U.S. Department of Education - EDCAPS
G5-Technical Review Form (New)

Technical Review Coversheet

Applicant: The Curators of the University of Missouri Special Trust (S411C200078)
Reader #1: **********

		Points Possible	**Points Scored**
Questions			
Selection Criteria			
Quality of Project Design			
1. Quality of Project Design		40	40
	Sub Total	40	40
Resources and Quality of Management Plan			
Resources and Quality of Management Plan			
1. Resources and Management		35	31
	Sub Total	35	31
Selection Criteria			
Quality of the Project Evaluation			
1. Project Evaluation		25	25
	Sub Total	25	25
Priority Questions			
CPP			
Competitive Preference Priority 1			
1. Computer Science		5	5
	Sub Total	5	5
	Total	105	101

Technical Review Form

Reader #1:   **************

Applicant: The Curators of the University of Missouri Special Trust (S411C200078)

Questions

Selection Criteria - Quality of Project Design

1. **The Secretary considers the quality of the design of the proposed project based on the following factors:**

Reader's Score: **40**

   Sub

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

    Strengths:

    Table 1 (e20) provides clear project goals with aligned objectives and cited outcome measures. The objectives and measures include both teacher and student populations.

    Weaknesses:

    N/A

    Reader's Score: **10**

2. **(2) The extent to which the design of the proposed project is appropriate to, and will successfully address, the needs of the target population or other identified needs.**

    Strengths:

    The target population's study is 5th grade teachers and students in rural schools (e19). The project includes PD for teachers in an online environment with other supports, and online student components (e21) – important features for rural teachers and in the era of COVID-19.

    Students are introduced to computer science concepts and have the opportunity to engage/master CS skills, and progress to higher-thinking and skills (e24).

    Weaknesses:

    N/A

    Reader's Score: **10**

3. **(3) The extent to which the design of the proposed project reflects up-to-date knowledge from research and effective practice.**

Strengths:

The introduction provides a succinct overview of the lack of diversity in the computer science workforce, and the need for computer science to be integrated into curriculum (e17-18). The learning model utilizes proven game design and pedagogical practices (e19, e21, e22, e23), as well as an instructional model that has shown sustainability and scalability (e22). The potential to integrate computer science into math curriculum will increase access to rigorous coursework in CS (e26).

Weaknesses:

N/A

Reader's Score: 10

4. **(4) The potential contribution of the proposed project to increased knowledge or understanding of educational problems, issues, or effective strategies.**

Strengths:

The project could add to the knowledge base on effective strategies to increase computational thinking through math lessons that integrate STEM approaches (e19). The teacher study is designed to inform practices for successful supporting teachers in CS education (e22). Teachers will learn strategies that include having/expressing high expectations to increase student motivation, critical for this project's target student population (e26). The project will develop and validate a tool for measuring student computational thinking (e28). A virtual coaching cycle will be created to support teachers in an online PD environment (e31).

Weaknesses:

N/A

Reader's Score: 10

Resources and Quality of Management Plan - Resources and Quality of Management Plan

1. **The Secretary considers the adequacy of resources and the quality of the management plan for the proposed project based on the following factors:**

Reader's Score: 31

1. **(1) 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.**

Strengths:

A detailed timeline shows phases of planning, piloting, implementation and study, and dissemination (e28). This timeline incorporates details on the RCT and population sample sizes for each cohort.

Weaknesses:

Year 4 is stated as the viability study for continuation, but the accompanying text does not describe what will be studied (e30-31).

Sub

Reader's Score: 9

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

Strengths:

Reducing costs for teacher PD have been taken into consideration (e.g., online environment using Zoom, no travel required) (e31-32). The cost of PD per student ($105) is reasonable for rural schools.
A detailed budget narrative provided rationale for project costs (e122).

Weaknesses:

This project provides one-time costs of equipment/connectivity to participating schools, which if truly necessary for project implementation, may be a barrier to other school's ability to implement (e31, e127, e130). Computers requested for all staff on project, yet these are individuals already on staff and none are 1.0 FTE and it says Chromebooks are not approved for use with some university systems (e126). The budget of over $675,000 for computers for project implementation is not reasonable in terms of scaling the intervention.

The position titles provide in the budget table (e123) do not align with the positions described in narrative above the table, so it was difficult to assess reasonableness.
The evaluation and AgentCube narratives provides detail on services provided each year, yet doesn't provide any information on how costs are calculated (e134-135).

Reader's Score: 3

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

Strengths:

Project collaborators have a history of work together, including the RCT with positive, significant results (the eMINTS pedagogy model) that forms the rationale for eDGE (e25). Project Director has experience with development/implementation of eMINTS and the other projects cited as rationale for this research (e33), and other key personnel have relevant expertise (e33). An experienced independent research team (e60, e65) and the software developer are included on the project team (e34).

Weaknesses:

n/a

Reader's Score: 5

4. **(4) The adequacy of procedures for ensuring feedback and continuous improvement in the operation of the proposed project.**

Strengths:

The proposal outlines a design-based research process that relies on feedback and iteration for continuous improvement (e28-29). Supporting detail regarding data collection and use is provided (e30).

Weaknesses:

N/A

Sub

Reader's Score: 10

5. **(5) The extent to which the results of the proposed project are to be disseminated in ways that will enable others to use the information or strategies.**

Strengths:

The proposal conveys prior experience with dissemination of results and the eMINTS model (e36), and the project team will produce a variety of products for dissemination (e36-37). A social media campaign will be used (e36).

Weaknesses:

While there was a long list of types of written products for dissemination as well as networks, the plan did not provide specific journals/practitioner forums that would be targeted for publication (e36).

Reader's Score: 4

Selection Criteria - Quality of the Project Evaluation

1. **The Secretary considers the quality of the evaluation to be conducted of the proposed project based on the following factors:**

Reader's Score: 25

Sub

1. **(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 reservations as described in the What Works Clearinghouse Handbook (as defined in this notice).**

Strengths:

The research team has experience with RCT to meet WWC standards and provided a plan framed on research questions aligned to data sources and analyses (e37). Validated measurement instruments will be used (e40) and statistical analyses are described.

Weaknesses:

N/A

Reader's Score: 15

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

Strengths:

Implementation will be studied and implementation thresholds are described (e38), and fidelity will be the study moderator (e39).

Sub

Weaknesses:

N/A

Reader's Score: 5

3. **(3) The extent to which the methods of evaluation will provide valid and reliable performance data on relevant outcomes.**

   Strengths:

   Appendix I.2 provides background on computational thinking pattern analysis, which is the foundation for building/validating a tool to measure student computational skills (e93).

   Weaknesses:

   N/A

   Reader's Score: 5

Priority Questions

CPP - Competitive Preference Priority 1

1. **Competitive Preference Priority 1: Computer Science**

   Projects designed to improve student achievement or other educational outcomes in computer science (as defined in this notice). These projects must address the following priority area: Expanding access to and participation in rigorous computer science coursework for traditionally underrepresented students such as racial or ethnic minorities, women, students in communities served by rural local educational agencies (as defined in this notice), children or students with disabilities (as defined in this notice), or low-income individuals (as defined under section 312(g) of the Higher Education Act of 1965, as amended).

   Strengths:

   The project focuses on increasing computational thinking skills for students while simultaneously expanding access and participation in computer science integrated within core math curriculum and standards.

   Weaknesses:

   N/A

Reader's Score: 5

Status: Submitted
Last Updated: 10/22/2020 04:31 PM

Technical Review Coversheet

Applicant: The Curators of the University of Missouri Special Trust (S411C200078)
Reader #2:   **********

		Points Possible	Points Scored
Questions			
Selection Criteria			
Quality of Project Design			
1. Quality of Project Design		40	40
	Sub Total	40	40
Resources and Quality of Management Plan			
Resources and Quality of Management Plan			
1. Resources and Management		35	33
	Sub Total	35	33
Selection Criteria			
Quality of the Project Evaluation			
1. Project Evaluation		25	23
	Sub Total	25	23
Priority Questions			
CPP			
Competitive Preference Priority 1			
1. Computer Science		5	4
	Sub Total	5	4
	Total	105	100

Panel #6 - FY20 EIR Early Phase- AP2 STEM - 6: 84.411C

Reader #2:   * * * * * * * * * *

Applicant: The Curators of the University of Missouri Special Trust (S411C200078)

Questions

Selection Criteria - Quality of Project Design

1. The Secretary considers the quality of the design of the proposed project based on the following factors:

Reader's Score: 40

Sub

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

Strengths:

Proposal introduces four specific goals and accompanying objectives and outcomes in Table 1, with accompanying details. The table also list appropriate phasing that captures each area distinctively, see e19-e21.

Weaknesses:

No weaknesses noticed.

Reader's Score: 10

2. (2) The extent to which the design of the proposed project is appropriate to, and will successfully address, the needs of the target population or other identified needs.

Strengths:

The program will address schools that high poverty rural with underrepresented populations in STEM where at least 40% of students qualify for free and reduced lunches, see e14, more specifically state on e81, where it states "we are serving 44 rural schools with a population of students with at least 40% eligible for Free and Reduced Priced Lunches

Weaknesses:

No weaknesses noticed.

Reader's Score: 10

3. (3) The extent to which the design of the proposed project reflects up-to-date knowledge from research and effective practice.

Strengths:

Applicant references up-to-date research throughout the proposal. Also, as an effective practice, the program model incorporates eMINTS and SGD design principles with a focus on best practices involving authenticity, problem solving, collaboration, and computational thinking (CT), with an instructional model reference in Appendix I.

Sub

1 (see e21 and e92). eDGE model incorporates the proven research strategies of eMINTS and SGD to create an optimal learning environment for high needs schools (Chaffin, 2015), see e22.

Weaknesses:

No weaknesses noticed.

Reader's Score: 10

4. **(4) The potential contribution of the proposed project to increased knowledge or understanding of educational problems, issues, or effective strategies.**

Strengths:

Proposal informs how "eMINTS trainers provide coaching to help teachers reflect on their own teaching practice and become self-sustaining decision makers (Foltos, 2007) while promoting the critical skills of creativity, communication (persuasion), collaboration, and adaptability (NACE, 2020). eDGE provides flexible teacher PD to bring CS and STEM into core classrooms where all students can experience the learning" e24. "A key component of eMINTS is helping teachers learn to develop high-quality standards-based lessons to provide learning experiences that help students participate in complex, higher-order thinking tasks derived from the CCSS State Standards (CCSS) which evidence suggests is a challenge (Kane & Staiger, 2012)" see e26.

Weaknesses:

No weaknesses noticed.

Reader's Score: 10

Resources and Quality of Management Plan - Resources and Quality of Management Plan

1. **The Secretary considers the adequacy of resources and the quality of the management plan for the proposed project based on the following factors:**

Reader's Score: 33

Sub

1. **(1) 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.**

Strengths:

An outline of the management plan is captured in e28-e32 with an overview of the timeline presented in table form on e29e31. Key personnel are listed on e33-e34. Further into the proposal, a more comprehensive management plan is located in Appendix I.5 (e102-e103), and a full program timeline in Appendix I.6 (e104-e105).

Weaknesses:

No weaknesses noticed.

Reader's Score: 10

2. **(2) The extent to which the costs are reasonable in relation to the objectives, design, and**

potential significance of the proposed project.

Strengths:

Relative to the project proposals listed objectives and design, a "Reasonableness of Costs" section is captured on e31-e33. Likewise, the delivery of learning to the programs learning audience, remote PD for teachers is presented as a cost savings tactic, along with estimations involving per student costs can be found on e31-e33.

Weaknesses:

No weaknesses noticed.

Reader's Score: 5

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

Strengths:

Listed key personnel appear to possess the relevant qualification for the project proposal, which is captured on e33-e34. In addition to the brief summary of qualifications listed on e33-e34, Appendix B houses resumes, with each document fully capturing the professional backgrounds, training and credentials of the project proposals key personnel, see e45-e66.

Weaknesses:

The proposal failed to summarily capture the skills, qualifications and credentials needed for professionals to provide instruction to the target population. Also, while letters from school district leaders are included, the letters fail to mention a pledge for teacher to participate in the project proposal. Support letters are found on e68-e75.

Reader's Score: 3

4. **(4) The adequacy of procedures for ensuring feedback and continuous improvement in the operation of the proposed project.**

Strengths:

The management team will guide continuous feedback and improvement using an iterative design process and formative data collection process to further its efforts for project revision, see e34-e35.

Weaknesses:

No weaknesses noticed.

Reader's Score: 10

5. **(5) The extent to which the results of the proposed project are to be disseminated in ways that will enable others to use the information or strategies.**

Strengths:

The proposal outlines their strategy for methods for dissemination of information and program outcomes, see e35-e37. The project proposal also lists a host of professional associations in which the program outcomes will be disseminated, see e105 and introduces an idea related to ongoing forms of work to continue "analysis and dissemination" (see e122).

Sub

> **Weaknesses:**
>
> No weaknesses noticed.

Reader's Score: 5

Selection Criteria - Quality of the Project Evaluation

1. **The Secretary considers the quality of the evaluation to be conducted of the proposed project based on the following factors:**

Reader's Score: 23

> **Sub**
>
> 1. **(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 reservations as described in the What Works Clearinghouse Handbook (as defined in this notice).**
>
>   **Strengths:**
>
>   Proposal informs how instruction will consist of "lessons and materials and show teachers how to scaffold student learning, practice strategies, encourage peer tutoring, and support cooperative problem solving, which are the basis of the highly successful eMINTS pedagogy that meets the What Works Clearinghouse without reservations guidelines (Meyers, 2016) in many rural school settings" (e21). Table 5, see e37-e38, serves as a guide for analyses of planned evaluations by an independent third-party evaluator, which eliminates biases.
>
>   **Weaknesses:**
>
>   Limited clarification on how partnering with SRI Education, an independent third-party contractor, see e12, will design a strategy resulting in a high-quality evaluation, or how gathered from surveys will aggregate collected data to "produce evidence" of the projects effectiveness to meet the conditions of WWC.
>
>   **Reader's Score:** 13
>
> 2. **(2) The extent to which the evaluation plan clearly articulates the key project components, mediators, and outcomes, as well as a measurable threshold for acceptable implementation.**
>
>   **Strengths:**
>
>   Also, the proposal informs how "teachers have options to support student learning in face-to-face, hybrid, or remote learning contexts; the use of various learning modalities reduces learning interruptions if remote teaching becomes necessary or if students need to work on projects from home" see e21.
>
>   **Weaknesses:**
>
>   No weaknesses noticed.
>
>   **Reader's Score:** 5
>
> 3. **(3) The extent to which the methods of evaluation will provide valid and reliable performance data on relevant outcomes.**

Sub

Strengths:

Clearly captured are methods on e38-41. Further, with the assistance of SRI Education, the project will conduct randomized control trials, formative data assessments, see e35, and supported with language and a table on e37. The proposed strategy is often used in research and data collection as a method designed to affirm the valid and reliable performance data to be captured.

Weaknesses:

No weaknesses noticed.

Reader's Score: 5

Priority Questions

CPP - Competitive Preference Priority 1

1. Competitive Preference Priority 1: Computer Science

Projects designed to improve student achievement or other educational outcomes in computer science (as defined in this notice). These projects must address the following priority area: Expanding access to and participation in rigorous computer science coursework for traditionally underrepresented students such as racial or ethnic minorities, women, students in communities served by rural local educational agencies (as defined in this notice), children or students with disabilities (as defined in this notice), or low-income individuals (as defined under section 312(g) of the Higher Education Act of 1965, as amended).

Strengths:

Proposal captured its service populations, traditionally underrepresented populations, see e14 and e18. Computational skills related to computer science competitive preference mentioned on e79 and further mentions its target populations on e81. Further into the proposal, the project informs how "we are targeting high-needs rural districts, which are less likely to have 1:1 technology implemented for target grades and content areas" see e129.

Weaknesses:

The proposal missed detailing, with specificity, how the project proposal will meet the needs of students with learning disabilities, like students categorized as SPED or on IEPs, see e14 and e18, identified element of the Competitive Preference Priority 1: Computer Science. Language specific to the learning disabled is not mentioned.

Reader's Score: 4

Status: Submitted
Last Updated: 10/29/2020 07:12 PM

Status: Submitted
Last Updated: 10/30/2020 05:51 PM

Technical Review Coversheet

Applicant: The Curators of the University of Missouri Special Trust (S411C200078)
Reader #4:   **********

		Points Possible	Points Scored
Questions			
Selection Criteria			
Quality of Project Design			
1. Quality of Project Design		40	40
	Sub Total	40	40
Resources and Quality of Management Plan			
Resources and Quality of Management Plan			
1. Resources and Management		35	35
	Sub Total	35	35
Selection Criteria			
Quality of the Project Evaluation			
1. Project Evaluation		25	25
	Sub Total	25	25
Priority Questions			
CPP			
Competitive Preference Priority 1			
1. Computer Science		5	5
	Sub Total	5	5
	Total	105	105

Technical Review Form

Reader #4: **********

Applicant: The Curators of the University of Missouri Special Trust (S411C200078)

Questions

Selection Criteria - Quality of Project Design

1. **The Secretary considers the quality of the design of the proposed project based on the following factors:**

Reader's Score: 40

Sub

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

   Strengths:

   This application clearly articulates specified and measurable goals, objectives and outcomes. As stated, eDGE proposes to infuse computer science and mathematics
   education with computational thinking (CT) so that computer science and mathematics are more
   integrated, relevant and interesting for all students and will allow core teachers to choose content materials for their classrooms along with additional goals (e19-e21). Measurability is explained to be conducted by external evaluators who will conduct a randomized controlled trial, 2-level hierarchical linear modeling, qualitative analysis, descriptive statistics and the eDGE logic model (e35, e37-e38, e101).

   Weaknesses:

   No weakness noted.

   Reader's Score: 10

2. **(2) The extent to which the design of the proposed project is appropriate to, and will successfully address, the needs of the target population or other identified needs.**

   Strengths:

   The application identifies the targeted population as being 5th grade students and their teachers; high poverty rural with underrepresented populations in STEM where at least 40% of students qualify for free and reduced lunches (e14).

   Weaknesses:

   No weakness noted.

   Reader's Score: 10

3. **(3) The extent to which the design of the proposed project reflects up-to-date knowledge**

from research and effective practice.

Strengths:

Background research is cited throughout the entire narrative; a full listing can be found on pages (e97-e99, e114-e119) The narrative posits this project can be considered innovated since eDGE provides flexible teacher PD to bring CS and STEM into core classrooms where all students can experience the learning (e24). Issues and remediations that this program would address listed under the heading - Issues and Strategies for Computer Science Education (e100).

Weaknesses:

No weakness noted.

Reader's Score: **10**

4. **(4) The potential contribution of the proposed project to increased knowledge or understanding of educational problems, issues, or effective strategies.**

Strengths:

The narrative highlights pre-established and potential critical lessons learned with implications for the field of education (e23). The impact study will be a cluster-randomized trial in which schools will be assigned to a treatment (eDGE) or control (business as usual) condition (e37).

Weaknesses:

No weakness noted.

Reader's Score: **10**

Resources and Quality of Management Plan - Resources and Quality of Management Plan

1. **The Secretary considers the adequacy of resources and the quality of the management plan for the proposed project based on the following factors:**

Reader's Score: **35**

1. **(1) 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.**

Strengths:

The management plan is elaborate. It lists specific measures, tools, objectives, the start and end dates of activities, and responsible personnel. Key personnel responsibilities, timelines and milestones are stated within the narrative and management plan. The detailed information provided is assuring to the accomplishment of stated project tasks (e29-e31, e102-e105).

Weaknesses:

No weakness noted.

Reader's Score: 10

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

   Strengths:

   An extensive narrative budget is written within this proposal. Each component of the program is thoroughly elaborated upon and is justifications are presented (e121-142).

   Weaknesses:

   No weakness noted.

   Reader's Score: 5

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

   Strengths:

   Key project personnel have strong backgrounds and experience levels, ranging from direct classroom experience, to teacher coaching, grant writing and field research among other critical experiences that will positively impact the outcome of this proposal. Specific resumes and narratives for each member have been provided (e45-e66).

   Weaknesses:

   No weakness noted.

   Reader's Score: 5

4. **(4) The adequacy of procedures for ensuring feedback and continuous improvement in the operation of the proposed project.**

   Strengths:

   The management team will guide continuous feedback and improvement using an iterative design process. They intend to field test teacher professional development with pilot schools and use this data to inform project revision. This includes project records, teacher surveys, teacher and coach interviews, and classroom observations and by holding monthly meetings to determine if revisions are needed (e34-35).

   Weaknesses:

   No weakness noted.

   Reader's Score: 10

5. **(5) The extent to which the results of the proposed project are to be disseminated in ways that will enable others to use the information or strategies.**

   Strengths:

   The application indicates the eMINTS research results and practices have been published in professional journals, featured in a book chapter and numerous professional journals. They make a notation that the Executive Director spoke at the Whitehouse. They indicate the eMINTS website will create a dissemination team to feature project milestones, results, and best practices along with annual reports. This same team will develop practitioner articles, practical guides, and white papers. Research results from this project will be submitted to national professional and practitioner journals and regional and statewide publications. eDGE research results will produce a nationally disseminated 5th grade CS curriculum based on game and simulation design within core classrooms. The team

plans on attending and presenting at research conferences such as the American Education Research Association (AERA) and practitioner-focused conferences such as the International Society for Technology in Education (ISTE) and CSTA. Information will also be disseminated through Twitter, Facebook, LinkedIn and Pinterest (e35-e37).

Weaknesses:

No weakness noted.

Reader's Score: 5

Selection Criteria - Quality of the Project Evaluation

1. **The Secretary considers the quality of the evaluation to be conducted of the proposed project based on the following factors:**

Reader's Score: 25

Sub

1. **(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 reservations as described in the What Works Clearinghouse Handbook (as defined in this notice).**

Strengths:

The authors of this application cite research that states eDGE courses provide lessons and materials and show teachers how to scaffold student learning, practice strategies, encourage peer tutoring, and support cooperative problem solving, which are the basis of the highly successful eMINTS pedagogy that meets the What Works Clearinghouse without reservations guidelines in many rural school settings (e21).

Weaknesses:

No weakness noted.

Reader's Score: 15

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

Strengths:

SRI will complete an external evaluation of student motivation, interest, and CT transfer, and teacher efficacy with remote PD; curriculum and coaching will be assessed for future game design projects with AgentSheets, Inc. 3D software (e14). SRI will also work with eDGE developers to establish data-based thresholds for acceptable implementation in four key factors: adherence (whether delivered as designed), dosage (how much was received), quality of delivery (whether delivered with intended techniques), and level of participant engagement. Use of coaching logs, teacher surveys and interviews, CTP assessment of students' artifacts, classroom observations, student motivational surveys and the Principled Assessment of Computational Thinking, SMS and CTPA will also be used as evidence of evaluation techniques (e20, e38-e41).

Sub

> **Weaknesses:**

No weakness noted.

> **Reader's Score:** 5

3. **(3) The extent to which the methods of evaluation will provide valid and reliable performance data on relevant outcomes.**

> **Strengths:**

SRI will leverage the Evidence Centered Design process to adapt a previously validated assessment, the Principled Assessment of Computational Thinking. The adapted CT assessment will be aligned to the CT learning targets in eDGE. SRI will administer the presurvey and CT assessment to treatment and control schools before eDGE begins (school year 2022-23), and the post-survey and assessment when schools have completed eDGE. Exact rationale for the methods of valid and reliable outcomes is contained in the narrative (e39-e41).

> **Weaknesses:**

No weakness noted.

> **Reader's Score:** 5

Priority Questions

CPP - Competitive Preference Priority 1

1. **Competitive Preference Priority 1: Computer Science**

   Projects designed to improve student achievement or other educational outcomes in computer science (as defined in this notice). These projects must address the following priority area: Expanding access to and participation in rigorous computer science coursework for traditionally underrepresented students such as racial or ethnic minorities, women, students in communities served by rural local educational agencies (as defined in this notice), children or students with disabilities (as defined in this notice), or low-income individuals (as defined under section 312(g) of the Higher Education Act of 1965, as amended).

> **Strengths:**

Students in the eDGE will program games and STEM simulations in 5th grade core classrooms addressing math and CS standards, aligned to CSTA and Common Core State Standards for Math (CCSS-M) utilizing computational thinking patterns (CTP). The students will begin with use of collaborative diffusion - artificial intelligence, and then to scientific simulations. Beginning with games while building skills is supported by research to make learning to code fun and engaging. Students use the CT skills they learn in game design to create simulations involving higher-level thinking. Teacher PD will bring computer science and STEM into core classrooms (e14, e22, e24).

> **Weaknesses:**

No weakness noted.

Reader's Score: 5

Status: Submitted
Last Updated: 10/30/2020 05:51 PM