-pick the most up-to-date and impactful content. This content is then uploaded into the SEED PAK, aligned with the evaluation rubric, tagged for teachers to search by subtopic (such as ELL), integrated with the SEED platform's dynamic tools such as discussion boards and reflection blogs, and used by SEED's TLCs. The SEED PAK supports each of the five outcomes identified in Exhibit 4 as it is accessible,

inspiring, and targeted toward specific high needs students. Content development continues after the initial three learning strands to develop more strands and to stay on top of keeping the PAK up-to-date. The resources in the PAK are evaluated and changed as the ICs and Content Development Teams react to use and teacher needs.

Stage 3: Full Implementation After the initial technology and content development stages, SEED is open for all teachers at our 15 intervention schools to use. After two years, the control group joins the intervention schools, and SEED is open for all 30 NW BOCES schools. Learning strands continue to be added throughout the lifespan of the project. This implementation model allows the project to be phased-in and for a research methodology using an intervention and control group to evaluate SEED impact.

The blended learning model is truly realized through Teacher Learning Communities. Innovation Coaches lead TLCs in each of the learning strands, which consist of two components: in-person seminars approximately three times each year, and ongoing use of the SEED PAK for personal and group online learning. Teachers take part in learning strands based upon needs identified within the evaluation rubric. Determination of teachers' participation in learning strands is made through principal evaluation meetings and professional growth plan development. The ICs facilitate continued reflection and discussion online and in person at both an individual and group level to support implementation of improved teaching practices. Teachers use the TLC online platform to seek support and to network regarding use of instructional strategies and content related to their learning strand. Teachers have the option of full participation in a TLC strand or can participate in a less structured way through the SEED PAK only. TLCs provide for teacher differentiation in both content focus (i.e. grade level, subject area, high needs student focus) and TLC delivery (online, face-to-face, and blended

learning components). Through participation in this regional blended learning community, we meet Goals 3 through 6 by giving teachers in rural districts the opportunity to collaborate and access high quality resources in ways previously unattainable, especially for those whose teaching role is specific to high need students.

Stage 4: Data Collection and Evaluation McREL International, an education research and development nonprofit organization, partners with NW BOCES to design and implement evaluation and research for SEED. Process evaluation is conducted to provide iterative feedback for continual program improvement. Exhibit 10 in Section D describes the process and outcome evaluation questions, alignment with goals, data sources, and timing. Summative feedback to schools and districts is validated by RANDA's EmPower data analysis tool. EmPower uses data to draw correlations between data points and PD. EmPower is RANDA's exciting innovation to help principals understand the impact of their teachers' PD on student achievement and other data.

Stage 5: Sustainability Part of the sustainability plan for evaluation is the use of EmPower because it provides summative feedback to district and school officials on the impact of SEED on their teachers and students. McREL provides technical assistance to district and school officials to understand how to use EmPower for long term evaluation. In addition, the Lead IC creates a SEED manual for procedures and guidance on developing TLC learning strands, managing the SEED PAK, and collaborating with partners on SEED implementation throughout the lifespan of the project. The Lead IC works with teacher leaders and principals who volunteer to facilitate learning strands after the i3 grant timeframe. The i3 funding supports a paradigm shift in PD delivery among our 30 schools. Therefore, we anticipate support among our school

districts to shift NW BOCES PD funding toward SEED continuation, which could include stipends for teacher leaders or principals or for continuing the Innovation Coach positions.

Exhibit 7 identifies potential risks to project success and mitigation strategies.

Potential Risk	Mitigation
Lack of quality IC hiring candidates	We are offering a competitive wage for the Innovation Coaches. Participating school districts provide candidates "leave" from their current positions so they may return after their IC commitment.
Lack of expertise in all learning strand content areas or student subgroups by ICs	We intend to hire ICs with a variety of backgrounds and interests. While one coach may lead the facilitation of Parent Engagement, he or she may look to the experience of another IC with low-income families to help guide the strand content in that area
Delay in platform design	Establish a comprehensive contract and proactive communication strategies with service providers
Lack of school participation	District superintendents lead their administrative teams to fully support SEED implementation.
Lack of teacher participation	Principals encourage participation through teacher evaluation and growth plans; principals lead a cultural shift in accessing PD; principals and teachers participate on development teams
Heavy workload for ICs	Support from development teams and ongoing formative evaluation occur with revisions of job descriptions as needed

Exhibit 7 Risk Mitigation

C. Quality of the Management Plan and Personnel

(1) Management plan with key responsibilities, objectives, timeline, and targets

Exhibit 8 highlights significant roles and responsibilities in project management. Please see Appendix F for resumes of key personnel.

Title	Key Responsibilities
Project Director:	Supervise the strategic implementation of the i3 grant project to ensure that all stakeholders and personnel are completing their responsibilities and facilitate appropriate SEED plan changes through formative assessment analysis; Leads Project Leadership Team
PD & Tech Coordinator (PDTC):	Lead PD Committee & Platform Development Team; facilitates communication with SEED project partners: McREL, RANDA, eNet, schools; works closely with Lead IC to manage grant budget
Lead Innovation Coach	Lead IC team & Content Development Teams including data collection and analysis to determine PD needs; works closely with PDTC to ensure platform development matches content and instructional needs and manage grant budget
Innovation Coaches	See draft of job description in Appendix J.
SEED Project Leadership Team = Project Director, PD & Tech Coordinator, 3 ICs	
PD Committee:	Respond to process and formative assessment and determine project design revisions; Make determinations of learning strand topics for the initial deployment and as the number of learning strands increase. (This committee is already in existence.)

Platform Development Team	Work directly with the SEED Project Leadership Team to provide guidance on the specific elements and user interface for SEED's platform; Include at least one principal and teacher from participating school districts for a total of 14 members who may also gather guidance from additional staff within their school districts.
Content Development Teams:	Work directly with the ICs on choosing content for each learning strand for use in the SEED PAK and TLCs; Include teachers and administrators with specialized knowledge in the learning strands and subtopics within the strands;
RANDA; eNet Colorado; and/or TBD	Work with SEED Project Leadership Team to develop a system that is aligned to SEED's goals, objectives, and activities; Include ample opportunity for administrators and teachers to provide feedback during the development process.
McREL	Provide process and outcome assessment; design and support data collection and analysis; develop research conclusions and lead results dissemination.

Exhibit 8 Key Responsibilities

The project objectives are based on SEED's six project goals and metrics are aligned to the evaluation plan. Annual performance targets in Exhibit 9 are preliminary benchmarks, and they are reconsidered after establishing benchmarks and as part of the formative project analysis.

Objective	**Metric**	**Annual Performance Targets Percentile Points**			
		'15-'16	**'16-'17**	**'17-'18**	**'18-'19**
Principal engagement in teacher professional growth	Qualitative interview	Baseline	> positive feedback	> positive feedback	> positive feedback
Teacher perceptions of access to up-to-date, evidence-based PD content to increase.	Teacher Perception Survey	Baseline	5% > from baseline	10% > from baseline	15% >from baseline
Teachers successfully implement SEED practices and content with students	Teacher Evaluation Rubric scores	Baseline	5% > from baseline	10% > from baseline	15% >from baseline
Student achievement increases	Assessments	Baseline	3% > from baseline	7% > from baseline	10% >from baseline
Student engagement improves	Student Perception Survey	Baseline	5% > from baseline	10% > from baseline	15% >from baseline

Exhibit 9: Annual Performance Targets

The SEED milestones and timeline (Exhibit 9) are a means to monitor and assess project progress on an ongoing basis. The milestones represent major project activities.

Milestone	Lead	Deadline
Initial Planning (January 2015 – May 2015)		
Hire part-time Lead Innovation Coach	Project Director	Jan, 2015
Extend PDTC's contract to include SEED responsibilities	Project Director	Jan, 2015
Convene the NW BOCES PD Committee	PDTC	Jan, 2015
Contract with McREL	PDTC	Jan, 2015
Contract with technology service providers	PDTC	Feb, 2015
Hire two Innovation Coaches	Project Director	May, 2015
Stage 1: Technology Development (January 2015 – June 2016)		

Initiate the Platform Development Team	PDTC	Feb, 2015
Conference with RANDA on work plan	PDTC & Lead IC	Mar, 2015
First "sandbox" for Team's review	RANDA	May, 2015
Team's feedback provided to RANDA	PDTC	Jun, 2015
Second "sandbox" for Team's review	RANDA	Jul, 2015
Team's feedback provided to RANDA	PDTC & Lead IC	Aug, 2015
Final Beta SEED platform ready to launch	RANDA	Sept, 2015
Monthly and as needed communication between RANDA and Project Leadership Team on technology adjustments	PDTC & Lead IC	Sept, 2015 - ongoing
Stage 2: Content Development (June 2015 – June 2016 and beyond)		
NW BOCES PD Committee makes determination for initial learning strand topics and subtopics	PDTC & Lead IC	Mar, 2015
Initiate the Content Development Teams for each learning strands; begin SEED facilitation manual	Lead IC	Mar, 2015
Content for one learning strand ready for Beta deployment	Innovation Coaches	Sept, 2015
Content for all three initial online learning strands is ready for pilot deployment	Innovation Coaches	Jan, 2016
Extend Lead Innovation Coach's position to full-time	Project Director	Jun, 2016
Additional learning strands developed as determined by the PD Committee with new Content Development Teams	Lead Coach	Feb, 2016
Phased-in Implementation for Intervention Schools (September 2015 – June 2016)		
Beta learning strand is deployed for Content Development Team	Innovation Coaches	Sept, 2015
Beta participants provide ongoing feedback to Innovation Coaches	Innovation Coaches	Sept, 2015 – Dec, 2015
Pilot learning strands for all three initial strands is deployed	Innovation Coaches	Jan, 2016 – Jun, 2016
Pilot participants provide ongoing feedback to Innovation Coaches	Innovation Coaches	Jan, 2016 – Jun, 2016
Administrator workshop for SEED & EmPower training	PDTC & Lead IC	Aug, 2016
Stage 3a: Full Implementation Intervention schools (May 2016 – June 2019); Stage 3b: Full Implementation all schools (May 2018- June 2019)		
End-of-year teacher evaluation meetings incorporate discussions of SEED PD	Principals	May
Teachers are "assigned" or register for SEED	Principals & teachers	June
PD for teachers on SEED PAK and TLCs	Innovation Coaches	August
Innovation Coaches establish TLC expectations and begin engaging teachers in online resource, peer, and coach interactions; this continues between each seminar	Innovation Coaches	September, and ongoing
Mid-year teacher evaluation meetings consider progress toward teacher's professional growth goal	Principal and teacher	December/ January
TLC learning strands meet face-to-face for seminars during the BOCES-wide COLLAB PD day	Innovation Coaches	October
Two more face-to-face seminars occur	Innovation Coaches	January, April
Stage 4: Data Collection and Evaluation (February 2015 – December 2019; yearly schedule unless otherwise noted)		
Random school assignment to test and control conditions	McREL	Feb, 2015
Teacher perception and student engagement survey and principal, teacher, and innovation coach interview development complete (Goals 1, 2, and 6)	McREL	Nov, 2015
Conduct teacher and principal interviews (Goal 2) (pilot)	McREL	Dec, 2015
Fidelity of Implementation assessment	McREL	December/June 2016-2019
Conduct teacher and principal interviews (Goal 2)	McREL	May

Conduct teacher, principal, and innovation coach interviews (Goal 1)	McREL	December/May
Conduct teacher perception and student engagement surveys (Goals 3 and 6) (pilot)	McREL	Jan, 2016
Conduct teacher perception and student engagement surveys (Goals 3 and 6)	McREL	Aug, 2016/ May annually
Content analysis of SEED PD (Goal 3)	McREL	January
Analysis of alignment of teacher evaluation rating and recommended SEED PD (Goal 3)	McREL	June
Semester implementation evaluation reporting (Goals 1 and 2)	McREL	August/February
McREL receives student achievement, teacher evaluation, and SEED usage data (Goals 3 - 5)	Project Director	June
Annual outcome evaluation reporting (Goals 1 – 6)	McREL	September
Preparing Research for publication	McREL	Fall 2019
Stage 5: Sustainability (January 2015-December 2019)		
Completion of SEED facilitation manual	Lead IC	October 2019
Training of teacher leaders and principals for continued SEED facilitation	Innovation Coaches	September – December 2019

Exhibit 9: Timeline

(2) Key partners and support from stakeholders

The seven participating school districts are the most significant key partners for this project. Their commitment to the project is what makes it successful as the principals at each school are critical to promoting and embracing SEED as a cultural shift in PD delivery. This project has been discussed and approved through the NW BOCES PD Committee and the NW BOCES Superintendent Accountability Committee. Commitment from McREL to participate in this project is evidenced through their development of the evaluation process for this grant proposal. Likewise, RANDA is committed to providing services for SEED's seamless interaction with CSMPMS and use of the EmPower tool to draw correlations between PD and other data sets, including an offer to provide an in-kind private sector match. E-Net Learning is committed to supporting the technology development of SEED and providing an in-kind match. Steamboat Springs Education Fund Board president will bring this project before the board for consideration of providing matching funds. Appendix G includes letters of support from all participating school districts and private sector partners. U.S. Senator Michael Bennet submitted

to the department a letter of support for SEED as a stakeholder invested in the education of Colorado's students.

(3) Continuous improvement

Procedures for ensuring feedback and continuous improvement in operating SEED occur with communication between McREL, SEED Project Leadership Team, and NW BOCES PD Committee. The PD Committee meets quarterly and reviews SEED project implementation during scheduled meetings. Project Leadership Team has regular, scheduled, monthly meetings. Time is set aside at each meeting to review reports and data that informs SEED project staff, partners, and stakeholders of milestone progress. McREL provides bi-annual implementation (process) evaluation reports (once per academic semester). See Section D for greater detail on process evaluation. The Project Director and key personnel make adjustments, as needed, to project activities. As usual, various communication channels, such as videoconferencing, online file sharing, project management tools, and in person meetings are utilized to manage activities.

(4) Project director experience

Amy Bollinger, NW BOCES Executive Director, has 15 years' experience in managing the budget and program implementation for projects involving federal funds. She currently manages special education, Title I, Title II, Title III, and gifted and talented programming for six school districts, which requires high stakes attention to compliance of regulations. Management of these programs also requires strategic planning of goals, objectives, and activities. Ms. Bollinger supervises 58 personnel in ensuring that programs are implemented with fidelity. She also oversees 5 committees within the NW BOCES.

D. Quality of Project Evaluation

(1) Key Questions for Project Evaluation

McREL conducts the external process and outcome evaluation of SEED. The **process evaluation** informs the review and revision of the project's design and implementation strategies for continuous improvement whereas the **outcome evaluation** focuses on the outcomes for participants, including principals, teachers, and students. Exhibit 10 describes the project goals, evaluation questions (process and outcome), data source(s), and expected timing.

Goal	Evaluation Question(s) (p=process; o=outcome)	Data Source(s)	Expected Timing
1. Successfully implement and continually improve SEED project in 30 NW BOCES schools during a four year period (timeliness and continuous improvement)	*a.* Are project activities occurring as planned? (**p**)	*a*. Project meetings	*a, b*. Ongoing
	b. Is the project maintaining its planned rigor? (**p**)	*b*. Recruitment, retention, participation documentation	
	c. What barriers and unanticipated outcomes were encountered, and what revisions were made during implementation? (**p**)	*c, d*. Qualitative interviews with teachers, principals and implementation team (including ICs)	*c, d*. Once per semester
	d. What were key project successes during implementation? (**p**)		
2. Improve principal engagement in teacher professional growth and support.	a. Do principals feel more engaged in teacher professional growth? (**p**, **o**)	*a, b*. Qualitative interviews with teachers and principals	*a, b*. Prior to implementation/at end of each academic year
	b. Are principals able to provide more and better support to teachers? (**p**, **o**)		
3. Increase rural teachers' access to and use of current best-practices and up-to-date content knowledge.	a. Is PD reflective of best-practices and up-to-date content knowledge? (**p**)	*a*. PD materials	*a*. End of content dev cycles
	b. Are teacher needs aligned with the recommended PD? (**p**)	*b*. CSMPMS teacher eval/plans	*b*. End of each academic year
	c. Do teachers' perceive access to best-practices and up-to-date content, and does this perception increase over time? (**p**, **o**)	*c*. Teacher perception survey	c. Prior to SEED implementation/ end of each year
	d. Are teachers utilizing SEED, and does use increase over time? (**p**, **o**)	*d, e*. SEED usage data via CSMPMS	*d, e*. End of each academic year
	e. Which activities are teachers using? (**p**, **o**)		
4. Support teachers in successfully implementing SEED practices and content.	a. Are teachers demonstrating increased practice change from use of PD activities in the classroom over time? (**o**)	*a*. Teacher evaluation rating for the targeted rubric element(s) via CSMPMS	*a*. End of each academic year
5. Improve student achievement	a. Does student achievement increase among participating schools? (**o**)	*a*. Student achievement in math/reading/ language arts	*a, b*. Each academic year

	b. Do student SES and other indicators of high need students moderate the relationship between school participation in SEED and student achievement over time? (**o**)	*b*. NW BOCES student data, achievement in math/reading/language arts	
6. Improve student engagement	a. Does student engagement increase among participating schools? (**o**)	*a*. Student survey	*a, b*. Prior to implementation and end of each academic year
	b. Do student SES and other indicators of high need students moderate the relationship between school participation in SEED and student achievement over time? (**o**)	*b.* Student survey, NW BOCES student data	

Exhibit 10: Project Goals and Evaluation

The process evaluation examines project practices using project meetings, implementation documentation, and interviews with participants and key project staff. McREL delivers reports that detail findings and provide recommendations each academic semester. Prior to affecting outcomes, it is important to ensure PD is aligned with best practices. McREL conducts content and alignment analyses of new PD and evaluate whether teachers are recommended appropriate PD via SEED by examining alignment of PD goals with evaluation-identified teacher needs. Next, it is critical to both process and outcome that principals are engaged in teacher professional growth and teachers use SEED resources. Principal engagement is assessed using principal and teacher interviews; SEED resource use is assessed using data from CSMPMS and ICs. In addition, teacher perceptions of access to current best-practices and up-to-date content are assessed using teacher surveys. Combined, this information provides NW BOCES and ICs with yearly process feedback to improve the SEED program. As part of the outcome evaluation, teacher successful implementation and use of SEED is assessed using teacher evaluation ratings, which are informed by principal observations and lesson plans, as part of CSMPMS. Student achievement data is available via the CSMPMS system. Student engagement is measured via survey. Process and outcome evaluation allow project staff to assess barriers to and facilitators of successful program implementation, teacher and student outcomes, and participants reactions.

(2) Clear and Credible Analysis Plan

The SEED program is implemented in a total of 30 NW BOCES schools. **Process evaluation** is conducted using qualitative and quantitative data collected during project meetings, implementation documentation, content analysis of PD materials and alignment with demonstrated teacher need, and semi-structured interviews with principals, teachers, and the implementation team (including IC) to provide iterative feedback to the project team for continuous program improvement. For example, once per semester, analysis of IC interviews follows a grounded theory approach; results provide barrier and success information related to TLCs. **Outcome evaluation** focuses on principal, teacher, and student outcomes and is conducted using qualitative (principal interviews) and quantitative (NW BOCES-provided student demographics, ICs, and CSMPMS data such as teacher evaluation, student achievement, and teacher SEED usage) data. In addition, McREL uses EmPower as a tool for validating univariate analysis of student and teacher data, which is helpful in providing technical assistance to district and school officials on how to sustain evaluation of SEED.

As school-level collective participation is an integral part of SEED, researchers use a randomized block design (RDB) wherein schools are randomly assigned to the intervention (n=15) or a delayed-treatment control (n=15) condition, blocked by district prior to random assignment by school. The control group is offered the opportunity to receive treatment in year four. Demographic and achievement data is collected and compared at baseline in the analytic sample to assess group differences. Any significant differences (between .05 and .25 SD) serve as controls in inferential statistical analyses. Although there are procedures in place to prevent attrition, some may occur. Of particular concern would be loss of schools; however, based on previous NW BOCES experiences with interventions, it is unlikely that schools attrit. At the teacher level, attrition is likely to be minimal because varied teacher use is a function of the

program, and SEED is integrated with the state teacher evaluation rubric. However, attrition analyses are conducted to examine whether attrition is related to group condition at school- and teacher-levels. Because attrition results in missing data, researchers use a full information maximum likelihood (FIML) procedure.

Goals 3 through 6 focus on confirmatory research questions that address outcomes: teacher access to up-to-date, evidence-based PD content, teacher behavior change, and student achievement and engagement. Two-level hierarchical linear models are used to assess changes in teacher perceptions and teacher behaviors (teachers nested in schools), and the two primary student outcomes (students nested in schools). All models include school-level covariates, such as prior achievement and demographics, to increase power[24] and block on district in level two. To address questions about change over time, growth curve models will model all four outcomes (teacher perceptions and behaviors and student achievement and engagement). We expect teacher perceptions of access to up-to-date, evidence-based PD content to increase by at least 10% on a 5-point Likert type scale at the end of two years, and we expect that teacher evaluation ratings will increase by at least 10% at the end of two years. A priori power analyses using Optimal Design Plus[25] were conducted to provide preliminary estimates[a] of minimum detectable effect sizes (MDES) for a sample of 30 schools with an average of 20 teachers and 230 students per school. MDES is 0.37 for teacher perceptions and 0.40 for teacher behavior. We expect an overall increase in student achievement (up to a 21 percentile point increase after two years[23]) and engagement (anticipated 10% increase at the end of two years) as a result of school participation in SEED. For the student models, we will not utilize nesting within classrooms

[a] $\rho = .83$ (estimated 2-3% reduction in power because of unbalanced design[26]; ICC = .22 for perceptions, behavior, and engagement; ICC =.10 for achievement; $R^2_{L2} = .84$

since students will not be nested in the same classrooms each year. This is a method that has been shown to be effective with data drawn from similar studies.[27] MDES is 0.30 for student achievement and 0.24 for student engagement. In addition to these confirmatory analyses, exploratory analyses are conducted to address portions of Goals 4 through 6 to examine moderation of the relationship between the intervention and student outcomes for high need students, including, but not limited to low SES, ELL, and students on IEPs. All analyses are based on the appropriate assumptions for analyzing the specific type of data, the questions being answered, and appropriate adjustments to account for multiple comparisons. To assess SEED's impact, effect sizes are calculated using Hedges' g (continuous outcomes) and Cox index (dichotomous outcomes).

(3) Key Components and Outcomes

As outlined in the strong theory model (see Appendix D), the primary aim of SEED is to impact teacher practice and thereby impact student engagement and achievement. It is hypothesized that this occurs as a result of teacher access to evidence-based, up-to-date, and blended learning PD. SEED is also designed to increase principal engagement in and support of teacher professional growth; yearly interviews with principals and teachers are analyzed to determine changes over time. Teacher practice is assessed yearly using the state's standard teacher evaluation rubric, informed by principal observations and lesson plans. Student achievement, including but not limited to NWEA MAP, PARCC, and CMAS scores, is examined yearly. Because achievement tests vary across schools and years, test scores will be standardized using z-scores.

SEED, by its design, encourages collaboration among teachers, principals, and project staff. Therefore, participation in the evaluation components is encouraged by creating a collaborative network in which participants and users are invested in its success. In addition, research has

shown that perceptions of social importance of the intervention topic predict participation in school-based research.[28] NW BOCES superintendents' commitment is an indicator of their perceptions of the social importance of improving teacher effectiveness and student outcomes. To determine the measureable threshold for acceptable implementation, we calculate implementation fidelity scores to quantify the extent to which practice was aligned with implementation plans using the following components: *Adherence* (extent to which all SEED key milestone activities are completed according to plan and on time), *Dosage* (number of times per year teachers and principals meet and implement SEED activities into professional growth plans and extent to which teachers participate in TLCs and use the SEED Library), *Quality* (extent to which ICs are prepared and teachers perceive SEED content is evidence-based and useful, feel prepared to practice SEED content, and are satisfied with SEED content).[29,30] McREL calculates a fidelity score twice per year for each year of program implementation. It is expected that it increases each year as McREL provides implementation evaluation feedback that is incorporated through an iterative process. See Appendix J for detailed information on the implementation fidelity plan. This system allows us to determine best practices related to SEED implementation.

(4) Sufficient Resources to Carry out Project Evaluation Effectively

McREL's research and evaluation team for this study is led by Katie Andersen, Ph.D., who has over 10 years of research and evaluation experience in education and public health. She has published work utilizing latent growth curve models in *Developmental Psychology* and the *Journal of Vocational Behavior*. Other McREL staff for this project includes a research associate and content analyst. Please see Appendix F for resumes of SEED key personnel.