Education Innovation and Research (EIR): Early-Phase Grant Application

Rural Connect

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A. Significance

The North East Florida Educational Consortium (NEFEC), a consortium of small and rural LEAs, will expand existing partnerships with two additional consortia in the State – Panhandle Area Educational Consortium (PAEC) and Heartland Educational Consortium (HEC) – to implement, refine, and test the effectiveness of **Rural Connect** in 29 high-need, rural LEAs.

Developed by instructional experts at NEFEC in partnership with district, school, and teacher leaders (**AP2: Field-Initiated Innovation-General**), Rural Connect is a cost-effective solution for empowering rural educators as advocates in their professional learning (PL), giving voice and choice to teachers who otherwise operate in isolation from their peers. Through a network of regional learning communities focused on integrating literacy into content-area curriculum, Rural Connect provides a platform for cross-district, teacher-led learning and practice-connected support that is crucial to the growth and retention of educators in small, rural districts (**Rural Applicant**-see Appendix F). Initial research has shown promising evidence of effectiveness (**AP1: Demonstrates a Rationale**). A quasi-experimental pilot study (Wright, 2019) found that teachers of state-tested courses (Algebra I, Civics, US History, Biology) who participated in Connect during the 2016 and 2017 school years ($n = 41$) exhibited significantly greater increases in students' End-of-Course exam performance (effect size: $d = .66$) than did a baseline-equivalent comparison group ($n = 45$). Further independent evaluations suggest that performance increases may be at least partially explained by the intervention's effects on teacher motivation and self-efficacy, with average gains as high as 30 percent (Wright, 2017; 2018a).

Employing a cluster-level Quasi-Experimental Design (QED) **designed to meet WWC Standards with Reservations**, the proposed project will expand implementation and assess the effectiveness of Rural Connect to achieve three primary goals: (1) Increase achievement of high-

need, rural students; (2) Increase collective efficacy and motivation of rural teachers; and (3)

Refine an innovative, replicable model for rural professional learning, collaboration, and support.

The three rural consortia in Florida serve **high-need students** (i.e., economically

disadvantaged and academically low-performing; see Table 1) in 29 of the state's 67 county-

wide LEAs. The project will serve nearly **15,000** of these students through direct intervention

with **800 K-12** teachers across four experimental cohorts and waitlist comparison group.

Table 1. Rural Gaps: Consortia-Statewide Comparison

	Percent Proficient (2018)				% FRL (2019)	% Title I (2018)	% Grad Rate (2018)
	ELA	**Math**	**Sci.**	**Soc. S.**			
Florida (Statewide)	54.4	57.3	56.6	69.6	62.7	57	86.1
Rural Consortia LEAs	47.8	52.7	50.4	62.2	82.2	77	82.3
Rural Gaps	**-6.6%**	**-4.6%**	**-6.2%**	**-7.4%**	**+19.5%**	**+20%**	**-3.8%**

A1. Contribution to increased knowledge and understanding of educational issues. Teacher

turnover is undoubtedly a nationwide epidemic. An estimated 16 percent of teachers change

schools or leave the field each year (NCES, 2014), with estimated annual costs exceeding $7

billion (NCTAF, 2017). One-third of new teachers leave the profession altogether within their

first three years (Redding & Henry, 2019). High-need, economically disadvantaged schools are

hit hardest. With turnover rates averaging 22 percent, low-income students are the most likely to

be taught by a novice teacher (Kalogrides & Loeb, 2013).

This retention crisis is complicated further by a demand for highly effective teachers in

high-needs schools that far exceeds the availability of new teachers coming into the field

(Sutcher, Darling-Hammond, Carver-Thomas, 2016; Ingersoll, 2001). The shortage of qualified

teachers is especially severe in high-poverty, rural school districts (Ingersoll & Merrill, 2010)

where the already dire retention struggle is exacerbated. Because small and rural areas have

relatively little ability to attract qualified teachers from outside the region, open positions are

frequently filled by non-traditional or alternatively-certified teachers ("alt-certs") – those without

the certifications or training needed to meet the comprehensive needs of their students.

Beyond the financial and human capital implications of inadequately-staffed schools, **turnover has negative impacts on the motivational climate and collective efficacy of the remaining workforce**, disrupting morale, straining time and resources, and reducing collaboration and innovation (Ronfeldt, Loeb, & Wyckoff, 2013). Ironically, research also suggests that the organizational factors that contribute to motivation (e.g., strong leadership, autonomy, quality feedback, clear expectations) are the same factors that simultaneously contribute to turnover decisions (Simon & Johnson, 2015; Ingersoll, 2001; Castro, Quinn, Fuller, & Barnes, 2018; Pritchard & Ashwood, 2008; Locke & Latham, 1990), suggesting that **motivation and retention challenges are bidirectional and cyclical**.

Furthermore, there is a growing body of research illustrating the **critical impacts of teacher motivation and turnover on student achievement.** Teacher motivation and empowerment have been linked to instructional practice, student engagement, and teacher-student relationships (Sweetland & Hoy, 2000; Han & Yin, 2016; Woolfolk & Hoy, 1990), which have direct impacts on student learning (Hattie, 2012; 2017). High turnover levels are associated with lower achievement in ELA and math, with strongest effects found in already low-performing schools (Ronfeldt, Loeb, & Wyckoff, 2013).

Three confounding challenges, each of which significantly impacts teacher motivation, turnover, and student achievement in rural districts, have been identified (Figure 1).

Figure 1. Rural Challenges and Impacts
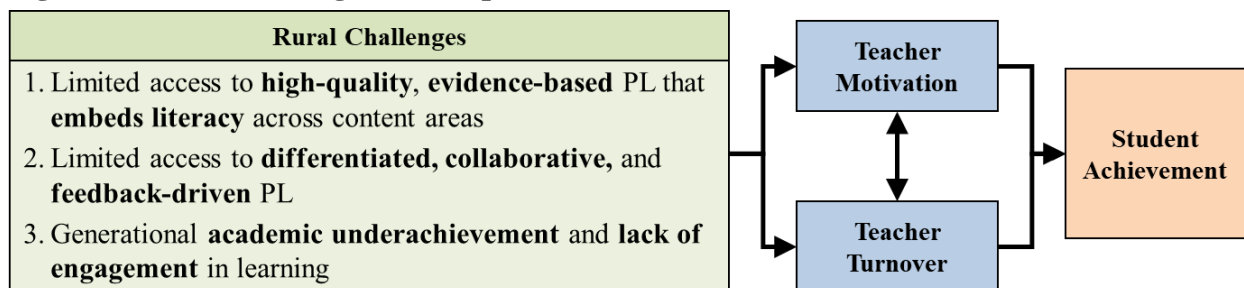
Rural Connect will address these challenges by (a) developing innovative, replicable solutions for practitioners and (b) adding to scientific knowledge of rural teacher development.

(1) **Limited access to high-quality, evidence-based, literacy-embedded PL**. There are over 27,000 rural schools in the U.S. serving more than 18 percent of the country's student population (USDOE, 2014), yet teachers in these schools have less access to quality, evidence-based PL opportunities than their urban peers (Wei, Darling-Hammond, & Adamson, 2010). This is particularly concerning in light of the high concentration of new and nontraditionally-certified teachers in Florida's rural consortia who need support in developing content and pedagogical knowledge. Of newly hired teachers, over 40 percent are temporarily or alternatively certified.

PL opportunities that focus on cross-curricular literacy integration are of specific importance in the current project, as Florida's rural districts lag behind statewide proficiency averages in all subject areas, with the most significant gaps in ELA performance (see Table 1, p.2). Viewing literacy through a comprehensive and cross-disciplinary lens is especially critical in Florida, where current policy only requires that additional literacy support be provided to students at the lowest level of performance (i.e., Level 1 on state ELA assessments). While districts may choose to provide ELA intervention to additional struggling students, time and budget constraints, particularly in lower-performing rural schools, often prevent this.

Rural Connect will embed literacy instruction strategies across content areas, **identifying a systemic K-12 model of literacy integration with specific emphases on challenges faced by rural teachers** (i.e., chronically low-performing students, limited time and resources, isolation from peers, and high percentage of new and alt-certs). The project will add to knowledge of how cross-content literacy strategies can be implemented to overcome rural barriers.

(2) **Limited access to differentiated, collaborative, and feedback-driven PL**. Research

suggests that providing teachers with collaborative, teacher-led learning experiences driven by improvement-focused feedback (i.e., well-executed Professional Learning Communities [PLCs]) enhances collective teacher efficacy, which has been empirically linked to teacher effectiveness and student performance (Eells, 2011; Hattie, 2012; DeWitt, 2017; Voelkel & Chrispeels, 2017; Donahoo, 2017). In small and rural districts, however, opportunities for peer collaboration are limited by time, staffing, and funding constraints. Rural teachers in Florida have cited inadequate time, often fueled by staffing shortages, as a primary challenge to their motivation and sense of professionalism, noting most frequently the lack of time for collaborative planning, receiving feedback from peers and teacher leaders, and sharing resources (Wright, 2018a). "Singleton" teachers (those with no content-alike peers within their school or district) have especially few opportunities to collaborate with and learn from peers. Furthermore, few PL opportunities are differentiated to the specific challenges faced by rural educators and the unique needs of their students. A driving force of Florida's rural consortia is the knowledge that rural districts are not only different from urban districts, they are each unique and different from one another.

Built on evidence-based models of self-direction and teacher leadership, Rural Connect is designed to increase the relevance and accessibility of differentiated, teacher-driven PL experiences. The study will **test and refine a framework for combatting isolation in rural districts**, identifying methods for maximizing the quality and sustainability of cross-district peer collaboration and improvement-focused feedback. Additionally, evaluation of Rural Connect will **build knowledge of differential rural educator needs and specific, replicable approaches to addressing them**. The framework and strategies refined over the course of the project will enable the model to be implemented in rural communities across the country. Thus the project has critical implications for teachers of over 9 million rural students.

(3) **Generational academic underachievement and lack of engagement**. Nationwide, educational attainment is significantly lower in rural than non-rural areas, and these disparities are most glaring in high-poverty rural areas (USDA, 2017). Rural poverty is associated with chronic, generational academic underachievement, perhaps explained by empirically-linked relationships between student and family expectations regarding educational attainment and contextual factors including socioeconomic status (Schmitt-Wilson, Downey, & Beck, 2018; Apostal & Bilden, 1991; Tieken, 2016). Because expectations may play an important role in student engagement, struggling students in these communities must be provided not only the tools to academically succeed, but also the motivation to engage with rigorous coursework.

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██**.** The project proposes a model whereby job-embedded, teacher-directed PL leads to increases in student achievement, highlighting motivation and engagement as the mechanisms through which achievement outcomes occur. The evaluation will test the extent to which Rural Connect activities enhance student and teacher motivation, and how they in turn impact student academic gains, using two validated measures of motivation and engagement: ██

██████████████████████████████████ To date, little has been published on the validity of various measures of motivation in predicting student and teacher performance outcomes. Furthermore, while there is an underlying understanding in the educational research community that "motivation matters," no studies to our knowledge have explicitly investigated a mediated model, whereby teacher and student motivation mediate the relationship between PL processes and student achievement. Rural Connect will **expand knowledge of the underlying processes through which PL impacts student outcomes** by testing this model.

A2. Promising new strategies that build on existing strategies. Rural Connect is an innovative

approach to supporting and developing teachers of high-need, rural students. Designed to address

the rural challenges identified above, the project expands on the traditional PLC framework by

facilitating a **two-year**, **three-phased**, literacy-embedded, regional model of individualized PL.

  Rural Connect Process. Figure 2 summarizes the Rural Connect process.

Figure 2. Rural Connect Process
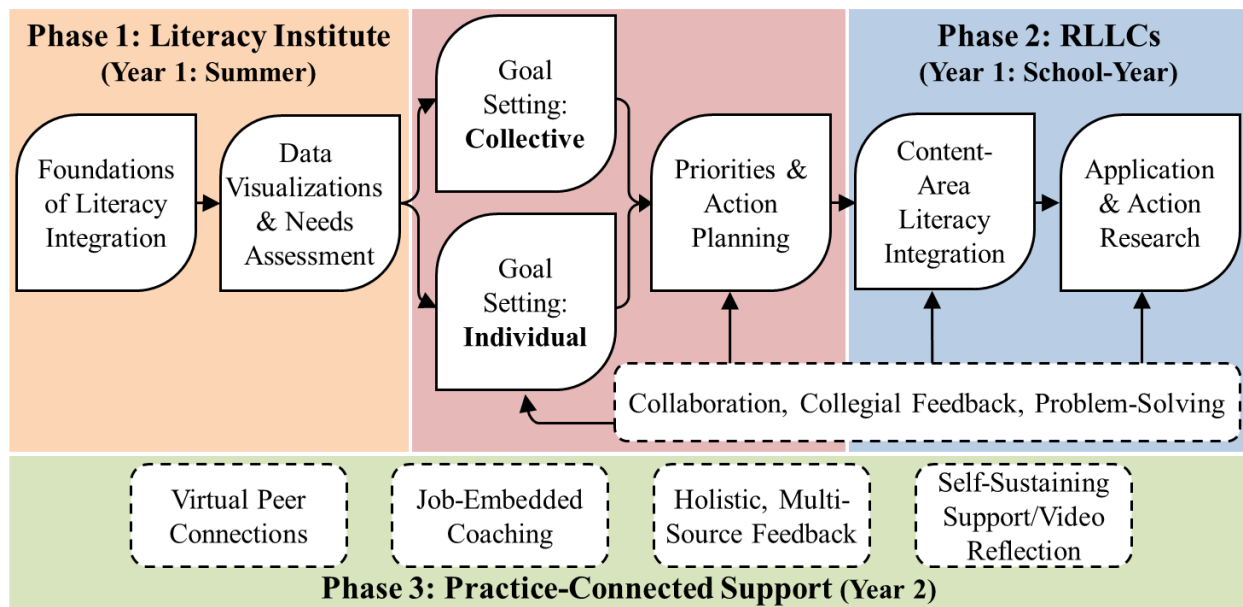
Note: Goals, priorities, and action plans are continually reviewed/revised based on data, feedback, and self-reflection, and are thus highlighted separately.

  In Phase 1, a four-day summer **Literacy Institute** connects teachers with cross-district

peers, instructional coaches, and school-based administrators for two days of interactive, expert-

delivered PL focused on: (a) cross-content strategies for building student literacy in rural

communities; (b) integrating literacy instruction into content-area standards (see Appendix I,

Table 1 and sample training materials following); and (c) using Data Visualizations (i.e., visual

representations of multi-dimensional school performance data, including student achievement

profiles, content focus analyses, subgroup comparisons, and school grade forecasts; Appendix I,

Fig. 1-4) to support educator analysis of individual, district, and regional needs. Two days of

breakout sessions connect content-alike teachers to assess needs, set individual and collective goals, develop action plans for integrating literacy practices in their content areas, and propose an action research study. These sessions form the foundation for ongoing learning in Phase 2.

Phase 2 consists of seven **Regional Literacy Learning Communities** (RLLCs) during the school year (4 face-to-face; 3 virtual). These content-area sessions (see proposed course listing, Table 2, p. 11) provide a formalized platform for reflective practice, where teachers share implementation successes and challenges, examine and present results of action research, receive feedback, engage in focused learning topics, problem-solve, and revisit goals, priorities, and strategies for integrating literacy instruction into their classrooms. RLLCs for Instructional Coaches focus on developing practices for supporting teachers' integration of literacy into content areas and on practice-connected support areas listed in Table 3 (p. 11). New Teacher Network RLLCs, designed for new and alt-cert teachers, focus on "survival skills" for basic literacy instruction, integrating literacy across content areas, and orientation to literacy resources.

In Phase 3, ongoing **Practice-Connected Support** is designed to strengthen and sustain implementation through: (a) **Virtual connections with peers** via virtual meetings/webinars (Zoom, Adobe Connect), social media events (Twitter chats, Facebook Live, Google Hangouts), and use of Learning Management System apps for sharing video-recorded lessons, resources, and lesson plans; (b) **Job-embedded coaching**, including modeling, data analysis support, and observation/feedback, provided by RLLC-trained instructional coaches. Coaches have a unique role in the project, as they are both participants (i.e., they attend RLLCs to improve coaching practices) and deliverers of support for other Connect teachers; (c) **Holistic, multi-source feedback** through reflective practice protocols that integrate self-reflection with student, peer, coach, and school leader feedback (NJDOE, 2017); and (d) **Self-sustaining support** through

video reflection, which provides invaluable feedback for teachers' professional growth (Tripp & Rich, 2012; Knight, 2014) while concurrently populating a video resource library to be used for ongoing development of teachers, coaches, and school leaders.

      Rural Connect Structure. Rural Connect is also innovative in its structure, which is (1) **regional and connecting**, bringing together content-alike teachers to combat isolation in rural districts; (2) **integrated and cross-curricular**, embedding evidence-based, standards-aligned literacy strategies into all content areas and across grade levels; and (3) **self-directed and feedback-driven,** providing teachers with autonomous, individually-driven learning experiences guided by improvement-focused feedback to maximize their motivation and collective efficacy. These approaches align with national trends toward customized and personalized PL.

      <u>Regional and Connecting</u>. Research cites structured collaboration, active learning, and opportunities for leadership as core features of effective PL (Garet et al., 2001; NBPTS, 2014; Levine & Marcus, 2010). Meaningful peer collaboration increases motivation, goal commitment, and innovation, and when it focuses intently on student learning, leads to improved academic outcomes over time (Vescio, Ross, & Adams, 2008; Locke & Latham, 2002).

      Both nationally and regionally, however, teachers have reported a general lack of support, low self-efficacy, and few opportunities for leadership (Jacob, Vidyarthi, & Carroll, 2012; Jacob & McGovern, 2015). In rural districts, singleton teachers feel especially isolated, with no opportunity for true peer collaboration, feedback, or common planning. High-stakes testing and school accountability measures exacerbate these teachers' motivational drains. A singleton Algebra I teacher, for example, is solely responsible for student success in Algebra, which is both a student graduation requirement and component of the School Grading system.

      Rural Connect will bring **collaborative, learning-focused, participative teacher**

leadership practices to a regional level, facilitating cross-district RLLCs via face-to-face collaboration and virtual (synchronous and asynchronous) planning, learning, and support. Leveraging the consortia model, the regional approach is expected to combat feelings of isolation that commonly occur in small, rural districts while providing the pedagogical knowledge and implementation support needed to integrate literacy instruction across the curriculum.

Integrated and Cross-Curricular**.** Research supports the importance of providing content-area teachers with PL focused on discipline-specific literacy requirements, literacy instructional strategies, and literacy engagement techniques (Kamil et al., 2008). All educators across all grade levels must be prepared to build student literacy, as it is a predictor of math and science achievement and a non-negotiable requirement for college and career. In the digital age, more than ever, effective instruction must move away from a traditional view of literacy as "reading" toward a focus on developing "multi-literacies" (Cope & Kalantzis, 2009) – those which require integrated, contemporary approaches to literacy learning (Buckingham, 2007; Jenlink, 2017).

Despite the importance of cross-curricular approaches, many teachers, particularly those in content-area courses, often lack the knowledge of – and self-efficacy for implementing – cross-content literacy instruction and engagement strategies. Many are non-traditional or alt-certs (i.e., did not complete a traditional teacher preparation program). Furthermore, as students move beyond elementary school, emphasis tends to shift to ELA as a separate discipline, leading secondary-level content-area teachers to view literacy instruction as "not their responsibility."

Rural Connect takes a two-pronged approach to literacy integration, (a) providing teachers with **strategies for embedding literacy instruction** into content areas (Table 2), and (b) strengthening and sustaining teachers' implementation of these concepts in the classroom, **maximizing their impact on student outcomes through practice-connected support** (Table 3;

Shanahan & Shanahan, 2008; Shanahan, 2015; Chauvin & Theodore, 2015; Zoch et al., 2016).

Table 2. Literacy Instruction Strategies Embedded into Content-Area RLLCs

Evidence-Based Literacy Instruction Strategies	
• Building Vocabulary/Academic Language	• Text Meaning Across Content Areas
• Text Complexity	• Standards-Aligned Writing
• Fluency & Stamina with Complex Text	• Small Group Instruction

Content-Area RLLCs: Proposed Course Listing		
Elementary	**Secondary**	
ELA: K-2 / ELA: 3-5	ELA: 6-12	Civics: 7th Grade
Science: 5th Grade	Science: 8th Grade	US History: 10th Grade
Elementary Math	Secondary Math: 6th-Algebra I	New Teacher Network: 6-12*
New Teacher Network: K-5*	Biology	Instructional Coaching: 6-12*
Instructional Coaching: K-5*		

Notes: New Teacher RLLCs focus on "survival skills" for basic literacy instruction, integrating literacy into content areas, and orientation to available literacy resources. Instructional Coaching RLLCs focus on coaching practices and practice-connected support for classroom teachers.

Table 3. Maximizing Student Outcomes through Practice-Connected Support

Practice-Connected Support: Focus Areas	
• Motivating & Engaging Students in Literacy	• Collaborating w/ Families to Promote Literacy
• Using Digital Texts & Diverse Reading Materials to Enhance Equity of Instruction	• Collaborating w/ School Leaders to Support Systemic Improvement

<u>Self-Directed and Feedback-Driven</u>. Models of effective, efficacy-building PL have noted the importance of empowering teachers through self-direction (Donahoo, 2017). Research has established clear links between self-directed, personalized PL and enhanced instructional practice, teacher motivation, and student learning (Lopes & Cunha, 2017; Pearson & Moomaw, 2005; Spector, 1986). Transformative Learning theories (Mezirow, 1985; Garrison, 1997) and expectancy models of motivation (e.g., Pritchard & Ashwood, 2008) also highlight the importance of an individual's personal accountability and self-monitored control over the PL process. Adult learners in particular have an underlying need to be self-directing; they are motivated to learn when the learning is personally relevant, individually-driven, interactive, and self-reflective (Mezirow, 1985; Knowles, 1984; Baumgartner, 2001).

Designed to address a need in the participating districts for individually-relevant, differentiated, and customized PL (Wright, 2018a), Rural Connect builds on traditional models of self-directed learning by providing a formal yet iterative structure within which **teachers use multi-dimensional data and holistic, multi-source feedback** (from students, peers, coaches, and leaders) to identify goals, targets, and priorities, refine content- and classroom-specific literacy integration strategies, and determine personalized ways to improve and sustain implementation. Thus, the project is expected to increase teachers' motivation and efficacy, while increasing the relevance of PL and the magnitude of its student-level impacts.

B. Quality of the Project Design

B1. Goals, objectives, outcomes. Rural Connect is designed to achieve three primary goals. For detailed activities, immediate, intermediate, and long-term outcomes, see the Logic Model (Appendix G). Table 4 presents measures and targets for expected outcomes (baseline data will be collected during FY1, 2019-20). Measurement tools are described in Section D3.

Table 4. Goals, Objectives, Measures, and Targets

Goal 1. Increase achievement and literacy engagement of high-need, rural students.		
Objective 1.1 Support the integration of evidence-based, standards-aligned literacy instruction strategies into all content areas.		
Outcomes	**Measures**	**Targets**
Increased student achievement in: ELA, Social Studies, Math, and Science.	▪ % of students proficient in ELA/Soc. Studies ▪ % of students meeting growth in ELA	3 percentage point increase per year in years 2-5
	▪ % of students proficient in Math/Science ▪ % of students meeting growth in Math	2 percentage point increase per year in years 2-5
Objective 1.2 Develop teacher mastery of strategies for engaging students in literacy learning.		
Increased teacher knowledge/use of literacy instruction strategies.	% of participating teachers who improve by 1 or more observation rubric levels (or maintain level 3+) on targeted literacy instruction strategies	85% per year in years 2-3; 90% in years 4-5
Increased student engagement and self-efficacy for literacy learning.	% of students who self-report engagement/self-efficacy levels of 4 or higher (5pt scale)	3 percentage point increase per year in years 2-5
	% of participating teachers who improve by 1 or more observation rubric levels (or maintain level 3+) on student engagement strategies	85% per year in years 2-3; 90% in years 4-5

Goal 2. Increase collective efficacy and motivation of rural teachers.						
Objective 2.1 Support the implementation of collaborative, personalized, feedback-driven PL.						

Outcomes	Measures	Targets				
		FY1	FY2	FY3	FY4	FY5
Increased teacher self-efficacy & collaboration	% of teachers who improve by 1 or more observation rubric levels (or maintain level 3+) on collaboration strategies (4-level rubric)	N/A	80%	85%	90%	90%
	% of teachers who self-report self-efficacy levels of 4 or higher (5pt scale)	5 percentage pt. increase per year in years 2-5 (FY5: 90%)				
Increased collective efficacy & motivation	% of participants who self-report collective efficacy and motivation levels of 4 or higher	5 percentage pt. increase per year in years 2-5 (FY5: 90%)				

Objective 2.2 Strengthen and sustain educator effectiveness through practice-connected support.						
Improved quality relevance of PL	% of participants who rate quality and relevance of PL/coaching/feedback at level 4 or higher	75%	85%	90%	90%	90%
Increased teacher retention	% of effective/highly effective teacher participants who remain in their district	3 percentage point increase per year in years 2-5				

Goal 3. Refine an innovative, replicable model for rural PL, collaboration, and support.						
Objective 3.1 Assess the variable impacts of Rural Connect to identify "what works and why."						

Outcomes	Measures	Targets				
		FY1	FY2	FY3	FY4	FY5
High-fidelity implementation and refinement of field-tested model	Total # participating teachers	150	500	700	800	800
	# schools with participating teachers	30	90	130	155	155
	# students impacted	N/A	2500	9050	13100	14780
	# RLLC courses offered	N/A	6	14	8	6
	# job-embedded coaching hours (per teacher)	N/A	30	35	42	45
	% of school leaders participating/collaborating	80%	85%	90%	90%	90%
	Implementation Fidelity Alignment score	9.0	9.25	9.5	10	10

Objective 3.2 Sustain, expand, and build toward systemic impacts through dissemination and replication.						
Sustained impacts in Rural Connect districts	% of teachers maintaining or increasing student achievement at annual follow-up	N/A	N/A	90%	90%	90%
	% of teachers reporting sustained use of RC-developed strategies, resources, and collaboration	N/A	N/A	80%	80%	80%
Dissemination of results	# papers/presentations to academic audiences	N/A	N/A	1	2	2
	# papers/presentations/workshops to practitioners	N/A	N/A	3	4	4

B2. Conceptual framework underlying the research. Aligned with the goals and objectives,

the conceptual framework (Figure 3) outlines the foundational components of Rural Connect

(i.e., its structure, evidence-based literacy content, and areas of focus for practice-connected

support), which underlie its Critical Processes. The framework describes how these processes are

proposed to impact changes in the knowledge, behavior, and perceptions of students (Goal 1) and teachers (Goal 2), which in turn impact teacher and student performance outcomes. The model specifies the expected mediating effects of (a) teacher knowledge, self-efficacy, and collaboration and (b) teacher motivation, collective efficacy, and retention on the engagement and achievement of students. That is, changes in teacher outcomes are the mechanisms through which student outcomes improve. The model also describes expected impacts of the research/ evaluation processes (Goal 3), which include a refined model for replication in other settings.

Figure 3. Conceptual Framework/Theory of Change

Foundations & Processes		Expected Impacts	
Connect Structure	**Critical Processes**	**Changes in Knowledge, Behavior, & Perceptions**	**Performance Outcomes/Impacts**
• Regional & Connecting • Integrated & Cross-Curricular • Self-Directed & Feedback-Driven	Literacy Institute ↓ Cross-district RLLCs ↓ Virtual peer connections ↓ Job-embedded coaching ↓ Holistic, multi-source feedback ↓ Self-sustaining support/ Video Reflection	**Teacher Outcomes (Goal 2)** • **Knowledge** and **use** of literacy instruction strategies • **Self-efficacy** for lit. instruction • **Collaboration**/Reduced isolation	**Motivation, Collective Efficacy, Retention**
Evidence-Based Content		**Student Outcomes (Goal 1)**	
• Literacy-embedded • Standards-aligned • Data-driven/Needs-based		• **Self-efficacy** for literacy learning • **Engagement** in literacy learning	**Student Achievement**
Practice-Connected Support		**Refinement & Replication (Goal 3)**	
• Student Engagement • Equity of Instruction • Parent/Family Engagement • School Leader Collaboration	• Formative Implementation/ Fidelity Evaluation • Impact Study • Dissemination of Results	• High-fidelity implementation • Refined field-tested model	**Sustainability, Replicability, Scalability**

B3. Feedback and continuous improvement. Iterative assessment, feedback, and continuous improvement are embedded in Rural Connect's implementation and evaluation. Implementation is phased (1) by region, (i.e., beginning with NEFEC cohorts and expanded into PAEC), and (2) by grade level (i.e., beginning with K-5 in each region and expanded into 6-12). The HEC region will serve as a waitlist comparison group, implementing the intervention in Year 5 (see Table 5). Coupled with **quarterly formative feedback** and **collaboration of all stakeholders** (Section C1), this phased timeline allows for timely, data-driven iterations in both **design** and **evaluation**.

Table 5. Implementation Timeline by School Year

	Cohort	Region	Year 1: 19-20	Year 2: 20-21	Year 3: 21-22	Year 4: 22-23	Year 5: 23-24
K-5	1	NEFEC	B/L Data	LI · RLLCs	PCS		
	2	PAEC	B/L / BAUC Data Collection		LI · RLLCs	PCS	
	BAUC	HEC	B/L / BAUC Data Collection				LI · RLLCs
6-12	3	NEFEC		B/L Data	LI · RLLCs	PCS	
	4	PAEC		B/L / BAUC Data Collection		LI · RLLCs	PCS
	BAUC	HEC		B/L / BAUC Data Collection			LI · RLLCs

Note: B/L=Baseline Data Collection; LI=Literacy Institute; RLLCs=Regional Literacy Learning Communities; PCS=Practice-Connected Support; BAUC=Business-as-Usual Comparison

Implementation fidelity and improvements to design. Program processes will be examined continually for fidelity, allowing for identification of context-specific challenges in need of adaptation (Meyers & Brandt, 2015). The phased implementation will enable fidelity data to be used for collaborative problem-solving and to improve program delivery prior to expansion in Years 3-5, thereby maximizing impact on student outcomes (Kershner et al., 2014).

Implementation will be assessed both quantitatively and qualitatively (see Table 9, p.22). Quantitative measures include: PL attendance rates; dosage (e.g., # coaching hours, # RLLC courses, # virtual sessions, # schools represented); cost per participant; and program retention. Qualitative assessment methods include: PL observations; facilitator interviews; focus groups with participants; student/teacher work samples; classroom observations (conducted by coaches and school leaders); video-recorded lessons; and coaching reflections (as captured through

██████ a NEFEC-developed tool for managing and improving coaching practice-see Appendix I, Fig. 5). These data will form the basis for an evaluator-developed Implementation Fidelity Alignment (IFA) Tool, which specifies indicators and operational definitions of key project components, data sources, and rating criteria.

Quarterly formative/fidelity reports will provide a formal feedback structure to supplement collaboration across project and evaluation teams. Project personnel will meet quarterly with evaluators to incorporate the results of fidelity assessments into their work.

Guided by principles of developmental evaluation (Patton, 2016), evaluators will, in turn, use project feedback to adapt evaluation plans as needed (at least annually).

Sustainability and replicability. Assessment of implementation factors described above will provide feedback regarding sustainability and replicability. For example, evaluation and documentation of the RLLC facilitation process will define the process variables and facilitator skills necessary for replication and expansion and will allow for development and refinement of facilitator training protocols. Additionally, fidelity/process measures will be integrated into outcome analyses as moderators/mediators (see Section D) to enable identification of optimal approaches and critically important processes for sustaining and replicating results.

Progress toward goals. Formative indicators of project effectiveness, collected both for treatment and comparison groups, will be used to assess progress toward goals and objectives:

- Student achievement: Progress monitoring assessments collected quarterly.

- Student engagement/self-efficacy: Perceptual surveys and student work samples.

- Teacher motivation/self-efficacy/collective efficacy: Perceptual surveys, focus groups (2 per RLLC content-area), leader feedback, and classroom observations collected semi-annually.

C. Adequacy of the Resources and Quality of the Management Plan

C1. Responsibilities, timelines, milestones. NEFEC has over 20 years of experience developing and implementing large scale, multi-district, and multi-year initiatives on time and within budget, including prior USDOE-funded projects. The management plan (Table 6) includes the input and active participation of three rural consortia and 29 participating LEAs.

Table 6. Overview of Management Plan: Milestones, Responsibilities, & Timelines

Major Milestones	Responsibility	Yrs	Timeline
Select key stakeholders to serve on Leadership, Instructional, District/School Advisory, & Evaluation Teams and define within- and across-team communication processes.			
Develop MOUs and contracts with key stakeholders	PC	1	Target: Oct 15, 2019
Schedule Instructional Team (INS) meetings	INS, PC	1-5	Monthly starting Oct 2019

Schedule Evaluation Team (EV) meetings	EV	1-5	Monthly starting Oct 2019
Schedule cross-team meetings with Leadership Team (LT)	LT, INS, ETS, EV	1	Monthly starting Oct 2019
		2-5	Quarterly-Oct/Jan/Apr/Jul
Schedule cross-team meetings with District-School Advisory Team (DSAT)	DSAT, LT, INS, ETS, EV	1-5	Quarterly-Oct/Jan/Apr/Jul
Refine cross-content approaches for literacy-integrated Professional Learning.			
Align literacy strategies and standards with content-area standards; develop crosswalk	INS	1	Target: May 2020
		2-5	Redesign/review: Quarterly
Use Data Visualizations and progress monitoring data to identify LEA/school needs	LT, INS, DSAT	1-4	Jan-Mar 2020; annually thereafter
Refine content for Literacy Institute based on LEA and school needs; secure and train external PL consultants	LT, INS, DSAT	1-4	Mar-May 2020; annually thereafter
Adapt content/delivery based on formative feedback, fidelity assessments, and outcome evaluation	INS, EV, DSAT	1	Mar-Aug 2020
		2-5	Quarterly-Oct/Jan/Apr/Jul
Recruit and train teachers to integrate literacy instruction strategies into content areas through collaborative, feedback-driven PL.			
Recruit 150 K-5 teachers (per cohort) from NEFEC and PAEC regions to participate in intervention	PC, INS, DSAT	1-2	Mar-Jun 2020; Mar-Jun 2021
Recruit 200 6-12 teachers (per cohort) from NEFEC and PAEC regions to participate in intervention	PC, INS, DSAT	2-3	Mar-Jun 2021; Mar-Jun 2022
Recruit 100 elementary and secondary teachers from HEC to participate in delayed treatment	PC, INS, DSAT	4	Mar-Jun 2023
Identify BAUC groups for each cohort	EV	1-3	Mar-Jun, annually
Facilitate Literacy Institute with participating teachers, coaches, and school leaders	LT, INS, DSAT	1-4	Jul 2020; annually thereafter
Facilitate 4 face-to-face and 3 virtual RLLCs (per cohort)	LT, INS, DSAT	2-5	Sep-Jun, annually
Provide ongoing practice-connected support for integrating literacy into content areas.			
Recruit 25 Instructional Coaches per cohort to participate in RLLCs and deliver coaching to RLLC teachers	PC, LT, INS, DSAT	1-4	Recruit: Mar-Jun, annually
		2-4	Coaching: Oct-Jun ongoing
Train coaches in use of ▆▆▆▆ coaching tool	INS, ETS, DSAT	1	Target: Oct 2020
		2-5	Periodic retraining
Purchase and install 58 Swivels for video reflection/ virtual connections; provide training	PC, ETS, DSAT	1	Target: Jun 2020
		2-5	Periodic retraining
Facilitate ongoing synchronous/asynchronous virtual connections between teachers and coaches/peers	DSAT, INS, ETS	2-5	Oct 2020, ongoing
Facilitate coach/leader collaboration with teachers to implement self-reflection and multi-source feedback	DSAT, INS, ETS	2-5	Oct 2020, ongoing
Implement video reflective practice; develop video resource library	DSAT, INS, ETS	1	Initial setup: Jun 2020
		2-5	Ongoing
Empirically investigate the effectiveness of Rural Connect and prepare for replication/expansion.			
Develop Implementation Fidelity Alignment (IFA) Tool and associated rubric	EV	1	Oct 2019-Jun 2020
Develop formal RLLC facilitator training modules; refine protocols for replication and expansion	INS, EV, DSAT	1	Oct 2019-Jun 2020
		2-5	Review/refine: ongoing
Compile student performance/progress monitoring data for treatment and BAUC groups	EV	1	Oct 2019-Jul 2020
		2-5	Quarterly-Oct/Jan/Apr/Jul
Administer perceptual surveys to treatment and BAUC teachers and students	EV	1	Pre-test: Jul 2020
		2-5	Semi-annually: Oct/Apr
Conduct focus groups with RLLC participants	EV	2-5	Semi-annually: Nov/May
Conduct quarterly implementation evaluation; provide feedback in cross-team meetings	EV	1	Apr 2020; Jul 2020
		2-5	Quarterly-Oct/Jan/Apr/Jul

Conduct annual implementation/impact evaluations; refine/retest to optimize outcomes and replicability	EV, INS	2-5	May-Aug, annually
Conduct full-scale impact evaluation (QED)	EV	5	May-Aug 2024
Disseminate results via publication, presentation, and on-line portal	EV	2-5	Aug 2020; annually thereafter

Note: PC=Project Coordinator; LT=Leadership Team (Project Coordinator, Consortia Exec. Directors); INS=Instructional Team (content/instructional experts, PL facilitators); DSAT=District/School Advisory Team (district/school leaders, coaches, teacher reps); ETS=Educational Technology; EV=Evaluators.

C2. Key project personnel. All project personnel have extensive experience in complex, multi-site projects that serve high need, rural students (see Appendix B). The key leaders below will manage teams of content experts and district- and school-level implementers.

Table 7. Key Project Personnel, Responsibilities, Relevant Training & Experience

Name & Project Responsibilities	Relevant Experience & Training
Ronda Bourn, Project Coordinator (NEFEC) ▪ Maintains cross-team communications; oversees budget expenditures; develops project reports; collaborates with USDOE and across consortia	▪ Managed $31 million in grant funding including Project Director for TIF-4 grant (8 LEAs) and Literacy Essentials and Reading Network grant ▪ Chair of Florida's Student Growth Committee
Dr. Maria Pouncey, Expansion Coordinator-PAEC ▪ Facilitates expansion in Panhandle districts; Manages PAEC Instructional Team staff; Collaborates across consortia	▪ 6 years managing/implementing federal and state funded instructional programs in 18 rural LEAs ▪ 20 years planning, coordinating, and evaluating programs serving high-need students and families
Donna Garcia, Expansion Coordinator-HEC ▪ Facilitates expansion in HEC districts; Manages HEC Instructional Team staff; Collaborates across consortia	▪ 5 years managing/implementing state and federal initiatives across multiple rural districts ▪ 14 years PL facilitation/coordination, program development, training, and school leadership
Rhonda Clyatt, Instructional Team Lead (NEFEC) ▪ Oversees ELA and embedded literacy curriculum in content areas; Manages Instructional Team/ facilitators; Collaborates with evaluators and project Expansion Coordinators	▪ 13 years PL design/facilitation, program development, training, and instructional coaching ▪ Specializes in district-specific support; ELA PL & curriculum development; developing new teachers, coaches, & administrators
Dr. Chris Pryor, Instructional Team: School Leadership (NEFEC) ▪ Oversees practice-connected support for engaging leaders into PL process; Supports coach and leader collaboration, observation/multi-source feedback	▪ 5 years PL design/facilitation, program development, training, and school leadership ▪ Specializes in principal mentoring, instructional observation, feedback, diverse learner needs ▪ Award-winning principal; published researcher
Dr. Natalie Wright, Lead Evaluator, Independent Evaluation Team (CIC Planning Group) ▪ Oversees implementation, outcome and impact evaluations; Conducts WWC-compliant research;	▪ 8 years as Lead Evaluator for USDOE and state grants; Educator PL & student literacy research (including Rural Connect pilot studies)

Provides feedback to project teams; Disseminates findings via conferences and publications	▪ Trained in WWC Group Design Standards; published researcher; Expert in survey design, educator/student motivation, psychometrics
Instructional Team: **Adam Azula**-Social Studies/ Technology Integration; **Suzanne Beck**-New Teachers/Instructional Coaches); **Jake Massey**-Math ▪ Oversees integration of literacy into content-area curriculum; Provides instructional and data supports for teachers; Trains expansion facilitators	▪ Over 20 years combined experience in PL design/facilitation, teacher development, training, and curriculum development ▪ Expertise in technology integration, teacher mentoring, instructional support, content-area standards

C3. Commitment to continued support of the project. As an Educational Service Agency that derives a significant amount of its funding from LEA fees, NEFEC has a track record of securing the resources needed to facilitate sustainability and expansion of large, multi-district projects.

Committed partnerships. Several sustainability and expansion partnerships have been developed (see Appendix C). Florida and the Islands Comprehensive Center partners with the consortia to provide need-based PL and will align its resources with efforts of this grant to sustain the Literacy Institute, RLLCs, and practice-connected support. Florida Diagnostic & Learning Resources Systems (FDLRS) provides support services to exceptional education programs and families of students with disabilities (SWDs). FDLRS will support the project through integration of research-based content on behalf of SWDs with an ultimate goal of expanding RLLCs to include ESE courses. North Florida Economic Development Partnership will work with NEFEC to ensure that educational programs are aligned with economic needs of north Florida. The project will be sustained by expanding RLLCs to Career/Technical Education areas that meet identified economic needs. University of Florida (UF) and University of North Florida (UNF) will have access to the video resource bank for use with teacher preparation programs and online courses. In turn, they are committed to incorporating project feedback into their approaches to rural teacher preparation. Battelle for Kids, a national network devoted to advancing learning access, equity, and success for rural students, will disseminate study results

throughout their rural collaborative of 490 LEAs and 600,000 students. Florida Department of Education has endorsed the project for its alignment to Florida's Strategic Plan. Project evidence will be highlighted as a model for improving student achievement throughout the state.

Infrastructure and Staffing Resources. Video equipment will be purchased and installed in each participating LEA to assist teachers with self-reflection and virtual peer connections. Recorded lessons will populate a video resource library to be used for continued educator development (e.g., coaching/modeling for teachers, observation PL for school leaders), and will be used by teacher prep programs at UF and UNF. District-level coaches will be prepared to support teachers in integrating literacy instruction and engaging students in literacy learning, serving as a mechanism for ongoing job-embedded support beyond grant funding.

Dissemination. NEFEC and the external evaluators will build on preliminary research of the Connect model (presented at American Educational Research Association [2019], National Rural Education Association [2018], and Association of Educational Service Agencies [2018]). Findings will be disseminated in refereed journals and presented at national research-, practice-, and policy-focused conferences. An online portal dedicated to the project and its results will provide open source materials to interested practitioners, policy makers, and researchers.

D. Quality of the Project Evaluation

D1. Meets WWC standards with reservations. The evaluation employs a cluster-level QED designed to meet WWC Standards with Reservations. The study will examine: (a) the impact of Rural Connect on student outcomes, (b) its impact on teachers, (c) mediating effects of student and teacher knowledge, perceptions, and behavior, and (d) implementation fidelity, identifying the factors related to maximum student outcomes (see Research Questions, Table 10, p. 24). The phased intervention (see Table 5, p.15) will take place across two elementary and two secondary

cohorts of teachers. Propensity Score Matching (PSM) will be used to match teachers in each

cohort at baseline with teachers in non-participating schools from the other consortia (Table 8).

By accounting for measured differences between treatment and BAUC groups (Rosenbaum &

Rubin, 1985), PSM will help ensure baseline equivalence that meets WWC's threshold (*Hedge's

g<0.*25; USDOE, 2017). Teachers will be matched on pretest measures of outcomes used in final

analyses (student achievement on state tests) and on teacher and student demographics (grade

level, race/ethnicity, free-reduced lunch, English language learners). Matching will take place

annually as cohorts are added to the analytic sample, ensuring baseline equivalence of clusters.

Annual implementation and impact studies will be conducted in years 2-5 to provide

fidelity assessment and annual evidence of effectiveness. Sustained effects will be assessed

annually for Cohorts 1-3. Analyses for expansion cohorts (2 and 4) will include examination of

the extent to which results were replicated. In year 5, a **full-scale impact** study will be conducted

based on the combined sample of students/teachers from Cohorts 1-4.

Table 8. Research Sample & Timeline

Study Sample							Research Timeline					
Cohort	RC	BAUC	*n* per condition		*n* Schools			FY1	FY2	FY3	FY4	FY5
			Teachers*	Students	RC	BAU						
1 (K-5)	NEFEC	PAEC; HEC	125	2,500	30	30	Implementation			x	x	
							Impact / Sustained Effects				x	x	x
2 (K-5)	PAEC	HEC	125	2,500	30	20	Implementation			x	x	
							Impact / Sustained Effects					x	x
3 (6-12)	NEFEC	PAEC; HEC	175	4,050	30	40	Implementation			x	x	
							Impact / Sustained Effects					x	x
4 (6-12)	PAEC	HEC	175	4,050	40	15	Implementation				x	x
							Impact / Sustained Effects						x
Full-Scale (Cohorts 1-4)			600	13,100	130	105	Impact					x
*****Notes**: 1. Sample size includes classroom teachers only (excludes 25 instructional coaches per cohort). 2. *n*=100 teachers in the HEC region will be offered delayed treatment in Year 5.												

Conservatively assuming a 20% teacher attrition rate (pilot research suggests attrition

rates <15%; Wright, 2019), we estimate 20,960 students will be matched across 960 teachers

(total in both conditions). **Power analysis**, in the context of a difference-in-differences design

accounting for clustering of students within teachers, yields a minimum detectable effect size in the final impact study of 0.11 for student outcomes and .23 for teacher outcomes, estimated using PowerUp! (Dong & Maynard, 2013). Assumptions were: Power 80%; $\alpha=0.05$; ICC=0.15 (as recommended for rural educational interventions [Hedges & Hedberg, 2007]); R2 at student and teacher levels=0.6 (using pre-treatment measures of student achievement and demographics).

D2. Guidance about strategies suitable for replication. The evaluation includes assessment of project implementation (see B3) utilizing a **mixed methods design**, whereby qualitative data are used to explain and enhance quantitative implementation and outcome data (Creswell & Plano Clark, 2007). This design supports innovative, adaptive program development (Patton, 2016) and provides context and conceptual clarity in defining key intervention and program implementation components (Bishop, 2015). These data (Table 9) will be collected quarterly (with the exception of surveys and focus groups, conducted semi-annually to avoid response fatigue) and integrated into outcome analyses as moderators to highlight critical processes for successful replication.

Table 9. Implementation Factors: Mixed Methods Data Collection

Project Inputs	Quantitative Data	Qualitative Data
Evidence-Based Content	LI attendance/completion rate; # content-area crosswalks developed; cost	IFA ratings; participant focus groups; lesson plans, work samples, artifacts
Connect Structure	RLLC attendance/completion rate; # face-to-face sessions; # virtual sessions; session timing; session size; # unique schools participating; cost per participant	IFA ratings; participant focus groups; teacher surveys (quality/relevance of PL); PL observations; facilitator qualifications; facilitator interviews
Practice-Connected Support (virtual peer connections, job-embedded coaching, multi-source feedback, video reflection)	Virtual connection participation rate; # hours of virtual engagement # of job-embedded coaches; # teachers served; # hours per teacher (measured through ▮▮▮ coaching tool) # unique feedback sources; FB frequency Facilitator-rated implementation levels; # videos added to library	IFA ratings; participant focus groups; teacher surveys (quality/relevance of PCS); Virtual connection observations (coded for content and quality); Coach qualifications/training; Coaching content (▮▮▮ tool); participant interviews

D3. Valid and reliable performance data on relevant outcomes. Performance outcomes will

be collected annually for treatment and BAUC groups. <u>Student achievement</u> will be measured by standardized assessments (Florida Standards Assessment [FSA], i-Ready) and state-developed End-of-Course (EOC) exams; <u>teacher performance outcomes</u> (i.e., retention) will be measured using school/district data. Each of these meets WWC validity/reliability requirements (see Appendix I, Tables 2-3 for student outcome data sources by grade level). These data will be used in annual impact analyses and in Year 5's full-scale impact study.

Knowledge, behavior, and perceptions will be collected from treatment and BAUC groups semi-annually. These leading indicators of effectiveness will be used in annual analyses as early measures of impact and tested as mediators in the full-scale impact study. Perceptual data will be collected via surveys with established reliability and demonstrated validity for the study sample (i.e., appropriate age group and setting). Prior administrations of █████████ ████████████████████████████ with a subset of Rural Connect LEAs (Wright 2018a, 2018b) suggest internal consistency (Cronbach's α) exceeding WWC standards (MCA: α=.83; Student MCA: α=.86). Reliabilities for the <u>Teacher Sense of Efficacy Scale</u> (TSES; α=.91; Tschannen-Moran & Woolfolk Hoy, 1998), <u>Teacher Self-Efficacy for Literacy Instruction Scale</u> (TSELI; α=.96; Tschannen-Moran & Johnson, 2011), <u>Collective Teacher Beliefs Scale</u> (CTBS; α=.97; Tschannen-Moran & Barr, 2004), and <u>Turnover Intentions Scale</u> (TIS-6; α=.80; Bothma & Roodt, 2012) exceed WWC standards. <u>Student Literacy Self-Efficacy</u> will be assessed using Reading Self-Efficacy Questionnaire (RSEQ; α=.91; Carroll & Fox, 2017) and Adolescent Literacy and Academic Behavior Scale (ALAB; α=.98; deFur & Runnells, 2011).

<u>D4. Key project components, mediators, outcomes.</u> Consistent with key project components, mediators, and outcomes outlined in the Logic Model, conceptual framework (Figure 3, p. 14), and the goals, objectives, and measurable targets as indicators of acceptable implementation

(section B1), the study will address the following Research Questions:
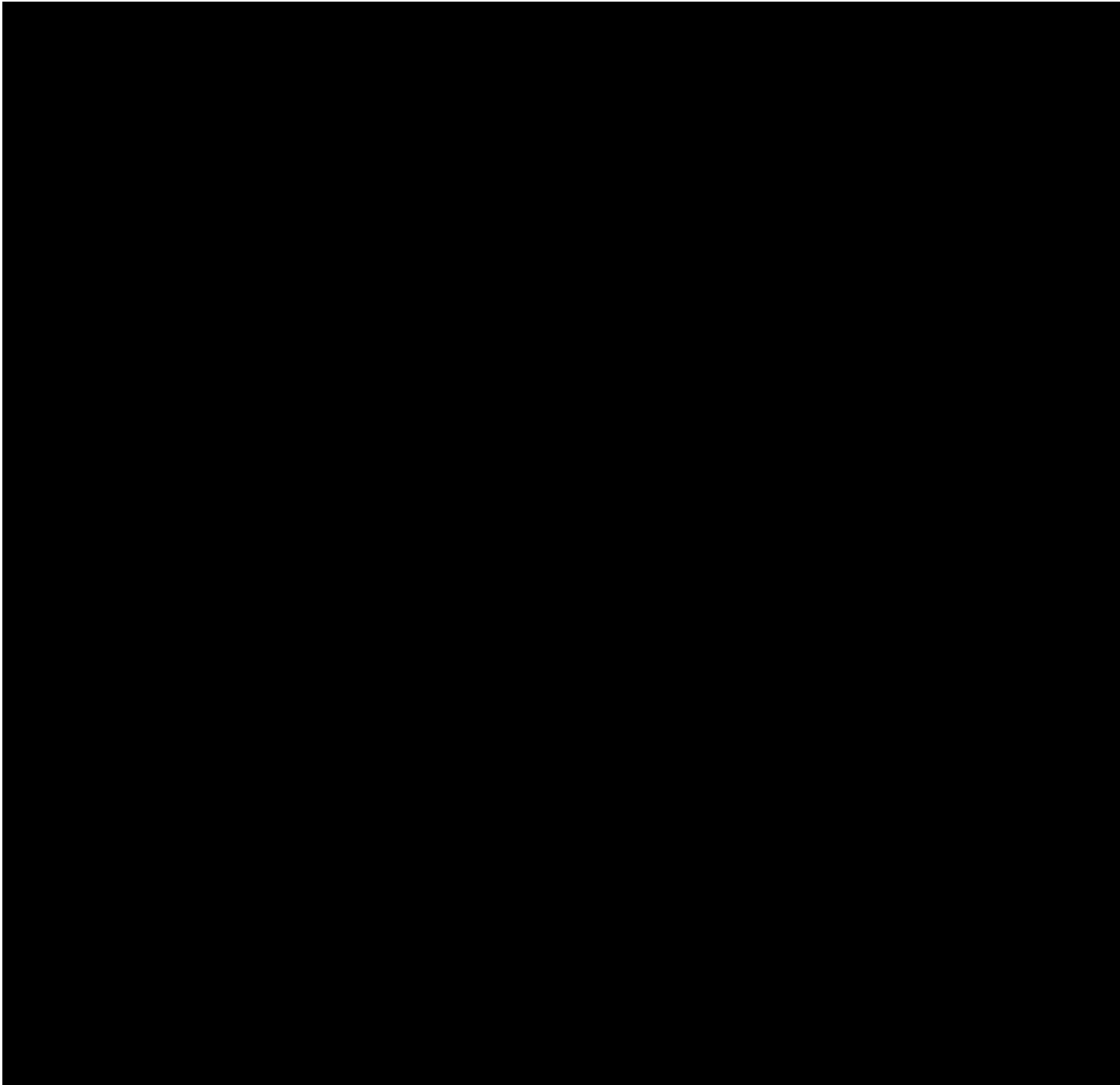
The impact of Rural Connect on **student achievement (RQ1a)** will be assessed using a

Comparative Interrupted Time Series (CITS) design. This design uses multiple observations to

compare baseline and intervention trends across treatment and comparison groups. CITS designs

are among the strongest QEDs (Shadish, Cook, & Campbell, 2002), providing internally valid

estimates of intervention effects (St. Clair, Hallberg, & Cook, 2016). When well-implemented, they can meet WWC standards with reservations (USDOE, 2017). Student achievement data from state tests will be available for 4 years prior to the start of treatment in each cohort; however, because these data will be collected at the aggregate (teacher) level, multiple baseline data points will be unavailable for some participants (e.g., new teachers, those who have changed grade levels/subjects). If CITS analyses are determined to have insufficient power after exclusion of these teachers, a Difference-in-Differences (DD) design, described below, will be used.

The impact of Rural Connect on **student engagement (RQ1b) and teacher outcomes (RQ2)** will be assessed using DD design. DD allows for examination of changes in treatment and BAUC groups before and after implementation of the intervention. Like CITS, DD designs yield valid causal inferences about intervention effectiveness and can meet WWC standards when they include a matched comparison group (Somers, Zhu, Jacob, & Bloom, 2012).

Mediation analyses (RQ3) will be conducted to determine the proportion of variance in student achievement accounted for by (a) student perceptions and (b) teacher outcomes. **Moderation effects (RQ4)** will be conducted to test the interaction effects of (a) teacher characteristics and (b) implementation factors in predicting student outcomes.

Impacts will be estimated using a two-level Hierarchical Linear Model (HLM) to account for students nested within teachers (Raudenbush & Bryk, 2002). Following WWC standards, the analytic sample will include participants from treatment and comparison groups with both pretest and outcome scores. Analyses will determine whether and the degree to which group differences are statistically significant (i.e., by calculating effect sizes, *Hedges' g*) using appropriate multiple comparison corrections (Benjamini & Hochberg, 1995).

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