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Absolute Priority 1—Demonstrates a Rationale

The Appalachian Empowering Teacher Learning in Western NC (ETL) project, grounded in research-based evidence, will fill a gap in the teacher excellence literature. Specifically, it is focused on professional learning through an ETL program which encompasses four areas: 1) teacher-identified needs assessment, 2) learning contract, 3) micro-credentials, and 4) stipends. This study ***demonstrates a rationale*** through two ***key project components*** included in the project's logic model which are informed by research findings that suggest these project components are likely to improve relevant outcomes. These key components, which are foundational to the ETL program, are sourced from the What Works Clearinghouse (WWC) reviewed publications, demonstrate evidence, and indicate positive results. They include **intensive p rofessional development (PD)** (Meyers et al., 2016) and a **summer training program** (Henry et al., 2014). As illustrated in the logic model in Table 1, the theory of action includes inputs, activities, outputs, and outcomes which will serve as a living framework to measure program implementation and effectiveness and includes three studies to guide the project: Study 1—Strategy; Study 2—Inspect; and Study 3—Impact, which are outlined in the *Quality of Evaluation* section. The components (intensive PD and summer training) will be implemented and evaluated, replicating areas of the WWC studies where applicable, as well as add to the body of research for teacher professional learning. In order to ***demonstrate a r ationale***, the ETL project will implement the two ***project component*s** (**intensive PD** and a **summer training program)** as part of the ETL intervention to produce ***relevant o utcomes***. The relevant, measurable outcomes of the ETL intervention are to increase teacher professional learning, teacher self-efficacy, student social-emotional learning (SEL), and student academic growth.

Table 1. Empowering Teacher Learning (ETL) Logic Model

Data Sources: NCES, NCDPI, LEAs

Inputs

Teachers

Teacher Characteristics
- Demographic data
  - # of teachers participating
  - Teaching in rural or high needs locations
  - Grade level
  - Subject Area
  - Years of experience
  - Certification status or credentials
  - Demographic characteristics
- Professional learning reflections
  - Relevance
  - Past experiences
  - Motivations

Students

Student Characteristics
- Demographic Data
  - # of students served
  - Economically disadvantaged
  - Grade
  - Gender
  - Race/ethnicity
- Academic progress: EOC/EOG
- SEL

LEAs

LEA Characteristics
- # of participating LEA's
- LEA academic achievement/report card data
- LEA free and reduced lunch rate
- Rurality of schools

Activities

Teacher Activities (Treatment)
- Digital Promise training (will include a **Summer Training Program***)
- ETL: Teacher-identified needs assessment
- ETL: Learning contract
- ETL: Complete nine MCs (**Intensive PD***)
- ETL: Stipends
- Pre- and post-TDPL
- Annual questionnaire
- TSES

Teacher Activities (Control)
- A comparison group for the counterfactual will operate in a business as usual manner

Student Activities
- Annual questionnaire
- SSIS SEL

LEA Activities
- Assist in teacher recruitment
- Participate in MCs
  - Provide permission for 100% PD replacement
- Collaborate in developing additional MCs for LEA use
- Provide data

Outputs
- Effective teacher training
- Preparedness of intervention teachers
- Understanding of professional learning needs of participating LEAs
- Teacher participation in online community
- Understanding of baseline data
- Understanding of all components of the ETL study from schools, teachers, and students

Outcomes

Short-Term

Study 1—Strategy

Teachers
- Increased engagement in professional learning
- Increased self-efficacy in professional learning
- Increased self-efficacy in classroom implementation

Students
- Increased classroom engagement

Schools
- Increased understanding of professional learning MCs
- Appropriate implementation of teacher training

Mid-Term

Study 2—Inspect

Teachers
- Increased engagement in professional learning
- Increased self-efficacy in professional learning
- Increased self-efficacy in classroom implementation

Students
- Increased classroom engagement
- Increased SEL

Schools
- Increased buy-in and use of professional learning

Evidence for a Summer Training Program and Intensive PD comes from Henry, et al., (2014). The effects of teacher entry portals on student achievement. Journal of Teacher Education, 65(1), 7–23 and Meyers, et al., (2016). Impact results of the eMINTS professional development validation study. Educational Evaluation & Policy Analysis, 38(3), 455–476.

Both studies are part of a WWC intervention report.

Long-Term

Study 3—Impact

Teachers
- Increased knowledge and implementation of instructional practices
- Increased self-efficacy in classroom implementation

Students
- Increased SEL
- Increased academic outcomes: EOC/EOG

Schools
- Buy-in of professional learning

ETL Project
- Create sustainable teacher-directed professional learning models
- Understand the impact of MCs on teachers and students
- Publish a guidebook for replication
- Work with NCDPI on policy

Note: NCES = National Center for Education Statistics; NCDPI = North Carolina Department of Public Instruction; LEA = Local Education Agency; EOG = End of Grade; EOC = End of Course; MC = Micro-Credential; PD = Professional Development; ETL = Empowering Teacher Learning

Absolute Priority 3—Teacher-Directed Professional Learning

This proposal addresses Absolute Priority 3: Teacher-Directed Professional Learning. With the country facing new education challenges daily as a result of the COVID-19 pandemic, now is not the time to simply replicate in-class teaching in an online environment. This is the time for innovative approaches to teaching and learning that are face-to-face and online, teacher-directed and collaborative, personalized yet adhering to agreed-upon standards, and connected to social-emotional and academic learning in measurable ways (Ferdig et al., 2020). Designed by regional and state educators, national researchers, and a team with professional learning expertise at Appalachian State University (Appalachian), the Empowering Teacher Learning (ETL) project applies innovative teaching and learning strategies, grounded in research evidence, to teacher professional learning through micro-credentialing. ETL will show teachers how to embrace teacher-directed professional learning (TDPL) and provide a stipend-based system to enhance autonomy and flexibility.

Competitive Preference Priority 2—State Education Agency Partnership.

ETL is partnering with the North Carolina Department of Public Instruction (NCDPI), the official designated state education agency (SEA), through the Department of Digital Learning (see the letter of support from the State Director in Appendix C). ETL continues the work started by a NCDPI work group in 2016 to, in the words of the State Director:

> develop a framework for transitioning from CEUs (continuing education units) to a competency-based metric where time is no longer the currency; and to develop an implementation guide and supporting resources to facilitate the transition to competency-based professional development leveraging micro-credentials.

The Director goes on to acknowledge the value of ETL and points out the ways ETL can influence changes in state policy regarding teacher professional development (PD).

> The results from this study, along with knowledge gained through the implementation process, have strong potential to contribute to and inform the field of education in a

multitude of ways. This project will be the first in North Carolina to rigorously evaluate the use of micro-credentials to replace traditional teacher professional development, which NCDPI is poised and ready to support.

NCDPI will provide expertise on digital learning, input and alignment regarding state policies, data sharing and, if the project is successful, help with extending ETL to other local education agencies (LEAs).

Introduction: Mezirow (1997) defined transformative learning as beginning with a dramatic disorienting dilemma that challenges one's frame of reference. Resolving the dilemma requires the ability to self-critique one's thinking and test out the ideas of others, thus revising one's frame of reference. For educators, COVID-19 is a disorienting dilemma, challenging accepted ways of thinking about schooling, and requiring innovative solutions. **Empowering Teacher Learning (ETL) in Western North Carolina** is a professional learning system that uses micro-credentials and stipends to promote teacher-directed learning in a time when traditional professional development may not be practical, while simultaneously charting a new path forward beyond the pandemic by increasing access to differentiated PD opportunities for rural area teachers. ETL provides great flexibility and autonomy with enough structure to internally motivate teachers to be accountable for their learning and aligns well with the standards of professional learning: learning communities, resources, learning designs, outcomes, leadership, data, and implementation (Pink, 2009; Learning Forward, 2020). The goals of ETL are:

- **Goal 1:** Facilitate an empowering and transformative community of teacher-directed professional learners in 20 western NC middle schools serving 6-8th grade **high-need** students who are educated in rural and economically disadvantaged schools.
- **Goal 2.** Implement a multi-year teacher stipend program to support teacher licensure renewal that is flexible, personalized, simple, reduces administrative burden, and encourages professional learning that supports high-need students.
- **Goal 3.** Contribute to the body of education research by exploring the impact of a multi-year teacher-directed professional learning program on teachers and students.

Table 2 shows the project phases across four academic years. All treatment group teachers (n=250) will participate in the intervention in phases 2 through 4, which aligns with the implementation and impact evaluation. Phase 5 of the timeline will expand the intervention to the control group (n=250), resulting in a total of 500 teachers served across western NC. Phase 1 includes progressive project development for items such as the year-end questionnaire that will not be needed until spring of 2022.

Table 2. ETL Phased Timeline

Milestone Phases		Project Year 1	Project Year 2	Project Year 3	Project Year 4	Project Year 5
		Jan – Dec 2021	Jan – Dec 2022	Jan – Dec 2023	Jan – Dec 2024	Jan – Dec 2025
Phase 1	Project Launch					
Phase 2	ETL Treatment Cycle 1 Study 1 - Strategy	**AY1 2021-2022**				
Phase 3	ETL Treatment Cycle 2 Study 2 - Inspect		**AY2 2022-2023**			
Phase 4	ETL Treatment Cycle 3 Study 3 - Impact			**AY3 2023-2024**		
Phase 5	Control Group Receives ETL				**AY4 2024-2025**	
Phase 6	Final Data Analyses/Reporting					

AY = Academic Year

In each treatment cycle teachers in the ETL Program schools will 1) attend a summer training program to identify their learning needs and write a learning contract 2) earn three micro-credentials identified in their learning contracts through an intensive TDPL process and implement new teaching practices, and 3) participate in evaluation and research activities. Teachers will receive stipends in each cycle for writing and completing learning contracts, and for earning three micro-credential badges.

ETL will work with Digital Promise as the provider of the micro-credentialing platform. Digital Promise is an independent, non-partisan, non-profit organization authorized by Congress in 2008 through the Higher Education Opportunity Act to accelerate innovation in education to improve opportunities to learn (Commission on Education and Labor, 2008). Digital Promise has the most comprehensive micro-credential library of its kind, and the largest public platform serving the education field. Platform users reflect 2,846 schools across 1,816 districts in 48 states

and in March 2020 the platform reported 64,000 unique visitors. Digital Promise has partnered with nearly 60 micro-credential issuing organizations to create more than 530 educator micro-credentials (see Appendix I for a complete library of micro-credentials offered).

The ETL project team will provide support in four key areas across the six phases of the project: 1) **Building** - organizing the project, refining the framework, soliciting teacher input, and hiring and training support staff; 2) **Implementing** - planning with district administrators, preparing teachers to engage in TDPL, coaching teacher implementation, and facilitating a transformative community of learners; 3) **Administering** – executing a simple-to-use teacher stipend system which requires minimal teacher paperwork; and 4) **Evaluating** - implementing a rigorous research and evaluation plan that ensures fidelity and analyzes results of the project. ETL will implement continuous improvement using the Plan-Do-Study-Act model throughout the project (Deming, 1993).

A. Quality of Project Design

(1) The extent to which professional learning funded through the stipend will replace existing mandatory professional development for participating teachers at the following level: (vi) Replacing 100 percent of required professional learning.

The Empowering Teacher Learning (ETL) in Western NC project **replaces 100% of existing mandatory state- and district-provided teacher recertification professional development** (PD) time with a stipend-based, TDPL system that supports teacher identification and completion of need-appropriate, high-quality PD modules sourced from vetted providers. Instead of measuring PD by the number of course hours, ETL focuses on the competency demonstrated by teachers as they earn micro-credentials. The North Carolina Department of Public Instruction (NCDPI), the state education agency (SEA) requires educators to renew their professional license every five years (NCDPI, 2020). Renewal requires eight continuing education units (CEUs) over the course of five years. Each CEU is equal to 10 clock hours of

PD; therefore, a teacher must attend 80 clock hours of approved PD (or an average of 16 hours per year). To earn CEUs, a teacher may enroll in university courses, local courses certified by the administrative unit, or classes and workshops approved and documented by a local education agency (LEA) (NCDPI, 2020). Over the course of three years, ETL will replace all of the clock hours of recertification PD with a system that allows teachers to earn micro-credentials by demonstrating competency (replacing approximately 48 hours of CEU time). Teachers are provided stipends to cover the cost of materials connected to their learning needs, as incentive for participation in the study, and as compensation for the additional responsibilities related to data collection. LEA leaders have endorsed the project (see Appendix C), and as a certifying authority, the LEAs will certify the micro-credentials as CEUs to complete the requirements for recertification. The SEA is partnering with Appalachian and has agreed to the **replacement of 100% of required professional learning** through the ETL project with LEA **policies that allow stipends** for teachers.

Applicant Requirement: (d)(1)(i) and (d)(2): In partnership with NCDPI, ETL will work with LEAs to modify their policies as appropriate to qualify micro-credentials for CEUs and acknowledge the payment of stipends by the project. To achieve this, the ETL team will work with the LEAs in the planning phase to 1) identify high-priority district goals for student outcomes and key professional learning themes, 2) develop equivalency systems to certify micro-credentials as CEUs, 3) designate traditional PD days from which ETL teachers will be released, and 4) apply district PD resources (e.g., supplies, equipment, sub days) to TDPL activities. Teachers will request release from PD and substitute days in their learning contracts to be approved by ETL and school leaders. Following the planning phase, the ETL and LEA leadership will meet regularly to review the project status, share lessons learned, and act on

ongoing needs and concerns. Appropriate adjustments to the project will be made at the conclusion of each school year to ensure continuous quality improvement. ETL will allow teachers to replace 100% of their annual traditional recertification PD with a stipend-based TDPL system using micro-credentials.

(2) The adequacy of plans to ensure that stipends are appropriately used for high-quality professional learning.

The ETL team will ensure that stipends **support high-quality professional learning** by: 1) working with teachers and administrators to guarantee project implementation aligns with the priorities of each school; 2) ensuring that the micro-credentials platform provides security, ease of use, high quality content, and rigor of assessment; 3) working with teachers to create learning contracts that describe how their teacher-directed learning will align with their teaching and learning goals; 4) collecting feedback, analyzing data, and conducting a rigorous evaluation to promote continuous improvement throughout the project; and 5) administering the project according to grant and federal specifications. The learning contract development process ensures teachers' plans for professional learning are vetted for quality prior to approval.

Application Requirement (c)(3): The high quality, number of issuers, and anonymity of the Digital Promise micro-credentials platform helps ensure against fraud, waste, and conflict of interest. The limit on the number of micro-credentials (3) for which teachers are awarded a stipend in an academic year and the fact that stipend payments for earning micro-credentials are triggered by submitting an earned badge from an anonymous assessor ensures against abuse. The stipends will be issued in gradual payments so that risk of fraud is controlled—stipend payments are only issued for the activities teachers have completed. The ETL administrative team is experienced in administering large grants under federal guidelines and will accurately account for stipends and other grant funds, assisted by Special Funds Accounting at Appalachian.

University policy requires the ETL team to complete a yearly conflict of interest form. These, along with any ongoing concerns about conflict of interest will be managed with assistance from the University's Sponsored Programs office.

Application Requirement (f)(2): The learning contract development process offers teachers flexibility in the way they select micro-credentials from nearly 60 issuing organizations. The Digital Promise platform offers an expansive variety of options to teachers; however, other micro-credential providers do exist. When a teacher finds a micro-credential more aligned with their needs from another provider, they can simply indicate this plan in their learning contracts. These are then reviewed and approved through the same process as all other learning contracts. The ETL team review will ensure that the issuing organization's micro-credential process reasonably satisfies the requirements of ETL prior to approval.

(3) The extent to which the proposed project will offer teachers flexibility and autonomy regarding the extent of the choice teachers have in selecting their professional learning.

The ETL project team will work with Digital Promise to develop introductory TDPL micro-credentials that offer **flexibility and autonomy**, while getting the required CEUs in preparation for the development of their learning contracts. During an **ETL Summer Convening**, teachers earn this first micro-credential and apply their knowledge to writing a learning contract, which will help ensure they take advantage of the flexibility and autonomy afforded by ETL to choose subject matter that appropriately aligns to school and student needs. In pursuit of micro-credentials offered by the Digital Promise platform, teachers select a wide variety of learning resources, such as webinars, podcasts, books, articles, instructional coaches, lesson plans, interviews, and observations. Teachers will control the contents of their learning contracts, the timing of when they work, the evidence used to demonstrate their competency,

when and how they introduce additional learning resources, and how they implement new learning with their students—all of which provide significant flexibility and autonomy.

Application Requirement (d)(3): In addition to the over 500 micro-credentials in the Digital Promise system (each with suggested resources), ETL will establish an **online professional learning community** (PLC), located on a Learning Management System (LMS) to share learning opportunities among and for teachers.

Application Requirement (d)(4): Teachers will use available school data as they identify their learning needs and the needs of high-need students. ETL will work with LEAs to develop customized data mining strategies and methods for vetting high quality resources in advance of the Summer Convenings. As new learning resources are identified throughout the year, teachers will have the option to modify their learning contracts with a request to the ETL team and will then be guided through a simple process of describing the learning need and how the resources meet the need. The process of assessing learning needs, writing a learning contract, identifying and sharing resources, and implementing new competencies to support student success will help teachers earn micro-credentials and will enable shifts in teaching and learning practice.

(4) The likelihood that the procedures and resources for teachers result in a simple process to select or request professional learning based on their professional learning needs and those identified needs of high-need students.

Once teachers identify their learning needs and those of high-need students, they write a learning contract (see Appendix I for a template and an example). Using the template, teachers identify micro-credentials and supporting resources needed to address their learning needs, estimate a timeframe for completion, and over time, determine the competency requirements of the micro-credential and select the artifacts that will demonstrate competency. ETL will work with teachers to write learning contracts that address teacher-identified learning needs, approve

the learning contract, and prepare teachers to successfully complete micro-credentials. To finish the cycle, teachers implement their learning contracts and submit evidence to the Digital Promise micro-credential platform.

Application Requirement (b) (2)*:* Based on a questionnaire ETL distributed to a sample of 125 prospective project teachers in August 2020 and the results of the 2018 North Carolina Teacher Working Conditions Survey (New Teacher Center, 2020), the estimated level of teacher participation is 80% or more of 750 eligible teachers from 20 schools with an estimated number at 500 teachers. The outreach strategy to communicate the stipend opportunity will take place at the school level, with support and commitment from principals to allow their school to participate. Eligible teachers will receive ETL materials such as a slide deck, flyers, and sample emails that can be used by school administrators, live video meetings with teachers and administrators, recorded webinars, and an ETL website that includes a frequently asked questions section that can grow as new commonly asked questions emerge.

(5) The extent to which the goals, objectives, and outcomes to be achieved by the proposed project are clearly specified and measurable.

The purpose of the ETL project is to implement and study an innovative TDPL program with **goals, objectives**, and **project outcomes** aligned to the logic model, project design, and evaluation plan, which includes research outcomes. The **long-term goal is to re-envision how teachers receive professional development** with the support of **rigorous research** that assesses impact on **measurable outcomes** and subsequently guides future policy development and scaling efforts. The target outcomes are grounded in Guskey's (2000) levels of professional development evaluation: 1) participant reactions, 2) participant learning, 3) organization support and change, 4) participant use of new knowledge and skills, and 5) student learning outcomes. In addition to the project-specific indicators listed in Table 3, the ETL project also will collect and

report on the annual and cumulative Government Performance and Results Act (GPRA) indicators for the annual and final performance reports. The process of developing this framework of goals, objectives, and project outcomes, and deploying new instruments is introducing much needed innovation in the community, thus due to the novel nature of the project in the region baseline data will be obtained, and benchmarks will be set during Phase 1.

Table 3. Goals, Objectives, and Outcomes for the ETL Project

ETL Goals, Objectives, and Outcomes This table outlines the goals, objectives, and project outcomes; research outcomes are detailed in the *Quality of Project Evaluation* section."	
Objectives	**Project Outcomes**
Goal 1: Facilitate an empowering and transformative community of teacher-directed professional learners in 20 western NC middle schools serving 6-8th grade **high-need** students who are educated in rural and economically disadvantaged schools.	
1A: Increase opportunities for teachers to engage in transformative TDPL. 1B: Increase ownership and use of professional learning at the school level.	1A:1: Increase the percentage of teachers reporting an increase in relevance of learning experiences in TDPL over traditional professional development. 1A:2: Increase the percentage of teachers reporting that ETL changed their instructional practices. 1A:3: Increase the percentage of teachers engaging in the ETL online PLC. 1B:1: Increase the percentage of ETL administrators who report buy-in of TDPL.
Goal 2. Implement a multi-year teacher stipend program to support teacher licensure renewal that is flexible, personalized, simple, reduces administrative burden, and encourages professional learning that supports high-need students.	
2A: Create a comprehensive stipend system that is simple for teachers to participate in with minimal burden. 2B: Increase opportunities for teachers to develop and demonstrate new professional competencies. 2C: Create a teacher stipend program to support teacher licensure renewal.	2A:1: Increase the percentage of teachers reporting that the process for requesting a stipend required minimal administrative burden. 2A:2: Increase the percentage of teachers reporting they are satisfied with the ETL stipend process. 2B:1: Increase the percentage of teachers who pass a micro-credential assessment upon first submission. 2C: Increase the percentage of teachers reporting that ETL improved access to professional learning opportunities that count toward licensure renewal.
Goal 3. Contribute to the body of education research by exploring the impact of a multi-year TDPL program on teachers and students.	
3A: Provide opportunities for teachers to provide supportive and engaging classroom experiences for students.	3A:1: Increase the percentage of teachers demonstrating responsiveness to academic and social/emotional needs of individual students as measured by the Classroom Assessment Scoring System (CLASS).

3B: Create an empowering professional learning experience for teachers. 3C: Improve student social-emotional skills. 3D: Increase student academic achievement scores.	3A:2: Increase the percentage of teachers who engage students in activities so that learning opportunities are maximized as measured by the CLASS. 3B:1: Increase teacher self-efficacy in student engagement as measured by the Teacher Self-Efficacy Scale (TSES). 3B:2: Increase teacher self-efficacy in instructional strategies as measured by the TSES. 3C:1: Increase the percentage of students with an SEL composite score of >100 as measured by the Social Skills Improvement System, Social Emotional Edition (SSIS SEL). 3C:2: Increase the percentage of students with an SEL Self-Management score of >100 as measured by the SSIS SEL. 3D:1: Increase the percentage of high-need students who score at or above grade level in reading as measured by the 8th grade end-of-grade (EOG) assessment. 3D:2: Increase the percentage of high-need students who score at or above grade level in mathematics as measured by the 8th grade EOG or end-of-course (EOC) assessment.

B. Adequacy of Resources and Quality of the Management Plan

(1) The sufficiency of the stipend amount to enable professional learning funded through the stipend to replace a significant portion of existing mandatory professional development for participating teachers.

Annually teachers will complete a classroom needs assessment and learning contract plus three micro-credentials to achieve the equivalency that ETL has established to meet 100% of the annual state requirement for recertification hours.

Applicant Requirement (c)(1): The total **stipend amount** that a teacher can receive is [redacted] **annually** (shown in Table 4), which is split up into **five equal payments of** [redacted], and is aligned with an average stipend amount identified through a teacher survey in western NC LEAs. The approved learning contract will initiate the first stipend payment of [redacted] and provides teachers with the necessary funds to cover any ancillary implementation costs accrued through their participation in the first micro-credential. Because micro-credentials offer flexibility in the way teachers choose to demonstrate competency, a variety of costs are expected, which they are responsible for covering using their stipend. Examples of such costs include materials or supplies

to implement a new lesson plan, transportation to attend a workshop, purchase of a book or journal, micro-credential assessment costs, and other miscellaneous expenses they deem necessary to demonstrate competency. For each micro-credential successfully completed, the teacher is awarded a digital badge, which, upon submission to the ETL team, will result in an additional [redacted] stipend. This [redacted] then covers any ancillary expenses incurred in pursuit of the next digital badge. Successful completion of a micro-credential includes 1) collecting evidence of their demonstrated competency according to the rubric outlined in the micro-credential, 2) submitting the evidence to the third-party assessor for review, 3) awarding of the digital badge. Not all participants will pass their micro-credential assessment upon the first submission; therefore, additional costs may be incurred for a second submission to the assessor. If a teacher has needs that exceed their stipend amount, or if an unplanned opportunity arises that supports a teacher's learning contract, a modification to the learning contract can be submitted for project director approval of additional funds on a case-by-case basis. Teachers will receive coaching support to submit modifications as necessary. Once all components of the learning contract are completed, assessed, and passed, a final stipend of [redacted] will be awarded. Teachers in the control group will receive an annual stipend of [redacted] for supporting the data collection work and completing all annual instruments included in the evaluation plan.

Table 4. Annual Stipend Payments for Treatment Teachers

[redacted]				
Learning Contract Written and Approved	1st Digital Badge	2nd Digital Badge	3rd Digital Badge	Learning Contract Completed

Applicant Requirement (c)(2): The estimated stipend amount per teacher is **sufficient** to ensure access to professional learning activities as demonstrated by the gradual payment process upon completion of learning contract activities. This system ensures that teachers do not have to

front any costs, are provided funding for supplemental expenses, and risk of fraud is controlled as stipend payments are only issued for completed activities. The ETL system improves upon the quality of traditional PD in that it is differentiated to each teachers' classroom needs, requires teachers to demonstrate competency through knowledge gained, and ensures implementation of practices learned through micro-credentials.

(2) The extent to which the costs are reasonable in relation to the objectives, design, and potential significance of the proposed project.

The extent to which the costs are **reasonable** is determined by examining the actual costs per student, as opposed to the entire grant budget. The teacher stipend costs are of greatest significance and represent an estimated cost of [redacted] per student per year. When additional costs such as personnel and grant administration expenses are factored in, the approximate cost of [redacted] per student is still reasonable. When compared to traditional PD costs, which can average anywhere between $2,000-$5,000 per day plus substitute costs and travel costs for an external facilitator, ETL costs are comparable or better, while offering teachers more flexibility and greater relevance while reducing time out of class. This project impacts teacher outcomes, student outcomes, and policy regarding how professional learning is achieved, resulting in long-term structural improvements in Appalachia, and through our partnership with the SEA, broader implications for the state. In the current remote learning landscape and thereafter, especially in rural, high-need schools, this new way of TDPL brings an enhanced level of significance and has the opportunity to accelerate access and innovation in schools when it is needed most.

(3) The extent to which the proposed payment structure will enable teachers to have an opportunity to apply for and use the stipend with minimal burden.

The ETL team will manage the administrative burden for recording badges, tracking teacher micro-credentials, and generating stipends, reducing the process to only one step for the teacher (submit the digital badge). The development of the learning contract serves as the

teacher's application to receive and use the stipend, and triggers their first [redacted] stipend payment. To ensure **minimal burden**, teachers will be assigned an **ETL Navigator** who will be responsible for helping the teacher manage the steps of the ETL cycle, serving as the through-line support from start to finish, beginning with the development, review, and approval of the learning contract. The process for paying teachers will be simple and require minimal burden on teachers. Teachers start by filling out an electronic payment authorization form at the launch of the program. After that point, if a teacher completes any stipend-triggering step in the process, [redacted] will be direct-deposited within 30 days into the teacher's bank account. Teachers are required to provide evidence of completion to their assigned Navigator by submitting their digital badge via the LMS. The Navigator will record the badge in the database, submit it to the ETL Stipend Coordinator (**SC**), and the payment will be generated. Teachers who prefer not to be paid with direct deposit will have the option to be mailed a check. Upon completion of three micro-credentials, as noted in the data tracking system, a final [redacted] payment will be issued directly to the teacher.

Applicant Requirement (f)(1): For teachers interested in replacing Digital Promise micro-credentials with another provider, the Navigator will review the learning contract to ensure that the issuing organization's micro-credential process reasonably satisfies the requirements of ETL to ensure high-quality micro-credentials. To determine this, the Navigator will be responsible for reviewing if the micro-credential 1) is competency-based, 2) has an established rubric, and 3) includes a third-party assessment process. To summarize the stipend payment system, teachers will show the evidence of their work to their assigned Navigator, and the payment will be generated and sent straight to them or to their bank account, thus creating a system with minimal burden. Teachers will not have to fill out expense forms.

(4) The qualifications, including relevant training and experience, of key project personnel.

The key personnel for the project, except for the external evaluation team, are based at Appalachian and have prior experience in successfully administering large federal and private education grants (over $35 million) with strong research infrastructure and extensive experience working with K-12 schools as either teachers, administrators, or researchers. The principal investigator (**PI**) and project director (**PRDR**) have over 40 years of experience in designing, developing, and facilitating professional learning for educators, including coaching in teacher-directed learning environments as illustrated by the key personnel experience in Table 5.

Table 5. Key Personnel

Dr. James Beeler, Principal Investigator (**PI**), .20 FTE
Dr. Beeler has 30 years of experience in K-12 and higher education. At Appalachian, Dr. Beeler directs College Access Partnerships, consisting of six large sponsored projects, each operating in multiple school districts in western NC. Dr. Beeler has worked as chief learning officer at a national non-profit with education leaders, researchers, and technology developers to close the digital learning gap. He was a key member of the team that developed a teacher micro-credentialing program and directed the Verizon Innovative Learning project ($50 million) that provided technology to every child and teacher in low-income middle schools and professional learning opportunities to school educators. Previously, as a senior manager at Apple, Inc., he consulted with school districts and universities across the country on using technology to drive innovation and continuous improvement.
Doug Thompson, Project Director (**PRDR**), 1.0 FTE
Doug Thompson has over a decade of experience in teacher PD and has risen through the ranks as teacher, technology facilitator, PD facilitator, and federal grant administrator. As a PD facilitator and manager, Doug supported 15,000 educators from over 200 districts throughout the Carolinas. He has worked on PD projects including the design and execution of a teacher education facility and team that generated up to $500,000 a year providing coaching, training, and curriculum services. Under his management, the organization secured an $8 million donation. Doug has co-written grants ranging from $10 thousand to $1 million and now assists in the management of two federal education grants (sun setting in 2021) totaling $29 million where he supports over 25 high schools in western North Carolina with coaching, consultation, and professional learning experiences.
M. Corinne Smith, Director of Operations (**DO**), .15 FTE
Corinne Smith has been responsible for the launch and implementation of four large sponsored projects at Appalachian. She brings experience managing annual budgets totaling nearly $5 million while overseeing the compliance and research operations of multiple federal and non-federal programs. Corinne has supported the process of five internal audits, all successfully conducted with no findings and has experience negotiating and executing an average of 50 sub-award and fee-for-service contracts annually.
Andrea Reubens, Assistant Director Research & Evaluation (**ADRE**), 1.0 FTE
Andrea Reubens brings over 20 years of research and evaluation expertise from top research organizations. Andrea worked as a research education analyst for RTI International for 11 years and a research associate with UNC-Chapel Hill for eight years. In South Florida she worked in research and evaluation for a parent-child mental health center where she collaborated with funders on the development, evaluation, and reporting on programs. Andrea brings education experience in assessment development and implementation, quantitative and qualitative research methods, survey methodology, and cognitive and strategy development

with an emphasis on early mathematics. As the assistant director of research and evaluation for two large federal grants, she leads the data collection and reporting for 11 districts in western North Carolina, representing over 15,000 students.
National Council for Community & Education Partnerships (NCCEP), External Evaluator (**EE**)
Dr. Chrissy Tillery will lead NCCEP's third-party, external evaluation team. Dr. Tillery brings over 25 years of research and evaluation leadership on U.S. Department of Education and private foundation grants, with the last eight years at NCCEP, the preceding seven years at the University of NC System, and the prior 11 years conducting university research in disadvantaged public schools. The EE team will also include Dr. John Barker (statistical and methodological advisor), Dr. Katie Hill (professional learning content expert and policy analyst), and Thomas Cech, MBA (data scientist and What Works Clearinghouse expert). The EE team brings the following: expertise working and conducting research in K-12 schools, professional development training, quantitative statistical analyses, experimental and quasi-experimental research designs, implementation and impact evaluations, and studies focused on building capacity and advancing student success, and education equity in low-income, high-need school districts.

(5) The adequacy of the management plan to achieve the objectives of the proposed project on time and within budget, including clearly defined responsibilities, timelines, and milestones for accomplishing project tasks.

As a state government agency of North Carolina, Appalachian works with all 26 federal grant-making agencies, and their subsidiaries. Appalachian has received over 150 awards from external sponsors each year for the past two years with a mix of single and multi-year projects. The university has an approved financial system that is capable of identifying itemized expenditures, with access to internal monitoring controls. The ETL project team at Appalachian has experience administering grant-funded education research of similar size in both federal and private grant projects that must meet strict requirements for compliance and documentation. The team has established relationships with 20 LEAs across western North Carolina, which will be eligible to participate in this study. Though the grant will operate in the same regional zone as previous federal projects, the grants would not overlap or supplant, and are not similar in scope. The team works through the University Sponsored Programs office on pre- and post-award communication and with Program Officers at the U.S. Department of Education. Appalachian's Special Funds Accounting office acts as an ongoing auditor to ensure compliance and drives continuous improvement in processes to reduce financial risks. Both units provide accountability for university resources and appropriate dissemination of financial information to maximize the

use of all resources in compliance with federal and state regulation, Board of Governors and university policies, and procedures and requirements of external funding sources. Existing sponsored projects undergo regular internal audits to ensure adherence to such policies and regulations. The ETL management team has undergone more than five internal audits, all of which concluded with no findings. **The five phases of project management**, originally developed by the Project Management Institute, will promote efficient communication, manage risk, and ensure goals are met **on time and within budget** (Pathak, R., 2020). The PI has a reporting structure with direct access to the vice chancellor level, which improves the collaboration, efficiency, and success of project activities taking place across the university.

A key part of the **management plan** includes convening the management team, which consists of the PI, PRDR, ADRE, DO, and the Assistant Director of Teacher Outreach (**ADTO**), who will meet weekly in the launch phase (Phase 1) and a minimum of bi-weekly in Phases 2 through 6. The **External Evaluator (EE)** will join the team bi-weekly in Phase 1 and monthly thereafter. The team will use Zoom video conferencing, which is provided by the institution for regular meetings (limiting the impact of COVID-19 disruptions on project activities); with in-person meetings taking place a minimum of 4-6 times per year.

A clear delineation of **roles and responsibilities** has been identified and will ensure efficiency. The **PI's** key responsibilities include general oversight of the project, partnership development with key external partners (i.e., NCDPI, LEAs, etc.), and monitoring of project objectives to ensure adequate progress. The **PRDR** provides lead content expertise and is responsible for ensuring project activities are implemented in accordance to the approved proposal, leading the development and implementation of the summer convening, and overseeing the learning contract and stipend process. To achieve this, the Project Director will supervise a

team of support personnel including the **ADTO** who will be responsible for managing direct relationships with teachers and will supervise the work of three **Navigators**. The Navigators will be assigned a caseload of teachers and are responsible for supporting teachers in their completion of learning contract activities, micro-credentials, and the stipend process. The **ADRE** is responsible for overseeing the data collection process, ensuring confidentiality of personally identifiable information, working with Appalachian's IRB to ensure all research activities are conducted in accordance with university protocols, obtaining informed consent, and tracking the sample in the internally developed, customizable, and secure database (Lyceum) which will house all project data and has been used to manage similar data sets since 2016. The **EE** team will lead the implementation and impact evaluations. Evaluation milestones are included in the Evaluation Timeline in Appendix I. The **DO** will supervise the **Assistant Director of Finance & Administration** and will oversee the financial and administrative procedures of the project, including personnel, policy development, and serving as a liaison with General Counsel. Additionally, the PI and DO participate in state-level education policy discussions to inform best practices. Other ETL support personnel include the **Stipend Coordinator**, who is responsible for processing stipend payments to teachers, and a **Research Associate** supports the data collection efforts. Classroom observers will administer CLASS observations and complete training and certification prior to data collection. (See *budget narrative* for effort percentages).

The ETL project has established a team of expert advisors with complementary experience to serve as the **ETL Advisory Board**, providing content and research expertise. They will meet a minimum of three times per year. Advisory board members and their affiliated organizations are included in Table 6.

Table 6. ETL Advisory Board

Name	Affiliated Organization
Vanessa Wrenn, Ed.D.	North Carolina Department of Public Instruction (SEA)
Deanna Townsend-Smith, Ed.D.	State Board of Education
Trip Stallings, Ph.D.	Policy Researcher and consultant for the John M. Belk Endowment,
Myra Best	DigiLearn
Rebecca Tippett, Ph.D.	Carolina Demography, Demographic & Research Consulting Services
Mary Ann Wolf, Ph.D.	Public School Forum of North Carolina, Education Research & Policy
Keana Triplett, MA, NBCT	Watauga County Schools, NC Teacher of the Year ’15-‘16
Odelia Younge	Digital Promise
Christie Norris	Carolina K-12

Table 7 highlights the **milestone** phases and ETL cycles taking place across four academic years and illustrates the detailed project activities for each phase.

Table 7. ETL Milestones for Accomplishing Tasks

<table>
<tr><th colspan="3">Phase 1 (Jan 2021-Dec 2021)</th></tr>
<tr><td colspan="3">• Hire staff to fill vacant support positions. (DO, PI, PRDR)
• Initiate IRB review. (PI, PRDR, ADRE)
• Recruit and confirm participation of schools/teachers participating in the study. (PI, PRDR, DO)
• Random assignment of schools to ETL or control group. (EE)
• Plans with school/district leadership to clarify grant objectives, define school/district areas of focus for teacher learning. (PI, PRDR, ADTO)
• Recruit/hire/train observers to administer CLASS instrument. (ADRE, RA)
• Write the TDPL micro-credential (starting point for all teachers in the intervention). (PRDR, DP)
• Train ETLNs on developing learning contracts, coaching teachers in ETL. (PRDR, ADTO, DO)
• Work with ETLNs to build the online community in LMS. (ADTO)
• Develop the TDPL questionnaire. (ADRE, PRDR)
• Develop procedures for a simple, compliant teacher stipend payment process. (DO, ADFA, SC)
• Development meetings with SEA. (PI, PRDR, DO, ADTO)
• Administer SSIS-SEL pre-survey. (ADRE, RA)</td></tr>
<tr><th>Phase 2 (Jul 2021-Jun 2022)
Study 1 – Strategy (EE)</th><th>Phase 3 (Jul 2022-Jun 2023)
Study 2 – Inspect (EE)</th><th>Phase 4 (Jul 2023-Jun 2024)
Study 3 – Impact (EE)</th></tr>
<tr><td colspan="3">• Teachers complete annual pre/post TDPL questionnaire and TSES. (ADRE, RA)
• Teachers complete TDPL micro-credential. (ETLN)
• Teachers attend 2-day summer convening on micro-credentials & TDPL. (PI, PRDR)
• ETLNs work with teachers to develop their learning contracts. (ADTO, ETLNs)
• ETLNs use the online community (LMS) to provide ongoing feedback and support to teachers in their work on their learning contracts.
• Teachers select, collect, submit, and share three micro-credentials per year. (ADTO, ETLNs, RA)
• Collect digital badges from control teachers. (ETLNs, RA)
• Issue stipend payments earned by ETL teachers. (SC)
• Students complete annual student questionnaire. (ADRE, RA)
• Administer SSIS SEL annually. (ADRE, RA)
• CLASS observers complete classroom observations in all ETL and control classrooms annually.
• Ongoing data collection on micro-credential engagement, submission, and completion through the Digital Promise site. This data will inform ETLNs and teachers and allow for adjustments to be made. (ADTO, ADRE, ETLNs, PRDR, PD)</td></tr>
</table>

• Collect student demographic data monthly. (RA, ADRE) • Collect student academic achievement data bi-annually. (RA, ADRE) • Data collection (ADRE, RA) and year-end results reporting (EE).
Phase 5 (Jul 2024-Jun 2025)
• Provide the ETL program to control teachers. (PI, PRDR, ADTO, ETLNs) • Onboard control teachers to the LMS. (ADTO, ETLNs) • Control teachers complete financial forms allowing them to receive stipend payments. (ETLNs, SC) • Control teachers select, collect, submit, and share three micro-credentials. (ETLNs, RA) • Collect digital badges from control teachers. (ETLNs, RA) • Complete final stipend payments earned by control teachers. (SC)
Phase 6 (Jan 2025-Dec 2025)
• Prepare final performance reports to be disseminated to district and school leaders. (EE) • Write and publish findings in a peer-reviewed publication which will be submitted to the What Works Clearinghouse for review. (EE) • Write and publish an implementation/practitioner Guidebook with findings on best practices (PI, PRDR, ADRE) • Disseminate results to ETL stakeholders including SEA partner and coordinate plans for sustainable implementation and policy development at the state level. (PI, PRDR, DO)
Principal Investigator (PI), Project Director (PRDR), Director of Operations (DO), Assistant Director of Research and Evaluation (ADRE), Assistant Director of Teacher Outreach (ADTO), Research Associate (RA), Stipend Coordinator (SC), ETL Navigator (ETLN), External Evaluation (EE).

(6) The adequacy of procedures for leveraging the stipend program to inform continuous improvement and systematic changes to professional learning.

ETL will use Deming's Plan-Do-Study-Act (PDSA) as a continuous improvement model aligned to the three studies in the project (Strategy, Inspect, Impact). An iterative model, PDSA calls for determining areas to improve, doing a small-scale test, studying the results, and using the learning to improve actions (Deming, 1993; Rowland, Feygin, Lee, Gomez & Rasmussen, 2018). This process will contribute to the identification of best practices for project implementation and serve as a model for future policy changes and replication. Using PDSA with teachers and administrators over the course of three years of implementation will strengthen the ownership and buy-in of the program over time while the learning contracts will become part of a culture of continuous improvement. The evaluation team will report on teacher engagement to inform district leadership of outcomes, offering an opportunity for reflection and systemic change decisions at the district level.

Applicant Requirement (g)(1): Upon completion of the study, results will be shared with stakeholders at NCDPI in an effort to explore scaling plans and sustainable implementation via policy development. Steps toward offering more teachers the opportunity to engage in teacher-directed professional learning include: 1) establishing LEA and SEA policies that allow and encourage TDPL in satisfaction of recertification requirements, 2) models that demonstrate how to implement TDPL logistically and financially and, 3) demonstrated efficacy for TDPL as a professional development strategy. ETL will have the capability to inform the first two points and, pending the results of the evaluation, possibly the third.

C. Quality of the Project Evaluation

(1) The extent to which the methods of evaluation will, if well implemented, produce evidence about the project's effectiveness that would meet the What Works Clearinghouse standards with or without reservation as described in the What Works Clearinghouse Handbook.

In partnership with the Appalachian team, the National Council for Community and Education Partnerships (NCCEP) will provide an independent, third-party evaluation of the ETL program that includes an **implementation** and **impact** evaluation. The evaluation plan will incorporate the logic model and research questions, as well as the formative and summative evaluation and establish clear data collection protocols beginning in Phase 1 and continuing through Phase 6. SEA and LEA contracts will allow for obtaining project data which will be continuously monitored and analyzed annually. ETL will be guided by **five research questions**.

1. ***Implementation Evaluation***: To what extent did the ETL program follow appropriate protocols to ensure fidelity across treatment and control sites?
2. ***Impact Evaluation***: What is the impact of the ETL program on teachers' instructional practices, as measured by the Classroom Assessment Scoring System (CLASS), as compared to the business as usual condition?
3. ***Impact Evaluation***: What is the impact of the ETL program on teachers' self-efficacy, as measured by the Teachers' Self-Efficacy Scale (TSES), as compared to the business as usual condition?
4. ***Impact Evaluation***: What is the impact of the ETL program on student social-emotional learning (SEL), as measured by the social-emotional edition of the

Social Skills Improvement System (SSIS), as compared to the business as usual condition?

5. ***Impact Evaluation***: What is the impact of the ETL program on student academics, as measured by middle school end-of-grade (EOG) and end-of course (EOC) assessments in reading and mathematics, as compared to the business as usual condition?

The ETL evaluation has a research and evaluation plan that will adhere to the What Works Clearinghouse (WWC) procedures and standards, the Education Department General Administrative Regulations (EDGAR), the Family Educational Rights and Privacy Act (FERPA), and Appalachian's Institutional Review Board (IRB) protocols. The study will use the WWC Version 4.1 Standards Handbook and any future versions with a focus on the ***teacher excellence*** category. NCCEP will update the evaluation plan and provide it to the U.S. Department of Education, as appropriate. The logic model will guide the project in meeting outcomes, as well as the annual reporting of goals and objectives (see *Project Design, 5*). The ETL program will be evaluated using an **experimental design that meets the WWC standards without reservations** by employing a **cluster randomized controlled trial (RCT)** with assignment at the school level. The units of analyses are teachers and students; however, student outcomes are a proxy for teacher performance. The treatment group will receive the ETL program intervention while the control group will participate in a business as usual (BAU) manner during the intervention phases of the project (Phases 2-4). It is hypothesized that teachers in treatment schools will experience greater outcomes than those in the BAU schools, including teacher instructional practices and self-efficacy and student social-emotional and academic outcomes. See the research design visual in Appendix I. Research question 1 will be addressed by the **implementation evaluation** and will include six components to monitor the ETL program's fidelity: 1) identifying confounds, 2) teacher recruitment, 3) teacher training, 4) data tracking and management, 5) ensuring teachers adhere to the study

protocols, and 6) pre- and post-TDPL questionnaire development and administration. Research questions 2-5 will be addressed by the **impact evaluation** which will employ quantitative statistics to measure teacher and student outcomes. In Phase 5, the intervention implementation and data collection for the treatment group will end and teachers in the control group will receive the ETL program through a delayed treatment control condition to foster sustainability.

The sample includes 20 economically disadvantaged, rural schools (10 treatment schools and 10 control schools) serving grades 6-8 in western NC, with an estimate of 500 teachers and 9,760 students. The evaluation team will conduct a power analysis prior to recruitment to determine if the sample size is sufficient to detect an effect and will adjust to ensure the sample is adequate. Additionally, the evaluation team will monitor group assignment protocols, key data measures, missing data, and attrition. Prior to randomization, teachers will consent to participate in the study and will be able to opt out of the study at any time post-randomization. Students will participate in the study under the LEA's agreement and per the Protection of Pupil Rights Amendment (PPRA). As per the WWC standards, the attrition rate will consist of teachers who opt out post-randomization or leave for any other reason and students who leave the school or have other reasons for attrition. Post-randomization, NCCEP will track cross-overs and no-shows and will not allow joiners. Teachers and students who agree to participate will follow the project outline in Table 2 which has an intervention phase of three consecutive academic years allowing for an in-depth examination of the ETL program; academic year cohorts will be aggregated for final analyses.

The evaluation team will examine group differences using two analytic methods, both employing the same statistical analyses. First, an intent-to-treat (ITT) design will analyze the differences between those assigned to the treatment and control group regardless of whether

they participated following WWC procedures. Second, a supplementary treatment-on-the-treated (TOT) design will analyze the differences between those in the treatment group who received the complete intervention and the control group allowing for a secondary analysis focused on schools in practice. NCCEP will assess variation between and among schools prior to and after randomization. NCCEP will establish baseline equivalence to reduce selection bias for the TOT analyses and the ITT analyses if the overall and/or differential attrition rate meets the WWC threshold. Statistical analyses of the impact will include hierarchical linear modeling (HLM) with two models, one for each unit of analysis. First, a two-level model with districts and schools where teachers are the unit of analysis and, second, a three-level model with districts, schools, and teachers where students are the unit of analysis. In addition, multilevel linear regression analyses will be used to analyze results and will yield unbiased estimates of the ETL impact. Other multivariate and quantitative analyses will be conducted as deemed appropriate. Effect sizes will be reported in all analyses. The models below estimate the impacts of the ETL program. Covariates include a baseline continuous academic indicator, a measure of socioeconomic status, and all input variables from the logic model.

Two-Level HLM Teacher Outcomes (Y_{qr})	**Three-Level HLM** Student Outcomes (Y_{ijk})
Level-1 (School Level)	**Level-1 (Teacher Level):**
$Y_{qr} = \beta_{0r} + \sum_{m=1}^{M} \beta_{mr} X_{mr} + \varepsilon_{qr}$	$Y_{ijk} = \pi_{0jk} + \sum_{p=1}^{P} \pi_{pjk} a_{pjk} + \varepsilon_{ijk}$
Level-2 (District Level)	**Level-2 (School Level):**
$\beta_{mr} = \gamma_{m0} + \gamma_{m1} Treatment_{1r} + \sum_{n=2}^{N_m} \gamma_{mn} Block_{nr} + r_{mr}$	$\pi_{pjk} = \beta_{p0k} + \sum_{q=1}^{Q_p} \beta_{pqk} X_{qjk} + r_{pjk}$
	Level-3 (District Level):
	$\beta_{pqk} = \beta_{pq0} + \gamma_{pq1} Treatment_{1k} + \sum_{s=2}^{S_{pq}} \gamma_{pqs} Block_{sk} + u_{pqk}$

(2) The extent to which the evaluation plan clearly articulates the key project components, mediators, and outcomes as well as measurable threshold for acceptable implementation.

The **key project components** of the ETL program are: 1) teacher-identified needs assessment, 2) learning contract, 3) micro-credentials, and 4) stipends. The ETL approach consists of a TDPL intervention with the unit of delivery to teachers. As part of the evaluation, teachers will be examined as to whether they met the **measurable threshold for acceptable implementation**, which consists of ***full completion of four key activities***.

1) Complete a needs assessment prior to the intervention;
2) Complete and have approved the learning contract before the intervention;
3) Complete nine micro-credentials over three years in Phases 2-4 (see Appendix I); and
4) Receive full stipends totaling [redacted] per year for three years for a total of [redacted].

The knowledge base regarding micro-credentialing is still emerging; as such, micro-credentialing **mediators** draw from the literature on PD, professional learning, and micro-learning, which are all grounded in competency-based education. Shamir-Inbal and Blau (2020) found a significant correlation between teacher's instructional practice and the mediating factors of *seniority in teaching* and *teacher training*. Hattie (2015) indicates that any PD which occurs in *an environment that is high in collegiality* results in improved instructional practice. Similarly, Abbasian and Esmailee (2018) found that significant impacts of PD on student academic achievements were mediated by the *collegiality among the school staff*. Jacob et al. (2015) goes further and suggests that a *school's instructional climate*, *staff turnover*, and *individual educator's self-efficacy* are mediating factors of student achievement. Domitrovich et al. (2009) found that *educators who received SEL PD* produced improvements in student SEL. Diamond and Gonzalez (2016) and Young et al. (2019) found that micro-credentials increased teacher self-efficacy but was mediated by *school climate*. The **mediators** (**M**) align to the ETL program and demonstrate a relationship with the impact evaluation **outcomes** (**O**) as follows: 1) **O**: teacher professional learning (**M**: *teacher seniority, teacher training, environmental collegiality*); 2) **O**: teacher self-efficacy (**M**: *school climate*); 3) **O**: Student SEL (**M**: *educator SEL PD*); 4) **O**:

student academic achievement (**M**: *school staff collegiality, instructional climate, staff turnover, educator self-efficac*y). Mediators will be monitored as part of the formative evaluation.

(3) The extent to which the methods of evaluation will provide performance feedback and permit periodic assessment of progress toward achieving intended outcomes.

The evaluation plan provides formative evaluation through all stages of ETL with the logic model as a blueprint for staying on track (see *Absolute Priority 1*). Short- and mid-term outcomes of the logic model are the foundation of **performance feedback and periodic assessment** toward achieving the outcomes. There will be two formative studies conducted. **Study 1-Strategy** will examine the ETL program's first two years of implementation and intervention (Phase 1 and 2) including the implementation of teacher training, teacher and student engagement, teacher self-efficacy, and ensuring schools are well-informed. Additionally, it will include the pre- and post-summer convening questionnaires, the classroom needs assessment, and micro-credentials completed in the first year of intervention (Phase 2), with a report to be finalized after the conclusion of Phase 2. **Study 2-Inspect** will examine the TSES and classroom observations with a closer look at teacher and student engagement, teacher self-efficacy, classroom management across treatment and control teachers, student SEL outcomes, and level of school buy-in with a report to be finalized after the conclusion of Phase 3. **Study 3-Impact,** outlined *in this section 1,* will conclude the ETL summative impact study at the end of Phase 4 which will be prepared for WWC and peer-review, and final federal reporting.

The methods that will aid in continuously monitoring the project include questionnaires, instruments, classroom observations, and continuous data collection. There are three annual **questionnaires** administered at the end of each academic year (2022, 2023, 2024) including: 1) a teacher questionnaire (also including a pre-/post-questionnaire following the Summer Convening in 2021), 2) a student questionnaire, and 3) a school administrator questionnaire. There are two

validated instruments including: 1) the SSIS SEL ($\alpha = 0.83$-0.95), a 46-item scale, administered to treatment and control students at the start of the study and the end of each academic year. The SSIS SEL will measure self-awareness, self-management, social awareness, relationship skills, and responsible decision-making (Elliott & Gresham, 2017); and 2) the TSES administered to treatment and control teachers before the project begins and at the end of each academic year. The TSES ($\alpha = 0.80$) will gauge change of self-efficacy in student engagement, instructional strategies, and classroom management (Tschannen-Moran & Hoy, 2001), and has sound reliability and validity for the whole scale and the three subscales (Klassen & Chiu, 2010). **Classroom observations** will be assessed using the Classroom Assessment Scoring System (CLASS) to evaluate the classroom environment and assessing the quality of teacher social and instructional interactions with students (Pianta et al., 2012). The CLASS offers a reliable, valid, and evidence-based approach ($\alpha = 0.87$-0.92) to effective observation of classroom interactions. CLASS observers will complete the CLASS certification program, which will include an annual refresher to ensure inter-rater reliability. Observations will take place at the beginning and the end of the first academic year and at the end of the following academic years in all treatment and control classrooms. **Continuous data collection** of student demographic data, socioeconomic data, and academic data will occur through questionnaires/instruments and an MOU with NCDPI; with their support, SQL reports will be deployed in participating LEAs to collect data from the Student Information System (SIS). District, school, and teacher data will be collected from NCDPI, LEAs, and questionnaires/instruments. Ongoing monitoring of teacher engagement, progress, and completion of micro-credentials will take place via the LMS.

The three studies will provide a scaffolded approach to achieving intended outcomes with the **Study 1-Strategy** addressing research question 1, and the short-term outcomes of the logic

model. **Study 2-Inspect** will examine the mid-term outcomes of the logic model and provide an interim analysis of research questions 2, 4, and 5. **Study 3-Impact** will analyze the long-term outcomes of the logic model and a summative evaluation of research questions 2-5. The evaluation tasks timeline is in Appendix I. The ETL project will lead to a replicable model for educators and will be poised to scale beyond western NC at the completion of the study.

D. Additional Applicant Requirements

Applicant Requirement (a) and (c) (4): The pool of teachers eligible to participate in ETL will come from schools in 20 LEAs in western North Carolina, serving approximately 9,760 students. Based on the high percentage of teachers who expressed interest in the project (80%), the pool of over 750 teachers should yield a minimum of 500 teachers (250 in the treatment group and 250 in the control group). Sixth through eighth grade teachers in rural, western NC middle schools with a >50% economically disadvantaged student population will be eligible to participate and request a stipend. In the event that more schools or teachers express interest than can be accommodated in ETL due to the amount of funds for stipends, eligibility will be prioritized to the schools with a higher percentage of economically disadvantaged students, ensuring that more high-need students are served. The ETL team will work with district leaders to clearly articulate and communicate the project design to prospective teacher participants and, if it becomes necessary to prioritize the selection of teachers, a rubric will be developed that captures data pertinent to the ETL project needs to guide selection.

Applicant Requirement (b)(1), (b)(3), and (b)(4): The ETL team polled teachers from western NC schools who would be likely participants in the project. With 125 responses, 81% reported satisfaction with their PD in the last year, a result mirroring the *NC Teacher Working Conditions Survey* administered annually to around 100,000 NC teachers (see Appendix I), with

approximately 75% expressing satisfaction (New Teacher Center, 2020). A higher percentage of teachers rated TDPL as very relevant (38%) versus traditional PD (25%), and a higher percentage of teachers rated traditional PD a little or not relevant (16%) versus TDPL (5%). ETL teachers indicated strong interest in stipend-based TDPL (80%), while only 1% were not at all interested. Based on data collected from western NC teachers and corroborated by results from the state survey, 80% of teachers at project schools are estimated to participate in ETL.

ETL includes teacher input in a variety of ways. In addition to the questionnaire, the ETL team created a Teacher Advisory Board (TAB) consisting of eight western NC teachers to provide input on the current project design, the feasibility of the stipend system, and the practicality of the management systems. Moving forward, participating teachers will interact with Navigators and other team members through regular meetings and the online PLC and provide feedback through a yearly questionnaire that will influence adjustments to the project.

Applicant Requirement (e): Part of the design of micro-credentials is to demonstrate a learned competency. Teachers will typically implement a new skill with their students as part of earning the micro-credential. Teacher learning contracts will be written with the goal of implementing changes in instructional learning with students. Teachers will share their plans for and results of their classroom implementation in the online community, thus providing support for others in the project. Teachers will also have support from the Navigators and the school and district instructional leaders. During the summer convening, teachers will have opportunities to discuss their ideas for implementation away from the pressures of everyday teaching.

Applicant Requirement (g)(2): ETL will explore the expansion of professional learning stipends in a variety of ways. As ETL schools move into the last year of the intervention, they will begin to plan for sustainability with the support of the ETL team. Best practices will emerge as project

participants engage in ETL and the online PLC. With input from teachers and administrators, ETL will produce a guidebook that includes best practices and will serve as a road map for those interested in implementing a stipend-based, TDPL system. The ETL Advisory Board, including NCDPI and other state leaders, will influence the creation of state policy around the use, scaling, and the replication of micro-credentials to earn CEUs. If the project shows positive results, a reasonable next step would be to expand to elementary and high schools, to North Carolina, and/or the region. This would easily raise the number of students potentially impacted to over 40,000, when a full cost-analysis study could be conducted.

Applicant Requirement (h)(1) and (h)(2) and (h)(3): The ETL team will reiterate with schools that the stipends and other funds available through the project must supplement, not supplant, existing PD funding. Since teachers complete a learning contract that is approved by ETL, use of ETL funds for personal enrichment or purely for career gain will not be allowable. Working with the Digital Promise micro-credentials platform and encouraging teachers to think broadly about how they acquire and demonstrate competency will promote autonomy and flexibility while ensuring that there are no conflicts of interest regarding the use of stipends and other grant money. With nearly 60 issuing organizations represented in the Digital Promise platform, the use of the stipend will not impose an overly restrictive set of choices and will ensure that no grant partner, nor ETL, be the primary beneficiaries of the stipends.

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