

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

Status: Submitted

Last Updated: 08/06/2021 01:15 PM

Technical Review Coversheet

Applicant: WestEd (S411B210014)

Reader #1: *****

| | Points Possible | Points Scored |
|------------------------------------------|-----------------|---------------|
| Questions | | |
| Selection Criteria | | |
| Significance | | |
| 1. Significance | 15 | 10 |
| Sub Total | 15 | 10 |
| Strategy to Scale | | |
| Strategy to Scale | | |
| 1. Strategy to Scale | 20 | 18 |
| Sub Total | 20 | 18 |
| Selection Criteria | | |
| Quality of Project Design | | |
| 1. Project Design | 20 | 20 |
| Adequacy of Resources | | |
| 1. Quality of the Management | 20 | 20 |
| Quality of the Project Evaluation | | |
| 1. Project Evaluation | 25 | 0 |
| Sub Total | 65 | 40 |
| Priority Questions | | |
| CPP1 | | |
| Computer Science | | |
| 1. Computer Science | 5 | |
| Sub Total | 5 | |
| Total | 105 | 68 |

Technical Review Form

Panel #4 - EIR Mid-Phase - 4: 84.411B

Reader #1: *****

Applicant: WestEd (S411B210014)

Questions

Selection Criteria - Significance

1. The Secretary considers the significance of the proposed project. In determining the significance of the proposed project, the Secretary considers the following factors:

Reader's Score: 10

Sub

1. (1) The national significance of the proposed project.

Strengths:

The applicant presented a compelling argument regarding the significance of the proposed project by referencing the NAEP (National Assessment of Educational Progress) and Program for International Student Assessment (PISA) data of students academically underperforming in United States' schools (p. e22).

Another strength is when the applicant discussed a potential opportunity through a meta-analysis of programs designed to improve students' personal and social skills (p. e23). This would be beneficial in improving the dismal data in student achievement. In addition, it will aid students in learning new content and debating their ideas in a respectful manner.

Weaknesses:

Although the applicant provided data from the PISA, it would have been beneficial for the applicant to provide additional background information (such as schools' and students' demographics) regarding the 15-year-olds who were included in the study in order to determine generalizability of the data (p. e22).

Reader's Score:

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

Strengths:

The applicant proposes Citizen Math, which is an effective strategy aimed at integrating academic learning strands and improve students' social and emotional learning needs (p. 23). As students are engaged in math lessons, they would also be engaged in addressing educational problems and complex societal issues that are relevant to them.

Another strength is Citizen Math is aligned to the What Works Curriculum (WWC). Based on the current research, the effective implementation of Citizen Math helped to improve students' math scores within a few lessons (p. e24).

Sub

Weaknesses:

The applicant stated Citizen Math is aligned with grades 6-8 and Algebra I and II. It appears that the Citizen Math program is more applicable to middle school students. The applicant notes that only a couple of course offerings are relevant to high schools which somewhat limits the potential contribution of the project (p. e24).

Reader's Score:

Strategy to Scale - Strategy to Scale

- 1. The Secretary considers the applicant's strategy to scale the proposed project. In determining the applicant's capacity to scale the proposed project, the Secretary considers the following factors:**

Reader's Score: 18

Sub

- 1. (1) The extent to which the applicant identifies a specific strategy or strategies that address a particular barrier or barriers that prevented the applicant, in the past, from reaching the level of scale that is proposed in the application.**

Strengths:

The applicant identified three barriers and three strategies to address the barriers: 1. flexible, online professional learning opportunities; 2. establishing and fostering a Citizen Math community; and 3. additional supports for district adoption (p. e25).

In strategy 1. flexible, online professional learning opportunities, the applicant stated that school districts who provide formal professional learning opportunities for their teachers tend to use Citizen Math more frequently. The applicant acknowledged the exorbitant cost of providing face-to-face professional development; therefore, it proposes virtual professional learning workshops, five video case studies, and five to ten short video lesson-specific supports (p. e26).

In strategy 2. establishing and fostering a Citizen Math community, the applicant proposes to develop an online community platform to encourage both formal and informal collaboration comprised of Citizen Math teachers which is a strength in addressing the geographical and financial barriers within rural school districts (p. e27). The applicant intends to survey and interview groups of teachers to identify their current platforms and use improvement science methods to identify best practices and strategies to ensure teachers are actively engaged in an online platform.

In strategy 3. additional supports for district adoption, the applicant intends to conduct a needs analysis to identify common requirements among school districts. In addition, the needs analysis will also seek to identify any additional support that will enhance teaching and learning. Based on the current data, the applicant has identified that many districts would require student-facing materials to be translated into various languages (p. e28).

Weaknesses:

The applicant indicated that more than 4,000 teachers used at least one Citizen Math lesson in the past year but did not offer the necessary geographic location of the teachers in order to determine if this is a program strength or weakness (p. e25).

Reader's Score:

Sub

2. (2) The mechanisms that applicant will use to broadly disseminate information on its project so as to support further development or replication.

Strengths:

The applicant has demonstrated an intent to broadly disseminate information from the project to support replication. For instance, the applicant plans to communicate information to practitioners and the general public through articles, videos, blog posts distributed through email, social media, journals, news outlets, Stories from the Field, national research conferences, and published articles in peer-reviewed journals (p. e28).

Weaknesses:

Reader's Score:

Selection Criteria - Quality of Project Design

1. The Secretary considers the quality of the design of the proposed project. In determining the quality of the design of the proposed project, the Secretary considers the following factors:

Reader's Score: 20

Sub

1. (1) The extent to which there is a conceptual framework underlying the proposed research or demonstration activities and the quality of that framework.

Strengths:

The implementation of Citizen Math will have several key benefits, such as improving students' social-emotional skills. Furthermore, it will prepare students to be informed and productive, while improving their academic skills. A strength of the proposed project is that these benefits will help students to become successful life (p. e31).

The conceptual framework underlying the proposed research or demonstration activities are the key components and associated instructional activities. The proposed project's essential elements are Citizen Math lessons and the implementation supports and resources for teachers. Each math lesson is comprised of insightful questions that would engage students to become reflective thinkers and problem solvers (p. e32).

Weaknesses:

Reader's Score:

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

Strengths:

Upon review of the proposed project's goals, objectives, and outcomes, they are clearly specified and measurable. For example, the applicant plans to collect progress and summary data to determine whether at least 80% of teachers are participating in professional learning. In addition, the data would help to determine whether the applicant has implemented Citizen Math with fidelity and for continuous program improvement (p. e30).

Sub

Weaknesses:

Reader's Score:

- 3. (3) 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 proposed project intends to support Chicago Public Schools, West Virginia, and Maine math teachers. Chicago Public Schools will roll out a new curriculum in 2021-2022 and Citizen Math lessons will help to supplement teaching and learning. In West Virginia, private and federal grant funding over the past three years have created opportunities for math teachers to deepened students engagement and understanding of math. In Maine, Citizen Math is aligned with the state's middle school mathematical and social studies content and process standards (e. 35).

Another strength for the proposed project is that Citizen Math is ideal for rural communities because it addresses the technological, geographical, and financial barriers. The proposed online community will provide teachers with opportunities to network with peers who have been successful in implementing Citizen Math (e. 36).

Weaknesses:

Reader's Score:

Selection Criteria - Adequacy of Resources

- 1. The Secretary considers the adequacy of resources and the quality of the management plan for the proposed project. In determining the adequacy of resources and quality of the management plan for the proposed project, the Secretary considers the following factors:**

Reader's Score: 20

Sub

- 1. (1) The applicant's capacity (e.g., in terms of qualified personnel, financial resources, or management capacity) to bring the proposed project to scale on a national or regional level (as defined in 34 CFR 77.1(c)) working directly, or through partners, during the grant period.**

Strengths:

WestEd and American Institutes for Research staff include senior personnel with expertise in mathematics education, formative evaluation, and advanced quantitative methods. Additionally, they have successfully implemented and execute projects of similar complexity, scope, and focus, including large scale, multi-site randomized controlled trials – including multiple successful trials in two of the three project sites, Chicago Public Schools and Maine (p. e37). The key project staff's expertise would support bringing the proposed project to scale.

Another strength is demonstrated through the Citizen Math key personnel, Ginny Stuckey. Since 2011, Stuckey who has been building Citizen Math (formerly Mathalicious) alongside the founder. She has a successful track record of leading small teams to ambitious outcomes with limited resources (p. e38).

Sub

Weaknesses:

Reader's Score:

- (2) 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:

According to the applicant's High-Level Project Timeline, by Objective and Project Objectives and Responsibilities, by Organization and Project Year, it appears that the proposed project will be completed on time and within budget. In addition, it contains clearly defined responsibilities, identified responsible organizations, timelines, and milestones for accomplishing project tasks (e. 39).

Weaknesses:

Reader's Score:

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

Strengths:

The costs are reasonable in relation to the objectives, design, and potential significance of the proposed project based on the annual cost associated per student and school. It is also worth mentioning that the applicant stated that the proposed project's resources will be sustainable far beyond the life of the grant. For example, the case study videos can aid in future professional development for teachers in highlighting best practices and effective strategies (p. 40).

Weaknesses:

Reader's Score:

Selection Criteria - Quality of the Project Evaluation

- The Secretary considers the quality of the evaluation to be conducted of the proposed project. In determining the quality of the evaluation, the Secretary considers the following factors:**

Reader's Score: 0

Sub

- (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**

Sub

Clearinghouse standards without reservations as described in the What Works Clearinghouse Handbook (as defined in 34 CFR 77.1(c)).

Strengths:

Weaknesses:

Reader's Score:

2. (2) The extent to which the evaluation will provide guidance about effective strategies suitable for replication or testing in other settings.

Strengths:

Weaknesses:

Reader's Score:

3. (3) 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:

Weaknesses:

Reader's Score:

Priority Questions

CPP1 - Computer Science

1. 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:

Weaknesses:

Reader's Score:

Status: Submitted

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Technical Review Coversheet

Applicant: WestEd (S411B210014)

Reader #2: *****

| | Points Possible | Points Scored |
|------------------------------------------|-----------------|---------------|
| Questions | | |
| Selection Criteria | | |
| Significance | | |
| 1. Significance | 15 | 8 |
| Sub Total | 15 | 8 |
| Strategy to Scale | | |
| Strategy to Scale | | |
| 1. Strategy to Scale | 20 | 20 |
| Sub Total | 20 | 20 |
| Selection Criteria | | |
| Quality of Project Design | | |
| 1. Project Design | 20 | 17 |
| Adequacy of Resources | | |
| 1. Quality of the Management | 20 | 20 |
| Quality of the Project Evaluation | | |
| 1. Project Evaluation | 25 | |
| Sub Total | 65 | 37 |
| Priority Questions | | |
| CPP1 | | |
| Computer Science | | |
| 1. Computer Science | 5 | 0 |
| Sub Total | 5 | 0 |
| Total | 105 | 65 |

Technical Review Form

Panel #4 - EIR Mid-Phase - 4: 84.411B

Reader #2: *****

Applicant: WestEd (S411B210014)

Questions

Selection Criteria - Significance

1. The Secretary considers the significance of the proposed project. In determining the significance of the proposed project, the Secretary considers the following factors:

Reader's Score: 8

Sub

1. (1) The national significance of the proposed project.

Strengths:

The proposed project proposes the implementation of math problem-solving skills which will provide a significant impact on students and may become nationally significant. The applicant provides support for the need for interventions as the Program for International Student Assessments indicates that United States 15-year-olds performed well below the international average in math problem solving skills. (Page e22)

Weaknesses:

The applicant fails to make a clear connection between the unsupported generalizations regarding that lack of understanding of civic issue and how the proposed project will enhance the understanding of civic issues. The civic indicators include generalizations regarding public trust and political polarization that are not supported by evidence-based research. It is not clear how these issues will be addressed to promote a nationally significant effort. The applicant does not clearly describe how all populations could equally benefit from the proposed interventions of Citizen Math. (Pages e21-23)

Reader's Score:

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

Strengths:

The proposed project has the potential of contributing to an increase of knowledge and understanding of math problem-solving by adopting and integrating Citizen Math. Citizen Math activities are well aligned with positive effects on student mathematics achievement.(Page e24-25)

Weaknesses:

The applicant does not provide an in-depth definition of the strategies that will be used to provide improved social/emotional skills. Without specific strategies outlined for teachers and students, it is not clear what the contribution will be to improve understanding of social and emotional skills for all students including those with

Sub

special needs. The applicant indicates that social/emotional skills will be integrated into the math lessons; however, the applicant does not describe how using critical questions only will provide for significant increased knowledge and understanding of those skills. (Page e24)

Reader's Score:

Strategy to Scale - Strategy to Scale

- 1. The Secretary considers the applicant's strategy to scale the proposed project. In determining the applicant's capacity to scale the proposed project, the Secretary considers the following factors:**

Reader's Score: 20

Sub

- 1. (1) The extent to which the applicant identifies a specific strategy or strategies that address a particular barrier or barriers that prevented the applicant, in the past, from reaching the level of scale that is proposed in the application.**

Strengths:

The applicant identifies several barriers that have hindered the level of scaling up projects using Citizen Math in the past. Those include the need for more professional learning opportunities for teachers, especially those in rural areas. To address these barriers, the proposed project plans to provide virtual professional learning workshops and support the workshops with video cases and lesson-specific supports. These are effective strategies to address the isolation barriers faced by teachers in rural areas. (Pages e25-26)

Another identified barrier is the difficulty for some districts and schools in meeting the needs of the population they serve and the need for translation of materials. The proposed project does provide for supports for districts that need translation services. The applicant demonstrates that there is a need to establish and foster a Citizen Math Community. The applicant includes specific recruitment activities that will ensure the teachers participate in that programming. (Page e27-28)

Weaknesses:

No weaknesses found.

Reader's Score:

- 2. (2) The mechanisms that applicant will use to broadly disseminate information on its project so as to support further development or replication.**

Strengths:

The applicant demonstrates that effective mechanisms will be used to broadly disseminate information on its project. For example, classrooms will be showcased and research findings will be presented at national conferences and in peer-reviewed journals. (Page e28)

Sub

Weaknesses:

No weaknesses were found.

Reader's Score:

Selection Criteria - Quality of Project Design

- 1. The Secretary considers the quality of the design of the proposed project. In determining the quality of the design of the proposed project, the Secretary considers the following factors:**

Reader's Score: 17

Sub

- 1. (1) The extent to which there is a conceptual framework underlying the proposed research or demonstration activities and the quality of that framework.**

Strengths:

The applicant provides for an effective framework for the proposed project through the logic model. (Page e114)
The logic model includes clearly defined instructional activities and outcomes for the mathematics topics. The framework includes defined instructional activities that addresses discussion-based collaborative learning and carefully crafted questions to be used by teachers to encourage student problem solving. These outlined activities will provide an extensive framework for the mathematics and problem-solving components of the project. (Pages e29-33)

Weaknesses:

The applicant does not clearly link the social-emotional learning and civic education to the framework of the project. Without that link, it is difficult to determine if those elements will be specifically addressed. The framework and the logic model excludes specific references to the needs that were identified that addresses such things as "public trust in federal government and opportunities for civic engagement". (Page e21 and Page 114)

Reader's Score:

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

Strengths:

The proposed project includes three objectives for the project that are clearly specified and measurable. These objectives are linked to measurable goals and outcomes. For example, Objective 2: to evaluate the implementation and impact of Citizen Math will be measured by the signed memoranda of understanding, data collection and participation data. Objective 1: to create and test strategies to enhance adoption, use and sustainability of Citizen Math will be measured by the use of the online community platform. (Pages e29-30)

Sub

Weaknesses:

No weaknesses found.

Reader's Score:

3. **(3) 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 proposed project will appropriately address the needs of the rural and underserved students. The project does not require expensive technology and much of the programming is available online. This will provide for affordable services to isolated schools and districts. The applicant clearly demonstrates how this proposed program will build upon previous interventions. For example, in Maine, Citizen Math aligns with the state's mathematical content and process standards while reinforces its middle grade problem solving. (Pages e35-36)

Weaknesses:

The applicant indicates that there are needs to address civic education and improved social and emotional issues; however, the project design does not specifically address these needs with plans that are outlined clearly and can be easily implemented .

Reader's Score:

Selection Criteria - Adequacy of Resources

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

Reader's Score: 20

Sub

1. **(1) The applicant's capacity (e.g., in terms of qualified personnel, financial resources, or management capacity) to bring the proposed project to scale on a national or regional level (as defined in 34 CFR 77.1(c)) working directly, or through partners, during the grant period.**

Strengths:

The applicant's capacity to bring the proposed project to scale on a national or regional level is evident through the support of the partners within the project. (Page e37) The organization chart provides clear delineation of responsibilities of key partners. (Page e130) The key personnel have demonstrated appropriate training and experiences that will support the success of the project. The experiences include mathematics, evaluation, and grant administration which are relevant to the successful management of the proposed project. (Resumes and Pages e37-38)

Sub

Weaknesses:

No weaknesses found.

Reader's Score:

2. (2) **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 project's management plan includes clearly defined milestones, defined responsibilities and timelines. The timelines include defined beginning and ending dates for key components of the project. For example, additional supports for district adoption will be addressed during the first year of the project beginning in April and concluding in December. (Page e131-137) These efforts will ensure that the objectives will be achieved on time and within budget.

Weaknesses:

No weaknesses found.

Reader's Score:

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

Strengths:

The costs are reasonable in relationship to the objectives, design, and significance of the project. For example, the supplies needed are limited to only \$2,235 for the project. This is sufficient for the cost effective program. (Page e40 and Budget narrative)

Weaknesses:

No weaknesses found.

Reader's Score:

Selection Criteria - Quality of the Project Evaluation

1. **The Secretary considers the quality of the evaluation to be conducted of the proposed project. In determining the quality of the evaluation, the Secretary considers the following factors:**

Reader's Score:

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**

Sub

Clearinghouse standards without reservations as described in the What Works Clearinghouse Handbook (as defined in 34 CFR 77.1(c)).

Strengths:

N/A

Weaknesses:

N/A

Reader's Score:

2. (2) The extent to which the evaluation will provide guidance about effective strategies suitable for replication or testing in other settings.

Strengths:

N/A

Weaknesses:

N/A

Reader's Score:

3. (3) 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:

N/A

Weaknesses:

N/A

Reader's Score:

Priority Questions

CPP1 - Computer Science

1. 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:

N/A

Weaknesses:

N/A

Reader's Score: 0

Status: Submitted

Last Updated: 08/06/2021 01:20 PM

Status: Submitted

Last Updated: 08/06/2021 09:17 PM

Technical Review Coversheet

Applicant: WestEd (S411B210014)

Reader #3: *****

| | Points Possible | Points Scored |
|------------------------------------------|-----------------|---------------|
| Questions | | |
| Selection Criteria | | |
| Significance | | |
| 1. Significance | 15 | |
| Sub Total | 15 | |
| Strategy to Scale | | |
| Strategy to Scale | | |
| 1. Strategy to Scale | 20 | |
| Sub Total | 20 | |
| Selection Criteria | | |
| Quality of Project Design | | |
| 1. Project Design | 20 | |
| Adequacy of Resources | | |
| 1. Quality of the Management | 20 | |
| Quality of the Project Evaluation | | |
| 1. Project Evaluation | 25 | 25 |
| Sub Total | 65 | 25 |
| Priority Questions | | |
| CPP1 | | |
| Computer Science | | |
| 1. Computer Science | 5 | |
| Sub Total | 5 | |
| Total | 105 | 25 |

Technical Review Form

Panel #4 - EIR Mid-Phase - 4: 84.411B

Reader #3: *****

Applicant: WestEd (S411B210014)

Questions

Selection Criteria - Significance

1. The Secretary considers the significance of the proposed project. In determining the significance of the proposed project, the Secretary considers the following factors:

Reader's Score:

Sub

1. (1) The national significance of the proposed project.

Strengths:

Weaknesses:

Reader's Score:

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

Strengths:

Weaknesses:

Reader's Score:

Strategy to Scale - Strategy to Scale

1. The Secretary considers the applicant's strategy to scale the proposed project. In determining the applicant's capacity to scale the proposed project, the Secretary considers the following factors:

Reader's Score:

Sub

1. (1) The extent to which the applicant identifies a specific strategy or strategies that address a particular barrier or barriers that prevented the applicant, in the past, from reaching the level of scale that is proposed in the application.

Strengths:

Weaknesses:

Reader's Score:

2. (2) The mechanisms that applicant will use to broadly disseminate information on its project so as to support further development or replication.

Strengths:

Weaknesses:

Reader's Score:

Selection Criteria - Quality of Project Design

1. The Secretary considers the quality of the design of the proposed project. In determining the quality of the design of the proposed project, the Secretary considers the following factors:

Reader's Score:

Sub

1. (1) The extent to which there is a conceptual framework underlying the proposed research or demonstration activities and the quality of that framework.

Strengths:

Weaknesses:

Reader's Score:

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

Sub

Strengths:

Weaknesses:

Reader's Score:

- 3. (3) 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:

Weaknesses:

Reader's Score:

Selection Criteria - Adequacy of Resources

- 1. The Secretary considers the adequacy of resources and the quality of the management plan for the proposed project. In determining the adequacy of resources and quality of the management plan for the proposed project, the Secretary considers the following factors:**

Reader's Score:

Sub

- 1. (1) The applicant's capacity (e.g., in terms of qualified personnel, financial resources, or management capacity) to bring the proposed project to scale on a national or regional level (as defined in 34 CFR 77.1(c)) working directly, or through partners, during the grant period.**

Strengths:

Weaknesses:

Reader's Score:

- 2. (2) 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:

Sub

Weaknesses:

Reader's Score:

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

Strengths:

Weaknesses:

Reader's Score:

Selection Criteria - Quality of the Project Evaluation

1. The Secretary considers the quality of the evaluation to be conducted of the proposed project. In determining the quality of the evaluation, the Secretary considers 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 without reservations as described in the What Works Clearinghouse Handbook (as defined in 34 CFR 77.1(c)).

Strengths:

The research design, a school-level blocked randomized control trial (RCT), has the potential to meet the What Works Clearinghouse (WWC) group design standards without reservations. The randomized block design is an effective strategy to ensure standards for baseline equivalence can be met. The inclusion of the power analysis (pp. e138-140) demonstrated the study's sound conditional assumptions for detecting effect size and how sampling was determined.

Weaknesses:

None

Reader's Score:

2. (2) The extent to which the evaluation will provide guidance about effective strategies suitable for replication or testing in other settings.

Strengths:

The evaluation questions (p. e41) seek to provide evidence on both impact and implementation. If completed as designed, the evaluation has the potential to yield evidence to guide mid-course corrections for implementation, including lessons learned. Additionally, the design has the potential to yield meaningful effectiveness of the intervention components that can be replicated and/or tested, in part or as a whole. The applicant also intends to

Sub

examine the effect of potential moderating variables, such as student, teacher, and school characteristics, which if conducted as planned, will yield valuable evidence toward scalability.

Weaknesses:

None

Reader's Score:

3. (3) **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:

Exhibit 1 (pp. e29-30) clearly articulates the programmatic activities and primary intervention components, expected outcomes, and mechanisms to measure performance against those outcomes. Additionally, the applicant clearly articulates the conceptual framework (pp. e31-32); and the logic model (p. e114) is sound. Fidelity markers and outcome thresholds (pp. e46-47) are evidence-based, demonstrating a strong theoretical understanding of how the program and its components are intended to yield the stated outcomes.

Weaknesses:

None

Reader's Score:

Priority Questions

CPP1 - Computer Science

1. **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:

Weaknesses:

Reader's Score:

Status: Submitted
Last Updated: 08/06/2021 09:17 PM

Status: Submitted

Last Updated: 08/06/2021 05:19 PM

Technical Review Coversheet

Applicant: WestEd (S411B210014)

Reader #4: *****

| | Points Possible | Points Scored |
|------------------------------------------|-----------------|---------------|
| Questions | | |
| Selection Criteria | | |
| Significance | | |
| 1. Significance | 15 | |
| Sub Total | 15 | |
| Strategy to Scale | | |
| Strategy to Scale | | |
| 1. Strategy to Scale | 20 | |
| Sub Total | 20 | |
| Selection Criteria | | |
| Quality of Project Design | | |
| 1. Project Design | 20 | |
| Adequacy of Resources | | |
| 1. Quality of the Management | 20 | |
| Quality of the Project Evaluation | | |
| 1. Project Evaluation | 25 | 25 |
| Sub Total | 65 | 25 |
| Priority Questions | | |
| CPP1 | | |
| Computer Science | | |
| 1. Computer Science | 5 | |
| Sub Total | 5 | |
| Total | 105 | 25 |

Technical Review Form

Panel #4 - EIR Mid-Phase - 4: 84.411B

Reader #4: *****

Applicant: WestEd (S411B210014)

Questions

Selection Criteria - Significance

1. The Secretary considers the significance of the proposed project. In determining the significance of the proposed project, the Secretary considers the following factors:

Reader's Score:

Sub

1. (1) The national significance of the proposed project.

Strengths:

Weaknesses:

Reader's Score:

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

Strengths:

Weaknesses:

Reader's Score:

Strategy to Scale - Strategy to Scale

1. The Secretary considers the applicant's strategy to scale the proposed project. In determining the applicant's capacity to scale the proposed project, the Secretary considers the following factors:

Reader's Score:

Sub

1. (1) The extent to which the applicant identifies a specific strategy or strategies that address a particular barrier or barriers that prevented the applicant, in the past, from reaching the level of scale that is proposed in the application.

Strengths:

Weaknesses:

Reader's Score:

2. (2) The mechanisms that applicant will use to broadly disseminate information on its project so as to support further development or replication.

Strengths:

Weaknesses:

Reader's Score:

Selection Criteria - Quality of Project Design

1. The Secretary considers the quality of the design of the proposed project. In determining the quality of the design of the proposed project, the Secretary considers the following factors:

Reader's Score:

Sub

1. (1) The extent to which there is a conceptual framework underlying the proposed research or demonstration activities and the quality of that framework.

Strengths:

Weaknesses:

Reader's Score:

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

Sub

Strengths:

Weaknesses:

Reader's Score:

- 3. (3) 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:

Weaknesses:

Reader's Score:

Selection Criteria - Adequacy of Resources

- 1. The Secretary considers the adequacy of resources and the quality of the management plan for the proposed project. In determining the adequacy of resources and quality of the management plan for the proposed project, the Secretary considers the following factors:**

Reader's Score:

Sub

- 1. (1) The applicant's capacity (e.g., in terms of qualified personnel, financial resources, or management capacity) to bring the proposed project to scale on a national or regional level (as defined in 34 CFR 77.1(c)) working directly, or through partners, during the grant period.**

Strengths:

Weaknesses:

Reader's Score:

- 2. (2) 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:

Sub

Weaknesses:

Reader's Score:

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

Strengths:

Weaknesses:

Reader's Score:

Selection Criteria - Quality of the Project Evaluation

1. The Secretary considers the quality of the evaluation to be conducted of the proposed project. In determining the quality of the evaluation, the Secretary considers 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 without reservations as described in the What Works Clearinghouse Handbook (as defined in 34 CFR 77.1(c)).

Strengths:

The applicant has arranged for an independent evaluation of program activities and outcomes with American Institutes for Research (AIR); p. e41). The use of an independent evaluation team is a strength because the evaluation findings will be more objective and less likely influenced by any bias on the part of the project team. Both impact and formal evaluation activities are planned. AIR will execute a randomized control trial (RCT) to investigate research questions 1 through 6 (p. e41 – e45). The evaluation plan makes a case for schools as the unit of analysis and as a way to minimize attrition and spillover of treatment effects. Specifically, based on the What Works Clearinghouse (WWC) criteria, the use of a randomized trial to compare treatment and control groups along with efforts to minimize attrition should allow for an evaluation that meets WWC standards without reservations.

The applicant provides details on the evaluation team's prior success with managing large-scale RCTs (p. e43; Garet et al. 2017 study). Because high-attrition RCTs are not eligible to receive the highest evidence rating from the WWC, this demonstration of expertise for managing attrition is a particular strength in this evaluation plan.

Another strength of the evaluation plan outlined in the application is the power analysis provided on page e138; assumptions and estimations as outlined are reasonable and clear.

Sub

Weaknesses:

No weaknesses identified for factor 1.

Reader's Score:

2. (2) The extent to which the evaluation will provide guidance about effective strategies suitable for replication or testing in other settings.

Strengths:

The evaluation plan includes components that would allow the applicant to report on effective strategies and replication in other settings. Specifically, the applicant will evaluate a range of settings (e.g., urban and rural schools and districts) and investigate program effectiveness for different audiences. Multiple data sources are planned for each group of participants (e.g., student, teacher). The use of multiple data sources for each group is a strength because this provides a more comprehensive picture for each group. Because any data source is imperfect, the use of multiple sources helps overcome the limitations in any one data source. The use of teacher reflections is especially helpful for studying barriers to implementation (p. e48 and p. e144).

Program evaluation activities are well aligned with each of the major program components in the logic model (p. e114). Specifically, the evaluation plan details data sources that map onto each of the program activities (e.g., teachers' implementation of Citizen Math lessons, teacher professional development) and program outcomes (e.g., students' opportunities to learn and improved social-emotional competencies).

Weaknesses:

No weaknesses identified for factor 2.

Reader's Score:

3. (3) 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:

The evaluation plan is clear, and each facet of the program is included in the planned evaluation activities. The evaluation team has outlined a comprehensive set of evaluation questions (p. e41) and potential moderators (p. e45) as well as implementation thresholds (p. e47). For example, the evaluation plan is designed to investigate the impact of Citizen Math on teachers' instructional activities (p. e41) as well as students' mathematics achievement (p. e41). The evaluation plan outlines steps for moderation and mediation analyses for research questions 5 and 6 (p. e46).

The applicant provides a clear and detailed explanation of how the evaluation plan will address key program components (e.g., teachers' use of lessons and lesson guides, see p. e47), fidelity markers, and data sources. Evidence for establishing these fidelity markers is provided (p. e46) via reference to both Durlak & DuPre, 2008 as well as Hill & Erikson, 2019.

Weaknesses:

No weaknesses identified for factor 3.

Reader's Score:

Priority Questions

CPP1 - Computer Science

1. **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:

Weaknesses:

Reader's Score:

Status: Submitted
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